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Introducing WebFOCUS Embedded Business Intelligence

The WebFOCUS Embedded Business Intelligence User’s Guide introduces WebFOCUS embedded business intelligence (BI) and includes comprehensive content on WebFOCUS RESTful Web Services for developers and WebFOCUS Open Portal Services, which are key components in embedded BI solutions. For more information, see WebFOCUS RESTful Web Services on page 19 and WebFOCUS Open Portal Services on page 373.

In addition, the embedded BI demonstration (“demo”) application that is packaged with WebFOCUS Release 8.2 Version 03 is documented in this user’s guide. For more information, see WebFOCUS Embedded Business Intelligence Demonstration Application on page 511.
Introducing WebFOCUS Embedded Business Intelligence

WebFOCUS embedded Business Intelligence (BI) provides the capability of incorporating WebFOCUS content, analytics, and functionality (features) into an external application.

This section provides an introduction to WebFOCUS embedded BI, which also highlights key features and considerations.

In this chapter:
- Understanding Techniques and Considerations For Embedding Business Intelligence
- Best Practices for Embedding BI

Understanding Techniques and Considerations For Embedding Business Intelligence

There are several approaches and techniques that can be used to embed business intelligence (BI) into an external application, including:
1. Embedding WebFOCUS BI Portal pages or other WebFOCUS content into an HTML iframe.
2. Using WebFOCUS web services to embed content into the application.
3. Launching WebFOCUS tools such as InfoAssist from the application.
4. Using WebFOCUS Open Portal Services to embed content (specifically, WebFOCUS portlets) in a JSR 286-compliant portal environment (for example, Microsoft SharePoint).

The embedded BI demonstration ("demo") application that is packaged with WebFOCUS enables you to explore the iframe and web services embedding options.

Implementing Single Sign-On

An important developer consideration for an embedded BI application is how to implement single sign-on (SSO) between the embedded application and WebFOCUS so that the user is not required to provide credentials on multiple occasions. There are several options to consider, including:
- Windows Authentication
- SAML 2.0
- Web SSO Products
- Custom Solutions

In this content and accompanying embedded BI demo application, you will learn how the Trusted Ticket Authentication feature in WebFOCUS can be used to implement SSO.
As shown in the following diagram, the embedded BI demo application authenticates the user (1) with a simple method, as described in *Registering User Names* and then makes a trusted ticket request (2) to WebFOCUS. This is typically referred to as a back channel request because the connection is established directly between the server hosting the embedded application and the server hosting WebFOCUS, and is therefore not seen by the network where the web browser of the user is running.

![Diagram of authentication process](image)

WebFOCUS verifies that the trusted ticket request originates from a trusted host and returns a trusted authentication ticket. The application then presents this ticket in a trusted sign-on request (3), originating from the web browser of the user, in order to obtain a WebFOCUS session cookie. Moving forward from this point, the embedded BI demo application can request content from WebFOCUS using URL requests or the WebFOCUS RESTful Web Services API.

If the embedded application will be making POST requests that create or update WebFOCUS resources, then a Cross-Site Request Forgery (CSRF) token must be obtained from WebFOCUS and submitted with these requests. The trusted sign-on request can include an option to obtain a CSRF token. The embedded BI demo application receives a CSRF token, but does not use it.
Implementing Embedded Business Intelligence in Same Origin and Cross-Origin Scenarios

Another important consideration is the deployment topology, which relates to where the embedded application and WebFOCUS reside. Often times both are deployed on or behind a single web host. This includes when both are deployed on the same application server (as depicted by **Case 1** in the following diagram) and when they are deployed on different servers, but accessed from a single web server or load balancer (**Case 2**). In addition, a proxy method can also be used (as depicted by **Case 3** in the following diagram), where the browser communicates to a proxy, which acts as an intermediary to WebFOCUS.

These are referred to as *same origin* scenarios.

At times it may be necessary for the user to access the embedded application and WebFOCUS from different web hosts as depicted by **Case 4** in this diagram. This is referred to as a *cross-origin* scenario. Due to security controls built into modern web browsers, you will need to configure the WebFOCUS iframe embedding and Cross-Origin Request Sharing (CORS) features before the embedded BI demo application can be used in a cross-origin scenario. For more information on configuring and using cross-origin settings in WebFOCUS, see the *WebFOCUS Security and Administration* content.
Other considerations for embedded BI include branding/rebranding and responsive web design. The embedded BI demo application shows how you can restyle WebFOCUS content and BI Portal pages so that they blend in visually with the host application in order to provide an improved user experience. The sample BI Portals that are included with the demo have responsive page layouts, which require the hosting iframe height to be dynamically adjusted as required by the portal page. This can be accomplished by setting the *Broadcast height for embedding* option in the BI Portals and adding an event listener to the embedded BI demo. For more information on these settings and options, see *Additional Considerations for Embedded Business Intelligence*.

As you can see, WebFOCUS provides robust support for embedded BI. This enables customers to extend commercial and custom web applications with the extensive business intelligence and analytics capabilities available in WebFOCUS with minimal effort and with an exceptional user experience.

**Best Practices for Embedding BI**

This section outlines several best practices for embedding BI.

**Flow Control Options**

- **Front Channel.** Used with iframe and/or AJAX (Asynchronous JavaScript and XML) approaches where the browser connects to WebFOCUS on the same or a different origin host.

- **Proxy Method.** A browser communicates with a proxy that acts as an intermediary to WebFOCUS.

**User Context Options**

- **Service Account.** Typically used with a proxy but does not require it. This would require a user ID and password for the service account. If user-specific content will be returned, then a user ID parameter must be injected by the proxy code so WebFOCUS can use it to filter the data (since in this case WebFOCUS runs all requests as the service account user).

- **Trusted Ticket.** Required for iframe Portal, hyperlink InfoAssist, hyperlink Insight, and PGX page embedding. It is recommended when embedding charts that have interactive features, such as autolink drill-downs. It can be used with proxy or front channel configurations.
WebFOCUS RESTful Web Services

This content describes how to develop and use WebFOCUS RESTful Web Services. It is intended for experienced developers who will use this capability to expose WebFOCUS content and functionality as callable services from a Microsoft Visual Studio .NET or J2EE development platform. Developers should have knowledge of RESTful web service technology and object oriented programming.
Chapter 2

Introducing WebFOCUS RESTful Web Services

This section provides an introduction to REST and RESTful web services in the context of WebFOCUS.

In this chapter:

- What Is REST?
- What are RESTful Web Services?
- Considerations When Using HTTP Methods: GET and POST

What Is REST?

The REST architectural style was developed in parallel with HTTP Version 1.1, based on the existing design of HTTP Version 1.0. The largest implementation of a system conforming to the REST architectural style is the World Wide Web. REST exemplifies how the architecture of the web emerged by characterizing and constraining the macro-interactions of the four components of the web, namely origin servers, gateways, proxies and clients, without imposing limitations on the individual participants. As such, REST essentially governs the proper behavior of participants.

REST-style architectures consist of clients and servers. Clients initiate requests to servers, servers process requests and return appropriate responses. Requests and responses are built around the transfer of representations of resources. A resource can be essentially any coherent and meaningful concept that may be addressed. A representation of a resource is typically a document that captures the current or intended state of a resource.

The client begins sending requests when it is ready to make the transition to a new state. While one or more requests are outstanding, the client is considered to be in transition. The representation of each application state contains links that may be used the next time the client chooses to initiate a new state transition.

REST facilitates the transaction between web servers by allowing loose coupling between different services. REST is less strongly typed than its counterpart, SOAP. The REST language is based on the use of nouns and verbs, and has an emphasis on readability. Unlike SOAP, REST does not require XML parsing and does not require a message header to and from a service provider. This ultimately uses less bandwidth. REST error handling is also different from that used by SOAP.
What are RESTful Web Services?

A RESTful web service (also called a RESTful web API) is a web service that is implemented using HTTP and the principles of REST. It is a collection of resources with four defined aspects:

- Base URL for the web service, such as:
  
  http://example.com/resources

- Internet media type of the data supported by the web service. This is usually XML, but can be any other valid Internet media type providing that it is a valid hypertext standard.

- Set of operations supported by the web service using HTTP methods (for example, GET, PUT, POST, or DELETE).

- The API must be hypertext driven.

Considerations When Using HTTP Methods: GET and POST

Throughout this content, each WebFOCUS RESTful Web Service request that is documented indicates a specific HTTP method to use. This section describes several considerations that developers need to be aware of when using WebFOCUS RESTful Web Service requests with GET and POST HTTP methods.

- If the method indicated is GET, then a GET or a POST may be used. If the method indicated is POST, then only a POST may be used.

- If the WebFOCUS RESTful Web Service request uses a GET method, but the action is not allowed to be a GET, then the following error is generated:

  ERROR_INVALID_HTTP_REQUEST_TYPE
Note: The RESTful WebServices Method Enforcement parameter, which can be active or inactive, controls this behavior. This parameter is located in the WebFOCUS Administration Console (under Application Settings, Filters), as shown in the following image.

Before you use the POST method, you need to determine if the environment you are working in is accessing WebFOCUS from different web hosts, which is referred to as a cross-origin scenario. If so, then you must configure Cross-Origin Request Sharing (CORS) features and Cross-Site Request Forgery (CSRF) functionality in WebFOCUS.

- For more information on configuring and using cross-origin settings in WebFOCUS, see the WebFOCUS Security and Administration content.

- For more information on configuring CSRF functionality, see Cross-Site Request Forgery (CSRF).

The GET method has a limitation related to the amount of data that can be sent in a query. If you need to run a report containing a large amount of parameter data (for example, approximately 2000 bytes or 4000 in some cases), then you may need to use a POST method as an alternative.
This section describes the format and structure of WebFOCUS authentication and Repository RESTful web service requests.

In this chapter:

- Authenticating WebFOCUS Sign-On Requests
- Cross-Site Request Forgery (CSRF)
- Configuring Single Sign On
- Signing Out of WebFOCUS
- WebFOCUS Repository

Authenticating WebFOCUS Sign-On Requests

This RESTful web service request can be used to authenticate WebFOCUS sign-on requests. The XML response that is returned indicates whether the authentication was successful or unsuccessful. The web service response also includes a jsessionid, which exists within the HTTP header. All subsequent WebFOCUS RESTful web services requests must have the jsessionid in the HTTP header. If an application is required to interact with specific WebFOCUS components (for example, WebFOCUS InfoAssist), then the jsessionid is also used when sending the HTTP request to open the component. This eliminates the need to reauthenticate to WebFOCUS. In addition, if you are already signed on to the WebFOCUS BI Portal, you are not required to run this sign-on request. The jsessionid is returned in the HTTP header after a successful sign on.
**Note:** By default, when using RESTful web services with Central Authentication Service (CAS) or Security Assertion Markup Language (SAML), pre-authentication attempts to access protected resources from a user who has not yet signed in to CAS or SAML will redirect the request to the CAS or SAML sign-in pages, which is an undesirable response. To change this response to an HTTP 401 (Unauthorized) status code and allow the application to initiate the authentication, you must configure a setting within the securitysettings.xml file to disable anonymous access, and create an HTTP request header within the RESTful application to indicate an HTTP 401 response instead of a redirect.

- Within the securitysettings.xml file, which is located in the config directory of the WebFOCUS Client installation, set:
  ```
  anonymousAuthEnabled=false
  ```

- Within the RESTful application, create the following HTTP Request Header:
  ```
  disallowSignInRedirect=true
  ```

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs

where:

- **host**
  Is the name of the system where WebFOCUS is installed.

- **port**
  Is the port number used by WebFOCUS.

**Body Format:**

IBIRS_action=signOn&IBIRS_userName=UserID&IBIRS_password=Password

where:

- **UserID**
  Is the user ID that is required to authenticate to the WebFOCUS Repository.

- **Password**
  Is the password that is required to authenticate to the WebFOCUS Repository.
Example:

In the following example, a sign-on attempt is made to the WebFOCUS Repository with a user ID value of admin and a password value of admin.

Post Request URL:

http://localhost:8080/ibi_apps/rs/ibfs

Body:

IBIRS_action=signOn&IBIRS_userName=admin&IBIRS_password=admin

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?><ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple"><ibfsparams size="0"/></ibfsrpc><rootObject _jt="IBFSUserObject" description="" dummy="false" email="" fullPath="IBFS:/SSYS/USERS/admin" name="admin" password="" type="User"><status _jt="IBSSUserStatus" name="UNDEFINED"/></rootObject><groups _jt="ArrayList" size="0"/></ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the sign-on attempt to the WebFOCUS Repository was successful.
The following is a sample response trace from an authentication request:

HTTP/1.1 200 OK
Server: Apache-Coyote/1.1
X-XSS-protection: 0
Set-Cookie: JSESSIONID=BD61C838569C30474977ACDE3DAD8F54; Path=/ibi_apps/; HttpOnly
Expires: Mon, 24 Sep 2012 09:12:48 GMT
Cache-Control: private
Set-Cookie: WF_SESSIONID=1932062683094412614; Path=/
IBI_Messages: 2
IBI_Message1: (IBFS10000)  SUCCESS
IBI_Message2: <IBIWF_SES_AUTH_TOKEN>=<null>
Content-Type: text/xml;charset=iso-8859-1
Transfer-Encoding: chunked
Date: Mon, 24 Sep 2012 09:07:48 GMT
205
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="signOn" returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSUserObject" description="" dummy="false" email=""
fullPath="IBFS:/SSYS/USERS/admin" name="admin" password=""
rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/admin" type="User">
<status _jt="IBSSUserStatus" name="UNDEFINED"/>
<groups_jt="ArrayList" size="0"/>
</rootObject>
</ibfsrpc>

The Set-Cookie parameter that appears in line four of this sample establishes the Session ID
for users and must be included in all subsequent request messages during the session.

The following is a sample trace of a subsequent request:

GET http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository?IBIRS_action=get
HTTP/1.1
Host: localhost:8080
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:15.0) Gecko/20100101
Firefox/15.0.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Cookie: JSESSIONID=BD61C838569C30474977ACDE3DAD8F54;
wcNewPreference=1963156A6FD0D3C6EE81F2C992ED527D;
WF_SESSIONID=1932062683094412614

Cross-Site Request Forgery (CSRF)

A Cross-Site Request Forgery (CSRF), also known as a one-click attack or session riding, is a
type of malicious exploit of a website whereby unauthorized commands are transmitted from a
user that the website trusts.
To prevent these types of attacks, WebFOCUS must be configured to use CSRF token protection. Under this configuration, a CSRF token is generated every time the WebFOCUS RESTful Web Services authentication request (IBIRS_action=signOn) is run, and the CSRF token, containing a token name and a token value, is returned within the response.

The CSRF token must be sent as a parameter for any HTTP POST request. Otherwise, a 403 HTTP return code will occur and a CSRF error message will be logged in the websecurity.yyyy-mm-dd.log file.

The CSRF token prevents attacks by providing a value that was generated randomly and then stored in the web session of the actual authenticated user. The client can then check for this value when processing all remaining requests and responses during the session, and can confirm that the request or response is legitimate because it contains the value assigned to that session. Requests or responses that do not contain a CSRF token, or that contain a CSRF token with a name or value that does not match the name or value assigned by the server, are rejected as invalid.

CSRF token protection is supported in Kerberos and SSO environments, but to obtain the delivery of a CSRF token for pre-authenticated users, an explicit IBIRS_action=signOn request that contains the ID of the pre-authenticated user exactly as it appears in the database of the authentication application and no password must be added to the initial sign in transaction. For more information, see Configuring Single Sign On on page 32.

CSRF protection is enabled by default in the WebFOCUS Administration Console. To confirm and also view the related settings, on the Configuration tab, under the Application Settings folder, click Filters.
The Filters pane opens, as shown in the following image.

![Filters pane](image)

Note that the **Cross Site Request Forgery Protection** check box is selected.

**Obtaining a CSRF Token**

The CSRF token is returned in the response of the WebFOCUS RESTful Web Services authentication action (`IBIRS_action=signOn`), as shown in the following image.

![Web Services Response](image)

In this example, the name of the CSRF token is `IBIWF_SES_AUTH_TOKEN` and the value for the CSRF token is `015a794691fe6a67b8ae059e0d506596`.

30 Information Builders
The name of the CSRF token is taken from the value assigned to the Cross Site Request Forgery Security Token (IBI_CSRF_TOKEN_NAME) setting located on the Filters pane of the Administration Console Configuration tab. By default, the value assigned to this setting is IBIWF_SES_AUTH_TOKEN. However, if your configuration assigns a different value to this setting, WebFOCUS returns a different CSRF token name in the response to the sign-in request message.

**Passing a CSRF Token**

If WebFOCUS is configured to use CSRF token protection, then the CSRF token is passed as a parameter within the body of the POST request for all actions that require a CSRF token.

**Example:**

The following example shows the WebFOCUS RESTful Web Service request to add a user. This request includes a CSRF token, as shown in the body of the request in the following example.

**Post Request URL:**

http://localhost:8080/ibi_apps/rs

**Body:**

```plaintext
IBIRS_path=/SSYS/USERS/testuser&IBIRS_action=put
&IBIRS_object=<object _jt="IBFSUserObject" description="Test Userid"
email="restid@informationbuilders.com" password="rest" type="User">
<status _jt="IBSSUserStatus" name="ACTIVE"/>
</object>
&IBIRS_service=ibfs&IBIWF_SES_AUTH_TOKEN=015a794691fe6a67b8ae059e0d506596
```
Typically, the response returns XML code identifying the entry for the new user as shown in the following example.

```xml
<ibfsrpc _jt="IBFSResponseObject" language= "en_US" name="put" returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
  <ibfsparams size="5">
    <entry key="IBIRS_object" value="*****"/>
    <entry key="IBIRS_private" value="__null"/>
    <entry key="IBIRS_replace" value="true"/>
    <entry key="IBIRS_path" value="/SSYS/USERS/testuser"/>
    <entry key="IBIRS_args" value="__null"/>
  </ibfsparams>
  <rootobject _jt="IBFSUserObject" description="Test Userid" dummy="false" email="restid@informationbuilders.com" fullPath="/SSYS/USERS/testuser" handle="1784804352" length="0" name="testuser" nameSpace="DB" policy="/+/+8P//+///++v+AAAAA" rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/testuser" thumbPath="/ibi_apps/ibi_html/ibi_images/file_type/unknown.svg" type="User" userStatusDisplay="Active">
    <status _jt="IBSSUserStatus" name="ACTIVE"/>
    <groups _jt="ArrayList" size="0"/>
    <pSetList _jt="ArrayList" size="0"/>
  </rootObject>
</ibfsrpc>
```

However, if the CSRF token is not sent, or if an invalid CSRF token is sent in requests that require a CSRF token, then the following error message will be returned in the response:

```html
<!DOCTYPE HTML>
<html>
<head>
<title>403 - Access Denied</title>
</head>
<body style="background-color:#dae1e7; margin:0;">
  <div align="center" style="position:relative;font-family:Arial;top:172px;font-size:25pt;">403 - Access Denied</div>
  <div align="center" style="position:relative;top:178px;font-size:9pt;font-family:Tahoma;color: #485059;">You are not authorized to view this page</div>
</body>
</html>
```

### Configuring Single Sign On

WebFOCUS security can be configured to integrate with software service vendors, such as IBM Tivoli® Access Manager and Computer Associates (CA) SiteMinder®. In addition, authentication methodologies, such as Basic Authentication, Integrated Windows Authentication (IWA), and Kerberos, can also be configured with WebFOCUS security. When WebFOCUS security is configured in this manner, the RESTful web service request to authenticate WebFOCUS is not required. For more information, see [Authenticating WebFOCUS Sign-On Requests](#) on page 25.
However, when working in environments that support Single Sign-On authentication, an 
IBIRS_action=signOn request must be included in the initial sign-in transaction to enable 
WebFOCUS to support the use of CSRF tokens, as shown in the following example.

```javascript
var IBIRS_action = "signOn";
var IBIRS_userName = "user_id";
var IBIRS_password = " ";
```

where:

```javascript
user_id
```

Is the ID of the user as recorded in the single sign-on provider.

The signOn request must include the ID of the User sending the request and a blank 
password, even though these values are not needed for authentication.

When WebFOCUS returns a CSRF token to a user, that token needs to be added to all HTTP 
POST requests originating from that user during the remainder of the session.

A session identifier named WF-JSESSION ID, by default, is also returned to the user within a 
cookie that is included in the header of the response message to the signOn request, as 
shown in the following example.

```plaintext
Set-Cookie: WF-JSESSIONID=0000v6lbcwkcbsF-XoAl9s3IAHe:-1;
```

This cookie identifies the user to the server, and to prevent errors, it must be included in the 
HTTP header of all subsequent RESTful web service request messages delivered from that 
user during the session.

After receiving a response to the first RESTful web service request, the client application must 
parse the response header to retrieve the cookies and send them to subsequent RESTful web 
service requests. The reason for this is to reuse the session in the application server.
Example 1: Adapt the Initial Sign In Request for Single Sign On Environments

The following example shows how to create a signOn request in a single sign on environment.

```html
<!DOCTYPE html>
<html>
<head>
    <title></title>
    <meta charset="utf-8" />
    <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
    <script type="text/javascript" src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>
    <script type="text/javascript">
        var csrf_name;
        var csrf_value;
        var frameToBeWorkedOn = "#AjaxPlaceHolder";
        var contentType = "application/x-www-form-urlencoded; charset=utf-8";

        // To run with preauthentication, use the "Modify Headers" add-in in the
        // browser to set a request header of SM_USER with a value of "rest"
        // which is the userid in Security Center. Then in WebFOCUS Admin Console -
        // Security tab, turn off all authentication schemes except for
        // Preauthentication
        // Use SM_USER and keep all the defaults **** Make sure to START the Modify
        // Headers add-in or the header variable is not sent

        $(document).ready(function (IBIRS_action, IBIRS_userName, IBIRS_password) {
            if (window.XDomainRequest) {
                contentType = "text/plain";
                var webMethod = "http://as8200.ibi.com:8080/ibi_apps/rs";
                var IBIRS_action = "signOn";
                var IBIRS_userName = "rest";
                var IBIRS_password = "";
                var parameters = IBIRS_action+"="+IBIRS_action+
               +'&IBIRS_userName='+IBIRS_userName+
               +'&IBIRS_password='+IBIRS_password;
                var parameters = IBIRS_action+"="+IBIRS_action+
               +'&IBIRS_userName='
                + IBIRS_userName;
```
$.ajax({
    type: "POST",
    url: webMethod,
    data: parameters,
    dataType: "xml",
    xhrFields: {
        withCredentials: true
    },
    crossDomain: true,
    contentType: contentType,
    success: xmlParser,
    error:function(jqXHR,textStatus,errorThrown)
    {
        alert("You can not send Cross Domain AJAX requests: " +
        errorThrown);
    }
});

function xmlParser(xml) {
    $(xml).find("entry").each(function () {
        if ($(this).attr("key") == "IBI_CSRF_Token_Name") {
            csrf_name = $(this).attr("value");
        }
        if ($(this).attr("key") == "IBI_CSRF_Token_Value") {
            csrf_value = $(this).attr("value");
        }
    });
    runReport();
}
Example 2: SiteMinder (Initial Request)

When working with SiteMinder, the SMSESSION cookie must be passed in the RESTful web service request header in addition to the cookie containing the WF-JSESSION ID.

Request:

GET http://host:port/ibi_apps/rs?IBIRS_action=TEST HTTP/1.1
Host: host:port
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:20.0) Gecko/20100101 Firefox/20.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie: SMSESSION=9XYcYZnboGIIfMhEeeZJ8qSQY8Q86jN/WYZ/tco/xYuXM0hNVSI4VI0kDKLq/C0RHRUYd/J6og1b5w1M+I2alSoUJz8m28cUj13Pt221ubduHvaAmEAWHh861QhUmLc/yae552mYoURSzhZ2LexeE+7KgeK8fFVtBjX12DXHPBvv8vpkas8ONEYnaqJbS4Td4jbT0ALf92k2K5H87CDNgr+1T6iWAVEWo972+eSd7t+/iD3MDaadal7CnT1nUk1BYBTQxHNK8tg3eHUxy61LqC7M
K/xmcf+f27S4acueluk2UAeGL9gh+qkmQ8q29fZ/equ5tpUL3L21RWsq9Zf/XxgYM/zU6f29mJ0llsi9XU/KI03TyPMiBT+gj3bGsK3H5Zw8KuqCJafSugG9IzohJFtNuOokCp6Qrm2DtGXhnfiuYKmwMdO06acFh6kVNHMsNEeiT6Uo2spccoHJ8I1MA9F7WKf1/yvdghftYcd6dKlGYFO7biKfPhAy/rjtd23HPI38V5jmMTz3A0LeLvjnlsGbxBxNoTKg/PVF3NPMlo5ls1tTwvKYLZbx87W0t1pOvhisiAwre/2UW7kKHHiPeXIN3VP4E3zmYDCXuoxX+aJdweGEUzzAib9uxu/aVDRMRSJY5RLqyW8dyuqcfBagJ94+n8WvC8tsG7nn1VDEewQNBay7w31rWp0SYVd227KjfdSt1N9eTs08vKDsneKjseScHZV0hCL62zh1JwAaJg3FJNMpnIGG6MmrJ66RC4AhMaKWJgY1pOLi414V3nelJ29YfnK87PAvyY9jf17lZ08vWT5EunMYPrNgsMH+dZ6atK5xx51SCO76UYtEislwScoCQvgV6kZiRLyLwPV03kWeINwAkyM3QdmgAVEutR4L7NyTL4bThU5nXuScRCrQ1+EiqOxPKCBh
Connection: keep-alive
Response:

HTTP/1.1 200 OK
Date: Mon, 06 May 2013 13:38:07 GMT
Server: Apache/2.0.58 (Unix) mod_ssl/2.0.58 OpenSSL/0.9.8e-fips-rhel5
Set-Cookie: SMSESSION=jNJi3BSlZavfl0YRdpNd50mdUsBGBaoa8BDCoIqG/EnvCE2/Vq1M3wAcPPr25I0
JZHmLoeUFMrz60pSwkycBk1MQLdwV2LkQV/1ESzr9Pqz0NyiSwXDPHwA5MXdgpmsH58b2aA
f3x11pKZ/EX3D6VPaIrRmn2E4LV7GK5YD5+wr/hVDBVWKmV1phbefCjDv1anUCZmau8gd1N
6Csxv52ULat8QBoRmXYh+iDxDpCPq6DM4c8z3TiVeHhsRyE+7xsAoY+22+E2VkJ7EDv/hCdL
ar9VS+nBtPALuN/Otze1C/ZrD19X90yl3++ecsrplW+iozRznh7cO43URUNq0Pz9M3Ea8uDJO
RSdeQ9QeoAZ8x+4y9jPEMDVdBSJqE7EZl6d6BMaDFDAUPPP+BYMwx/EHSz6xbpH+NJT6GOG
M9gkvLh31BjibJzF2VvDPsgzhHzlONT1xDJgcYLTIXAt8m17ufvphnJZbpFtMi0WkFHm16Rz
TwZ+9KVr2wT0eM35zhFXU2gFXE/3lgj9sq7MKmhdXe1D022Rd0j7ti99PZq8Q0wsvAhh4P8
8/ITTy/DkFqMhdu97YUEW7bAHfKK60PZtpsDWCqix3T9/+ZA6MICSuWRz1LbD2xQs/zIsgae
K2RHkNTSMA0bKzR+cFUsDzooM5yWApAXvYe/WsB59jQyryEIdG4//f1Q7tMT7F8DnTvDjWs
j9j1glvwdiJWVgP+knPnair9oZ1IseqCJaUCbBxFcpxHkprrx/urqNzkwkm9y0xKcd8jvXA8
1rT0yi1n+jarm/nHfyjYLT1fBOuhXploQn7TRZixA4n57R897LzbmK6CsyreFjllUbiyqSb
X40MQq+HHJ3eV7D8t+Rbdn/5UdhzGFC1I52ZHPkbe+gO9H10wxNSmnwIDEUGjQura7vmv2aU
5cUeAXFXhCuTKVC8l1vtdSd+eAaLau5THQ11Py1RSTQ0f/DwxU1eMon6EZTKRLxR+2mvnpN6P
wJ; path=/; domain=.ibi.com
X-XSS-protection: 0
Expires: Mon, 06 May 2013 13:43:07 GMT
Cache-Control: private
Set-Cookie: WF-JSESSIONID=0000v6lbcwkcbsF-XoAIs3fIAHe:-1; Path=/ibi_apps

Keep-Alive: timeout=15, max=100
Connection: Keep-Alive
Transfer-Encoding: chunked
Content-Type: text/html; charset=utf-8
Content-Language: en-US

The SiteMinder SMSESSION Cookie identifies the authenticated session. For more information, see:

Example 3: SiteMinder (Subsequent Requests)

For all subsequent requests, the SMSESSION cookie, as well as the session cookie retrieved in the initial RESTful web service request, must be passed in the RESTful web service request header, as shown in the following example.

```
GET http://host:port/ibi_apps/rs/ibfs/WFC/Repository?IBIRS_path=%2FWFC%2FRepository&IBIRS_action=get&IBIRS_args=__null HTTP/1.1
Host: host:port
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:20.0) Gecko/20100101 Firefox/20.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Referer: http://host:port/ibi_apps/rs/ibfs?IBIRS_action=TEST
Cookie: SMSESSION=jNJi3BSlZavfl0YRdpNd50mdUsBGbaaD8DCoIgG/EnvCE2/Vq1M3wAcPFr25I0J2HmLoewUFmrrz60pSwkycBk1MQLDWv2lkQva/1ESzr9PqzONYiSwXDPHwa5MXdgpmsH58b2aAF3x11pKZ/EX3D6VPa1rRmmZ4L4Y7GK5YD5+w/rhVDBVWKmV1phbCfCjV1nanfUCZmau8gd1N6Csxv52UlatBQ8oRmXyH+iDxPcPqOM4Nc8z3TiVeHhsRyE+7xsAoY+2+E2VkJj8EdV/ndCd lar9VSh8BtPAlnU/0tze1C/ZRD19X90yL3++escripLAW+iogRzn9h7c043URUqopz9M3Ea8uJDOSRde9QoaoAZ8x+4Y9jPMEVdVbsJqE7EZ1m6dBMaDPDAUPPF+yBmyxv/EHSzMs6zhpH+NJ76GOG9gkvLhH31BJbJZf2vVDPaghzIONT1xDjGcylTIXat8m17ufvphnJZzbFtM10WKh16fRZtwZ+9KvPF2ToeM35zheFXU2gFXE/31gj9sq7MKimhdx1e1D22Rdoj7i999Pzg8Q08wsVaHh4P8/ITTy/DrTfQmhd97YUEW7bAHLKk60PZtpDWCqix3T9+/+ZA6MIdSuWRzX1bD2sXQs/zIsagae/K2RHMkNTSMA0bKz+CFUsDzooM5yWapAxYe/WsB59jQOYrE1d4G/f1Q7MT7F8DnTnVDJwsj9JlqLveWd/JLWVgP+knpnai19cZ1GgszCjAuCbwxFcpVhKprx/urqNzwkm9Yz0xKcd8jvXa81rT0yiN+jarn/nHyjyJLytIfBOuhxpl0q7nTr7Z7ixA45n79879Lzbc5K6CsyreFJ11UbiyqSbX40MQx+hHJj3eV7Db+Rbn/5dHzGFCl1522HPkbe+gO9HLOwxNSmnwIDEUGjQura7vmv2aU5ceoAXFHvCUTKC811vtdSd+eAALau5THQ1ify1RSTQ0f/DwxU1Mon6EZTkRLNXR+2mvpn6fPwj; WF-JSESSIONID=0000v6bwcwcbjbs-XoA1s3IAHe:-1; Connection: keep-alive
```

Signing Out of WebFOCUS

This RESTful web service request can be used to sign out of WebFOCUS. Therefore, all subsequent WebFOCUS RESTful web service requests will not run successfully once signed out. If a WebFOCUS session exists within the same browser session, this session will also be signed out.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs
```

where:

- **host**

  Is the name of the system where WebFOCUS is installed.

- **port**

  Is the port number used by WebFOCUS.
**Body Format:**

`IBIRS_action=signOff`

**Example:**

In the following example, a sign-out request is made to WebFOCUS.

**Post Request URL:**

`http://localhost:8080/ibi_apps/rs/ibfs`

**Body:**

`IBIRS_action=signOff`

**Response:**

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="signOff" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="string">OK</rootObject>
</ibfsrpc>
```

**WebFOCUS Repository**

This section describes the format and structure of RESTful web service requests that are used for a variety of WebFOCUS Repository tasks.

**Creating and Updating a Folder**

This RESTful web service request can be used to create and update a folder within the WebFOCUS Repository.

**HTTP Method:** POST

**REST URL Format:**

`http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName`

where:

- `host`
  
  Is the name of the system where WebFOCUS is installed.

- `port`
  
  Is the port number used by WebFOCUS.
**FolderName**

Is the name of the folder to be created. If the folder being created is a subfolder of an existing folder, then the existing folder name is also included in the REST URL. This shows the path to the folder being created. For example, ExistingFolder/FolderName.

**Body Format:**

```
IBIRS_action=put&IBIRS_object=Object&IBIRS_private=MakeFolderPrivate&IBIRS_replace=ReplaceFolderProperties
```

where:

**Object**

Is the XML object defining the attributes for the folder using the following format:

```
<object _jt="IBFSMRObject"
container="true" description="FolderDescription" summary="Summary"
appName="AppList">
<properties size="numberOfProperties">
<entry key="propertyN"/>
</properties>
</object>
```

where:

**FolderDescription**

Is a description of the folder being created.

**Summary**

Is a brief description describing the contents of the folder.

**AppList (Optional)**

List of applications used in the search path. For example:

```
appName="ibisamp ibidemo"
```

**properties (Optional)**

**numberOfProperties**

Is the number of properties that are to be applied to the folder.

**propertyN**

The property that is applied to the folder. Each property exists with an opening and closing entry tag. For example:

```
<entry key="autogenmyreports"/>
```
Valid properties:

- **autogenmyreports.** Automatically creates My Content folders.
- **hidden.** Do not show in the list of folders.

**MakeFolderPrivate**

Determines whether to make a folder private. Specify `true` or `false`. By default, this attribute is set to `true`.

**ReplaceFolderProperties**

Determines whether the properties of the folder (for example, `FolderDescription` and `Summary`) can be updated.

Specify one of the following:

- **true.** Update the properties of the folder. To update the properties of the folder, the existing properties must be retrieved. The retrieved XML object would then be modified and used as input. The following REST URL retrieves the existing properties for a folder:

  ```
  http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName?
  IBIRS_action=get
  ```

- **false.** Do not update the properties of the folder.

**Example 1:**

In the following example, a folder called Financial_Reports is created, which has SEC Filings as the description.

**POST Request URL:**

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports
```

**Body:**

```xml
IBIRS_action=put&IBIRS_object=<object _jt="IBFSMOBject" container="true"
   description="SEC Filings" summary="Quarterly and Yearly Financial Reports reported
to the Securities and Exchange Commission">
</object>&IBIRS_replace=false
```
Response:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
   returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
   <ibfsparams size="0"/>
   <rootObject _jt="IBFSMRObject" binary="false" container="true"
createdBy="admin"
   createdOn="1345146734216" defaultLng="en_US" description="SEC Filings"
dummy="false"
effectiveRSName="EDASERVE" fullPath="IBFS:/WFC/Repository/Financial_Reports"
   handle="75d099c0_163a_46d8_ba25_ec0be9656b15d"
lastModified="1345146734216"
   lastaccessBy="admin" lastaccessOn="1345146734216" lastmodBy="admin"
length="0"
   name="Financial_Reports" ownerId="10001" ownerName="admin"
ownerType="U"
policy="//v+f///9/////////////////+AAAA" returnedLng="en_US"
summary="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"
type="MRFolder">
   <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
      <entry>
         <key _jt="string" value="en_US"/>
         <value _jt="ArrayList" size="2">
            <item _jt="string" index="0" value="SEC Filings"/>
            <item _jt="string" index="1" value="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"/>
         </value>
      </entry>
   </nlsValues>
   <properties size="0"/>
</rootObject>
</ibfsrpc>
```

If the value for the `returncode` attribute in the XML response is 10000, then the folder was successfully created.

**Example 2:**

In the following example, a folder called Financial_Reports is updated with Financial Quarterly-Yearly Reports set as the new description.

The following REST URL retrieves the existing properties for the Financial_Reports folder:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports?IBIRS_action=get

**POST Request URL:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports
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Body:

```xml
IBIRS_action=put&IBIRS_object=
<rootObject _jt="IBFSMRObject" binary="false" container="true"
  createdBy="admin" createdOn="1349964405620" defaultLng="en_US"
  description="Financial Quarterly-Yearly Reports" dummy="false"
  effectiveSNamespace="EDASERVE"
  fullPath="IBFS:/WFC/Repository/Financial_Reports"
  handle="5d81bab8_7db7_40c9_96b9_df2b00ce3278"
  lastModified="1349964405620" lastAccessBy="admin"
  lastAccessOn="1349969821584" lastmodBy="admin"
  length="0" name="Financial_Reports" ownerId="10001" ownerName="admin"
  ownerType="U"
  policy="/3/D///9+f/////f/////////8AAAA=" returnedLng="en_US"
  rsPath="/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports"
  summary="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"
  type="MRFolder">
  <children _jt="ArrayList" size="0"/>
  <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
    <entry>
      <key _jt="string" value="en_US"/>
      <value _jt="ArrayList" size="2">
        <item _jt="string" index="0" value="Financial Quarterly-Yearly Reports"/>
        <item _jt="string" index="1" value="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"/>
      </value>
    </entry>
  </nlsValues>
</rootObject>&IBIRS_replace=true
```

Response:

If the value for the returncode attribute in the XML response is 10000, then the folder was successfully updated.

Deleting a Folder

This RESTful web service request can be used to delete a folder or subfolder within the WebFOCUS Repository.

HTTP Method: DELETE

REST URL Format:

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName?
IBIRS_action=delete
```
where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*FolderName*

Is the name of the folder to be deleted. If the folder being deleted is a subfolder, then the folder above the subfolder is also included in the REST URL. This shows the path to the folder being deleted. For example, ParentFolderName/FolderName.

**Example:**

In the following example, the Manufacturing_Reports folder is deleted from the Car_Reports folder, which is within the RESTful_Web_Services folder.

**Request:**

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Manufacturing_Reports?IBIRS_action=delete
```

**Response:**

```
<?xml version="1.0" encoding="UTF-8" standalone="nc"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
    returncode="10000" returndesc="SUCCESS" subreturncode="0"
    subsystem="SSYS" type="simple">
    <ibfsparams size="0"/>
    <rootObject _jt="IBFSMRObject" binary="false" container="true"
        createdBy="admin" createdOn="1345149829421"
        defaultLng="en_US" description="Manufacturing Reports" dummy="false"
        effectiveRName="EDASERVE"
        fullPath="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/
            Manufacturing_Reports"
        handle="bb7ea628_2068_4d1c_b3cb_80555a30d53f"
        lastModified="1345149829421" lastaccessBy="admin"
        lastaccessOn="1345152035853" lastmodBy="admin" length="0"
        name="Manufacturing_Reports"
        returnedLng="en_US" type="MRFolder">
        <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
            <entry>44  Information Builders
```
```
If the value for the returncode attribute in the XML response is 10000, then the folder was successfully deleted.

**Deleting a WebFOCUS Repository Report**

This RESTful web service request can be used to delete a report from the WebFOCUS Repository.

**HTTP Method:** DELETE

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ReportName?
IBIRS_action=delete
```

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**FolderName**

Is the name of the folder used for the stored WebFOCUS report. If the folder used for the stored WebFOCUS report exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**ReportName**

Is the name of the WebFOCUS report to delete, which must have a .fex extension.

**Example:**

In the following example, the Income_Statement_March_2010 report is deleted from the Quarterly folder, which is within the Financial_Reports folder.
Request:


Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSMRObject" appName="ibisamp" binary="false"
createdBy="admin"
    createdOn="1345218342649" defaultLng="en_US" description="Income Statement - March 2010"
dummy="false" extension="fex"
fullPath="IBFS:/WFC/Repository/Financial_Reports/Quarterly/Income_Statement_March_2010.fex"
handle="7fefd079_cc95_4b8e_a99e_6d2f71e23020" inheritedPrivacy="true"
lastModified="1345218342649"
    lastaccessBy="admin" lastaccessOn="1345219257305" lastmodBy="admin"
    length="5231"
    name="Income_Statement_March_2010.fex" ownerId="10001"
    ownerName="admin" ownerType="U"
policy="//v+f//////f9/////9///////+AAAAA" returnedLng="en_US"
type="FexFile">
    <content _jt="IBFSByteContent"
        char_set="Cp1252">LSpEbyBub3QgZGVsZXRlIG9yIG1vZGlmeSB0aGUgY29tbWVudHMgYmV...
    </content>
    <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
        <entry>
            <key _jt="string" value="en_US"/>
            <value _jt="ArrayList" size="2">
                <item _jt="string" index="0" value="Income Statement - March 2010"/>
            </value>
        </entry>
    </nlsValues>
    <properties size="1">
        <entry key="tool" value="infoAssist,report,IAFull"/>
    </properties>
</rootObject>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the report was successfully deleted.
Listing Folders and Subfolders

This RESTful web service request can be used to retrieve a list of folders and subfolders within the WebFOCUS Repository.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName?IBIRS_action=get
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **FolderName**
  
  Is the name of the folder to be used in retrieving a list of its subfolders. To obtain a list of folders, `FolderName` should not be included in the REST URL. To obtain additional levels of subfolders for a particular subfolder, the path to the subfolder name must be included in the REST URL. For example, `ParentFolderName/FolderName`.

**Example 1:**

In the following example, a list of folders is retrieved.

**Request:**

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository?IBIRS_action=get
```
Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
   returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
   <ibfsparams size="0"/>
   <rootObject _jt="IBFSMRObj" binary="false" container="true"
createdBy="WebFOCUS"
   createdOn="1344536982043" defaultLng="en_US" description="Content"
dummy="false"
effectiveRSName="EDASERVE" expireDate="1344536982047" externalId=""
fullPath="IBFS:/WFC/Repository" handle="000000000001"
lastModified="1344536982047"
   lastaccessBy="admin" lastaccessOn="1345146849357" lastmodBy="WebFOCUS"
length="0"
   name="Repository" policy="////+f///////9/////////////+AAAAA"
returnedLng="en_US"
   summary="Content Root" type="MRRepository">
   <children _jt="ArrayList" size="3">
      <item _jt="IBFSMRObj" binary="false" container="true"
createdBy="WebFOCUS"
   createdOn="1344536982083" defaultLng="en_US" description="Public"
dummy="false"
effectiveRSName="EDASERVE" expireDate="1344536982083" externalId=""
fullPath="/WFC/Repository/Public" handle="000000000004" index="0"
lastModified="1344536982083" lastaccessBy="admin"
lastaccessOn="1344957209010"
   lastmodBy="WebFOCUS" length="0" name="Public" parent="Repository"
policy="////+f///////9///+AAAAA" returnedLng="en_US"
   summary="Public Folder" type="MRFolder">
   <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
   <entry>
      <key _jt="string" value="en_US"/>
      <value _jt="ArrayList" size="2">
         <item _jt="string" index="0" value="Public"/>
         <item _jt="string" index="1" value="Public Folder"/>
      </value>
   </entry>
</nlsValues>
</children>
</rootObject>
</ibfsrpc>
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```xml
<entry>
    <nlsValues size="0"/>
</item>
    <item _jt="IBFSMRObject" binary="false" container="true"
createdBy="admin"
    createdOn="1345146734216" defaultLng="en_US" description="SEC Filings"
dummy="false"
effectiveRSName="EDASERVE" fullPath="IBFS:/WFC/Repository/Financial_Reports"
    handle="75d099c0_163a_46d8_ba25_ec0be965b15d" index="1"
lastModified="1345146734216"
    lastaccessBy="admin" lastaccessOn="1345146755132" lastmodBy="admin"
length="0"
    name="Financial_Reports" ownerId="10001" ownerName="admin"
ownerType="U"
    parent="Repository" policy="//v+f/////////9/////////////+AAAAA"
    returnedLng="en_US"
    summary="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"
type="MRFolder">
    <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
        <entry>
            <key _jt="string" value="en_US"/>
            <value _jt="ArrayList" size="2">
                <item _jt="string" index="0" value="SEC Filings"/>
                <item _jt="string" index="1" value="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"/>
            </value>
        </entry>
    </nlsValues>
</item>

<item _jt="IBFSMRObject" binary="false" container="true"
createdBy="admin"
    createdOn="1344607303673" defaultLng="en_US" description="RESTful Web Services"
dummy="false"
effectiveRSName="EDASERVE" fullPath="IBFS:/WFC/Repository/RESTful_Web_Services"
    handle="ac08f200_d2f2_4ab6_9b60_b62d8f2ad345" index="2"
lastModified="1344957300737"
    lastaccessBy="admin" lastaccessOn="1345146071751"
length="0"
    name="RESTful_Web_Services" ownerId="10001" ownerName="admin"
ownerType="U"
    parent="Repository" policy="//v+f/////////9/////////////+AAAAA"
    returnedLng="en_US"
    summary="For documenting RESTful Web Services" type="MRFolder">
```

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Each folder definition is defined within the opening and closing item tag. The type attribute for a folder is MRFolder. The name attribute defines the name of the folder. The description attribute defines the title for the folder. The summary attribute defines a brief description for the contents of the folder.

In this example, there are three folders, as listed in the following table.

<table>
<thead>
<tr>
<th>Folder Name</th>
<th>Title</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Public</td>
<td>Public Folder.</td>
</tr>
<tr>
<td>RESTful_Web_Services</td>
<td>RESTful Web Services</td>
<td>For documenting RESTful Web Services.</td>
</tr>
<tr>
<td>Financial_Reports</td>
<td>SEC Filings</td>
<td>Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission.</td>
</tr>
</tbody>
</table>

Example 2:

In the following example, a list of subfolders for the SEC Filings (Financial_Reports) folder is retrieved.
Request:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports?
IBIRS_action=get

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSMRObject" binary="false" container="true"
createdBy="admin"
createdOn="1345146734216" defaultLng="en_US" description="SEC Filings"
dummy="false"
effectiveRSName="EDASERVE" fullPath="IBFS:/WFC/Repository/Financial_Reports"
handle="75d099c0_163a_46d8_ba25_ec0be965b15d"
lastModified="1345146734216"
lastaccessBy="admin" lastaccessOn="1345147040831" lastmodBy="admin"
length="0"
name="Financial_Reports" ownerId="10001" ownerName="admin"
ownerType="U"
policy="//v+f///////9/////////////+AAAAA" returnedLng="en_US"
summary="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"
type="MRFolder">
<children _jt="ArrayList" size="1">
	<item _jt="IBFSMRObject" binary="false" container="true"
createdBy="admin"
createdOn="1345147005204"
defaultLng="en_US" description="Quarterly" dummy="false"
effectiveRSName="EDASERVE"
fullPath="IBFS:/WFC/Repository/Financial_Reports/Quarterly"
handle="a0cfcde1_fb34_4b07_b20d_4144094ec5c2"
index="0" inheritedPrivacy="true" lastModified="1345147005204"
lastaccessBy="admin"
lastaccessOn="1345147013034" lastmodBy="admin" length="0"
name="Quarterly" ownerId="10001" ownerName="admin"
ownerType="U" parent="Financial_Reports" policy="/v+f/////////9//////////+AAAAA"
returnedLng="en_US"
summary="Quarterly Financial Reports reported to the Securities and
Each folder definition is defined within the opening and closing item tag. The name attribute defines the name of the folder. The description attribute defines the title for the folder. The summary attribute defines a brief description for the contents of the folder.

In this example, there is one subfolder, as listed in the following table.

<table>
<thead>
<tr>
<th>Subfolder Name</th>
<th>Title</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarterly</td>
<td>Quarterly</td>
<td>Quarterly Financial Reports reported to the Securities and Exchange Commission.</td>
</tr>
</tbody>
</table>

**Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository**

This RESTful web service request can be used to retrieve the content list within a folder. The content can be additional subfolders, WebFOCUS reports, ReportCaster Schedules, and Library Content.

**HTTP Method:** GET
REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName?
IBIRS_action=get

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder to be used in retrieving the content list. If the content exists in a
subfolder, then the path to the subfolder name must be included in the REST URL. For
example, ParentFolderName/FolderName.

Example:

In the following example, a content list for the Car_Reports folder is retrieved. The Car_Reports
folder is a subfolder of the RESTful_Web_Services folder.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports?IBIRS_action=get

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrprc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
     returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
     type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSMRObj ect" binary="false" container="true"
createdBy="admin"
     createdBy="admin"
     createdOn="1344607319557" defaultLng="en_US" description="Car Reports"
dummy="false"
     effectiveRSName="EDASERVE" fullPath="IBFS:/WFC/Repository/
     RESTful_Web_Services/Car_Reports"
Each content definition is defined within the opening and closing item tag.

The type attribute defines the content type for one of the following content items:

- **MRFolder.** Subfolder.
- **FexFile.** WebFOCUS Report.
- **CasterSchedule.** ReportCaster Schedule.
- **CasterLibrary.** Library Content.
- **CasterAccessList.** Library Access List.

The name attribute defines the name for the content item. The description attribute defines the title for the item. The summary attribute defines a brief description for the content item.

**Listing the Versions for a Report Library Report**

This RESTful web service request can be used to retrieve the versions list for a WebFOCUS report within the Report Library.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ContentName?
IBIRS_action=get
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.
**FolderName**

Is the name of the folder used for the stored WebFOCUS report. If the folder used for the stored WebFOCUS report exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**ContentName**

Is the name of the stored WebFOCUS report as defined in the name attribute when listing the content of a folder. For more information, see *Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository* on page 52.

**Example:**

In the following example, a versions list for the stored library report identified by L1748ltvgq02.lib within the Car_Reports folder is retrieved. The Car_Reports folder is a subfolder of the RESTful_Web_Services folder. L1748ltvgq02.lib is defined in the name attribute when listing the content of a folder. For more information, see *Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository* on page 52.

The description attribute in the content list defines the title for stored report content. The title for L1748ltvgq02.lib, as per the Listing Reports, Schedules, and Library Content example, is defined as *Sales for a Specific Country*.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/L1748ltvgq02.lib?IBIRS_action=get

**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000"
   returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
```
Each version definition is defined within the opening and closing `item` tag.

The `version` attributes are defined in the following list:

- **versionNumber.** The version number for the stored WebFOCUS report.
- **format.** The format of the WebFOCUS Report (for example, HTML).
- **createDate.** The date the version was created.
 expireDate. The date the version will expire from the Report Library.

Listing the Parameters for a Repository Report

This RESTful web service request can be used to retrieve the current parameters for a WebFOCUS report in the WebFOCUS Repository.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/FexName?
IBIRS_action=describeFex

where:

host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

FolderName
Is the name of the folder used for the stored WebFOCUS report. If the folder used for the stored WebFOCUS report exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

FexName
Is the name of the WebFOCUS report as defined in the name attribute when listing the content of a folder. For more information, see Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository on page 52.

Example:

In the following example, the current parameters for the Sales_for_a_Specific_Country.fex, which exists in the Car_Reports folder, is retrieved. The Car_Reports folder is a subfolder of the RESTful_Web_Services folder. Sales_for_a_Specific_Country.fex is defined in the name attribute when listing the content of a folder. For more information, see Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository on page 52.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_for_a_Specific_Country.fex?
IBIRS_action=describeFex
Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
 returnndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
 <ibfsparams size="0"/>
 <rootObject isSavedParam="false">
 <bindingInfo _jt="HashMap" loadFactor="0.75" threshold="24">
   <entry>
     <key _jt="string" value="SUBSYSTEM"/>
     <value isReqFrm="false" value="Self Service"/>
   </entry>
   <entry>
     <key _jt="string" value="IBI_WF_charset"/>
     <value isReqFrm="false" value="windows-1252"/>
   </entry>
   <entry>
     <key _jt="string" value="IBI_Webapp_Context_Default"/>
     <value isReqFrm="false" value="/ibi_apps"/>
   </entry>
   <entry>
     <key _jt="string" value="SCRIPT_NAME"/>
     <value isReqFrm="false" value="/ibi_apps/WFServlet"/>
   </entry>
   <entry>
     <key _jt="string" value="IBFS1_action"/>
     <value isReqFrm="true" value="runItem"/>
   </entry>
   .
   .
   .
   <entry>
     <key _jt="string" value="SAVE_PARMRPT"/>
     <value isReqFrm="false" value="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_for_a_Specific_Country.fex"/>
   </entry>
 </bindingInfo>
 </rootObject>
</ibfsrpc>
<values accessOrder="false" loadFactor="0.75" threshold="12"/>
</value>
</entry>
<entry>
  <key _jt="string" value="FOCEXURL"/>
  <value format="" max="0.0" min="0.0" name="FOCEXURL" strDef="">
    <type name="set"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
<entry>
  <key _jt="string" value="FOCHTMLURL"/>
  <value format="" max="0.0" min="0.0" name="FOCHTMLURL" strDef="">
    <type name="set"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
<entry>
  <key _jt="string" value="GOOGLEMAPSAPIKEY"/>
  <value format="" max="0.0" min="0.0" name="GOOGLEMAPSAPIKEY" strDef="">
    <type name="set"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
<entry>
  <key _jt="string" value="FOCREL"/>
  <value format="" max="0.0" min="0.0" name="FOCREL" strDef="">
    <type name="system"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
<entry>
  <key _jt="string" value="EXCELSERVURL"/>
  <value format="" max="0.0" min="0.0" name="EXCELSERVURL" strDef="">
    <type name="set"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
Each parameter definition is defined within the opening and closing `entry` tag.

The XML response that is returned includes many system parameters along with the parameters defined in the WebFOCUS report. Entries that have a `name` attribute for the `type` element of either `unresolved` or `defaultType` are the WebFOCUS report parameters, as shown in the following example:

```
<type name="unresolved"/>
```

The `name` attribute within the `value` element defines the parameter that is being used in the selection, as shown in the following example:

```
<value description="Select Country:" format="" max="0.0" min="0.0" name="COUNTRY" operation="" strDef="">
```

The `description` attribute within the `value` element defines the prompt title for the parameter.

If a parameter definition within a WebFOCUS report has a list of valid values for the selection, additional `entry` elements will exist in the XML within the parameter definition. The `value` attribute within the `key` element would contain each valid value.
In this example, ENGLAND, JAPAN, and FRANCE are the valid values that can be passed to this parameter.

**Running a Report From the WebFOCUS Repository**

This RESTful web service request can be used to run a report stored in the WebFOCUS Repository.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ReportName

where:

*host*

   Is the name of the system where WebFOCUS is installed.

*port*

   Is the port number used by WebFOCUS.

*FolderName*

   Is the name of the folder used for the stored WebFOCUS report. If the folder used for the stored WebFOCUS report exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

*ReportName*

   Is the name of the WebFOCUS report to run. It must include a .fex extension.

**Body Format:**

IBIRS_action=run&IBIRS_proxyURL=clientPath&IBIRS_userName=UserId&
IBIRS_password=Password&parmNameN=parmValueN&IBIRS_args=Object
where:

clientPath

Is the path to the client application making the RESTful web service calls to WebFOCUS. For example:


The parameter is used when the initial WebFOCUS report contains drill-down links, links to images, On-Demand Paging reports, or Active Cache reports.

This IBIRS_proxy URL is required for redirected output types such as PDF and Excel.

When you click on a drill-down link or pages in an On-Demand Paging report, the request will be routed to the client application, as defined by the clientPath value, instead of WebFOCUS. All of the parameter names and values are sent with the request. The client application will then have to redirect the request to the following URL, which is the WebFOCUS environment:

http://host:port/ibi_apps/rs/ibfs

Userid

Is the Reporting Server user ID. If the Reporting Server is running with Security Off or the Reporting Server sign-in credentials are configured in the WebFOCUS Reporting Server Client settings, then this parameter does not have to be sent in the REST request.

Password

Is the Reporting Server password. If the Reporting Server is running with Security Off or the Reporting Server sign-in credentials are configured in the WebFOCUS Reporting Server Client settings, then this parameter does not have to be sent in the REST request.

parmNameN

Is the name of the defined parameter that will be passed to the Reporting Server.

**Note:** The number of defined parameters can vary and depend on the number of parameters within the WebFOCUS report. For example, a WebFOCUS report that requires two parameters will also require these parameters and corresponding values to be set in the body of this RESTful web service (&parmName1=parmValue1&parmName2=parmValue2). In a different WebFOCUS report, there could be as many parameters as required (three, four, five, and so on).

parmValueN

Is the value of the defined parameter that will be passed to the Reporting Server.
Object (Optional)

Is the XML object that is used to turn off redirection when retrieving report output for MIME types like EXCEL and PDF using the following format:

```
<rootObject _jt="HashMap">
  <entry>
    <key _jt="string" value="IBFS_contextVars"/>
    <value _jt="HashMap">
      <entry>
        <key _jt="string" value="IBIWF_redirect"/>
        <value _jt="string" value="NEVER"/>
      </entry>
    </value>
  </entry>
</rootObject>
```

Example:

In the following example, the Sales_for_a_Specific_Country report is being executed only for Japan.

Request:

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_for_a_Specific_Country.fex
```

Body:

```
IBIRS_action=run&COUNTRY=JAPAN
```

Response:

The response is a report in either HTML, Excel, PDF, active report, or a graph.

Change Management Export

This RESTful web service request can be used to export directories, files, and groups to be used by Change Management Import.

Note: This RESTful web service is common to functionality in the WebFOCUS Repository and the Reporting Server.

HTTP Method: POST

REST URL Format:

```
http://host:port/ibi_apps/rs/impex
```
where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**Body Format:**

```
IBIRS_action=cmExport&IBIRS_fileName=fileName
```

where:

**fileName**

Is the name of the scenario for the Change Management Export. The scenario must exist in the /WebFOCUSxx/cm/export folder.

**Example:**

In the following example, the Change Management scenario called RESTWS is exported.

**Request:**

```
http://localhost:8080/ibi_apps/rs/impex
```

**Body:**

```
IBIRS_action=cmExport&IBIRS_fileName=RESTWS
```

**Response:**

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="cmExport"
returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
  <ibfsparams size="1">
    <entry key="IBIRS_fileName" value="RESTWS"/>
  </ibfsparams>
  <rootObject _jt="string"/>
</ibfsrpc>
```

If the value for the `returncode` attribute in the XML response is 10000, then the scenario was exported successfully.

**Change Management Import**

This RESTful web service request can be used to import directories, files, and groups that were created using Change Management Export.
**Note:** This RESTful web service is common to functionality in the WebFOCUS Repository and the Reporting Server.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/impex

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

**Body Format:**


where:

*fileName*

Is the name of the scenario in the Change Management Export. The scenario must exist in the /WebFOCUSxx/cm/import folder.

*Overwrite*

Can be set as follows:

- **true.** Overwrites existing files and groups.
- **false.** Does not overwrite existing files and groups.

*UserOpt*

Can be set as follows:

- **0.** Do not import users.
- **1.** Import users but do not overwrite.
- **2.** Import users and overwrite.
RoleOpt

Can be set as follows:

- **0.** Do not import roles.
- **1.** Import roles but do not overwrite.
- **2.** Import roles and overwrite.

RuleOpt

Can be set as follows:

- **true.** Import rules.
- **false.** Do not import rules.

GroupOpt

Can be set as follows:

- **0.** Do not import groups.
- **1.** Import groups but do not overwrite.
- **2.** Import groups and overwrite.

Example:

In the following example, the Change Management scenario called ImportMR is imported. Existing files will not be overwritten. Users, groups, roles, and rules will not be imported.

Request:

http://localhost:8080/ibi_apps/rs/impex

Body:

```text
IBIRS_action=cmImport&IBIRS_fileName=ImportMR&IBIRS_resOverwrite=false &IBIRS_importUsers=0&IBIRS_importRoles=0&IBIRS_importRules=false&IBIRS_importGroups=0
```
Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="cmImport"
returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="7">
<entry key="IBIRS_resOverwrite" value="false"/>
<entry key="IBIRS_fileName" value="ImportMR"/>
<entry key="IBIRS_runOptions" value="0"/>
<entry key="IBIRS_importUsers" value="0"/>
<entry key="IBIRS_importRoles" value="0"/>
<entry key="IBIRS_importRules" value="false"/>
<entry key="IBIRS_importGroups" value="0"/>
</ibfsparams>
<rootObject _jt="string"/>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the scenario was imported successfully.

Publishing an Item

This RESTful web service request can be used to publish an item.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ItemName

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder that will either contain the item (ItemName) to publish or be the folder that is published when ItemName is omitted. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.

ItemName

Is the name of the item to publish, which can include WebFOCUS reports, schedules, library access lists, and library content.
**Body Format:**

IBIRS_action=publish

**Example:**

In the following example, a folder called Financial_Reports is published.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports

**Body:**

IBIRS_action=publish

**Response:**

```xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="publish" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
    <ibfsparams size="1">
        <entry key="IBIRS_" value="/WFC/Repository/Financial_Reports"/>
    </ibfsparams>
    <rootObject _jt="string"/>
</ibfsrpc>
```

**Unpublishing an Item**

This RESTful web service request can be used to unpublish an item.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ItemName

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.
**FolderPath**

Is the name of the folder that will either contain the item (*ItemName*) to unpublish or be the folder that is unpublished when *ItemName* is omitted. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderPath/SubFolderPath.

**ItemName**

Is the name of the item to unpublish, which can include WebFOCUS reports, schedules, library access lists, and library content.

**Body Format:**

IBIRS_action=unpublish&IBIRS_ownerPath=OwnerPath&IBIRS_clearShares=OwnerPath

where:

**OwnerPath**

If the item is private, then the full path to the owner of the item. For example, /SSYS/USERS/admin.

**Example:**

In the following example, a folder called Financial_Reports is unpublished.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports

**Body:**

IBIRS_action=unpublish&IBIRS_ownerPath=&IBIRS_clearShares=false
Response:

```xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="unpublish"
returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
  <ibfsparams size="3">
    <entry key="IBIRS_clearShares" value="false"/>
    <entry key="IBIRS_ownerPath"/>
    <entry key="IBIRS_" value="/WFC/Repository/Financial_Reports"/>
  </ibfsparams>
  <rootObject _jt="IBFSUserObject" description="Administrator"
dummy="false" email="restadmin@informationbuilders.com"
    fullPath="/SSYS/USERS/admin"
    password="$faa2f1da92f72a7d50901495f1d2962a242af8aad5c7958a9f86013a190482974970e81ee0259ba82c663f4"
    rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/admin"
    type="User">
    <status _jt="IBSSUserStatus" name="ACTIVE"/>
  </rootObject>
</ibfsrpc>
```

Copying an Item

This RESTful web service request can be used to copy an item from one folder to another.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ItemName
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **FolderName**
  
  Is the name of the folder that will either contain the item (ItemName) to copy or be the folder that is copied when ItemName is omitted. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.
**ItemName**

Is the name of the item to copy, which can include WebFOCUS reports, schedules, library access lists, and library content.

**Body Format:**

```
IBIRS_action=copy&IBIRS_destination=destLocation&IBIRS_replace=destLocation
```

where:

**destLocation**

Is the destination location (specified as FolderName/ItemName) of the copied item.

*destLocation*

Specify one of the following:

- **true.** Replaces the contents of the item.
- **false.** Does not replace the contents of the item.

**Example:**

In the following example, the Drilldown_Report.fex WebFOCUS report is copied from the Car_Reports folder within the RESTful_Web_Services folder to the Financial_Reports folder. The contents are replaced.

**Request:**

```
```

**Body:**

```
IBIRS_action=copy&IBIRS_destination=/WFC/Repository/Financial_Reports/Drilldown_Report.fex&IBIRS_replace=true
```
Response:

```xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfrpc _jt="IBFSResponseObject" language="EN" name="copy" returncode="10000"
    returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
    <ibfsparams size="4">
        <entry key="IBIRS_destination" value="/WFC/Repository/Financial_Reports/Drilldown_Report.fex"/>
        <entry key="IBIRS_replace" value="true"/>
        <entry key="IBIRS_args" value="_null"/>
        <entry key="IBIRS_version" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/Drilldown_Report.fex"/>
    </ibfsparams>
    <rootObject _jt="IBFSMRObject" binary="false" createdBy="admin"
        createdOn="1350346978647" defaultLng="en_US"
        description="Drilldown Report" dummy="false" extension="fex"
        fullPath="IBFS:/WFC/Repository/Financial_Reports/Drilldown_Report.fex"
        handle="afba56f3_3e71_4ecf_9682_c88bb913634a" inheritedPrivacy="true"
        lastModified="1350348325118" lastaccessBy="admin"
        lastaccessOn="1350348325118" lastmodBy="admin" length="5302"
        name="Drilldown_Report.fex" ownerId="10001"
        ownerName="admin" ownerType="U"
        policy="/3/D///9+f7/////8AAAAA" returnedLng="en_US"
        rsPath="/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports/Drilldown_Report.fex"
        type="FexFile">
        <content _jt="IBFSByteContent" char_set="Cp1252">LSpEbyBub3QgZGVsZXRlIG9yIG1vZGlmeSB0aGUgY29tbWVudHMgYmVsb3cKLSogVXNlZCB0byBUZXN0IFJFU1QgQ29weSBmdW5jdGlvbmFsaXR5IHN5c3RlbmRlcxIgY3Jvc3QgZG9jdGl2ZSAtY29tIGlkIENoYW5nIHRoYXQgZm9ybDwKCI5Ig==
        </content>
        <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
            <entry>
                <key _jt="string" value="en_US"/>
                <value _jt="ArrayList" size="2">
                    <item _jt="string" index="0" value="Drilldown Report"/>
                    <item _jt="string" index="0" value="Drilldown Report"/>
                </value>
            </entry>
        </nlsValues>
        <properties size="1">
            <entry key="tool" value="infoAssist,report,IAFull"/>
        </properties>
    </rootObject>
</ibfrpc>
```
Moving an Item

This RESTful web service request can be used to move an item from one folder to another.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ItemName
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **FolderName**
  
  Is the name of the folder that will either contain the item (*ItemName*) to move or be the folder that is moved when *ItemName* is omitted. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.

- **ItemName**
  
  Is the name of the item to move, which can include WebFOCUS reports, schedules, library access lists, and library content.

**Body Format:**

```
IBIRS_action=move&IBIRS_destination=destLocation&IBIRS_replace=ReplaceFlag
```

where:

- **destLocation**
  
  Is the destination location (specified as FolderName/ItemName) of the moved item.

- **ReplaceFlag**
  
  Specify one of the following:

  - **true.** Replaces the contents of the item.
  - **false.** Does not replace the contents of the item.
Example:

In the following example, the Drilldown_Report.fex WebFOCUS report is moved from the Car_Reports folder within the RESTful_Web_Services folder to the Financial_Reports folder. The contents are not replaced.

Request:


Body:

IBIRS_action=move&IBIRS_destination=/WFC/Repository/Financial_Reports/Drilldown_Report.fex&IBIRS_replace=false

Response:

```xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="move" returncode="10000"
  returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="4">
    <entry key="IBIRS_destination" value="/WFC/Repository/Financial_Reports/Drilldown_Report.fex"/>
    <entry key="IBIRS_replace" value="false"/>
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_*" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/Drilldown_Report.fex"/>
  </ibfsparams>
  <rootObject _jt="IBFSMROObject" binary="false" createdBy="admin"
    createdOn="1348824882927" defaultLng="en_US"
    description="Drilldown Report" dummy="false" extension="fex"
    fullPath="IBFS:/WFC/Repository/Financial_Reports/Drilldown_Report.fex"
```
Renaming an Item

This RESTful web service request can be used to rename an item.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ItemName
```

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.
**FolderName**

Is the name of the folder that will either contain the item (ItemName) to rename or be the folder that is renamed when ItemName is omitted. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.

**ItemName**

Is the name of the item to rename, which can include WebFOCUS reports, schedules, library access lists, and library content.

**Body Format:**

IBIRS_action=rename&IBIRS_newName=renamedItem

where:

renamedItem

Is the name of the renamed item.

**Example:**

In the following example, the Financial_Reports folder is renamed to Financial_Reports_Renamed.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports

**Body:**

IBIRS_action=rename&IBIRS_newName=Financial_Reports_Renamed
Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="rename" returncode="10000"
  returndesc="SUCCESS"
  subreturncode="0" subsystem="SSYS" type="simple">
  <ibfparams size="3">
    <entry key="IBIRS_newName" value="Financial_Reports_Renamed"/>
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_" value="/WFC/Repository/Financial_Reports"/>
  </ibfparams>
  <rootObject _jt="IBFSMRObject" binary="false" container="true" createdBy="admin"
    createdOn="1349964405620" defaultLng="en_US" description="Financial Quarterly-Yearly Reports"
    dummy="false" fullPath="IBFS:/WFC/Repository/Financial_Reports_Renamed"
    handle="5d81bab8_7db7_40c9_96b9_df2b00ce3278"
    lastModified="1350351652269" lastaccessBy="admin"
    lastaccessOn="1350351652269" lastmodBy="admin" length="0"
    name="Financial_Reports_Renamed"
    ownerId="10001" ownerName="admin" ownerType="U"
    policy="/3/D///9+f///f/////////8AAAA="
    returnedLng="en_US" rsPath="/ibi_apps/rs/ibfs/WFC/Repository/
    Financial_Reports_Renamed"
    summary="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"
    type="MRFolder">
    <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
      <entry>
        <key _jt="string" value="en_US"/>
        <value _jt="ArrayList" size="2">
          <item _jt="string" index="0" value="Financial Quarterly-Yearly Reports"/>
          <item _jt="string" index="1" value="Quarterly and Yearly Financial Reports reported to the Securities and Exchange Commission"/>
        </value>
      </entry>
    </nlsValues>
    <properties size="0"/>
  </rootObject>
</ibfsrpc>

Uploading a WebFOCUS Report

This RESTful web service request can be used to upload a WebFOCUS report to the WebFOCUS environment.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/FexName
where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder that will contain the WebFOCUS report to be uploaded. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.

FexName

Is the name of the WebFOCUS report to be uploaded, which must include a .fex extension.

Body Format:

IBIRS_action=put&IBIRS_object=Object

where:

Object

Is the XML object defining the WebFOCUS report, which uses the following format:

<rootObject _jt="IBFSMRObject" description="ReportTitle" type="FexFile">
  <content _jt="IBFSByteContent" char_set="Cp1252">ContentBase64</content>
</rootObject>

where:

ContentBase64

Is the base64 encoded text of the WebFOCUS report to be uploaded.

ReportTitle

Is the title of the WebFOCUS report to be uploaded.

Example:

In the following example, a WebFOCUS report called Drilldown_Report.fex is created in the Financial_Reports folder.

Request:

Body:

IBIRS_action=put&IBIRS_object=<rootObject _jt="IBFSMOObject" description="Drilldown Report" type="FexFile">
<entry _jt="IBFSByteContent" char_set="Cp1252">LSpEbyBub3QgZGVsZXRlIG9yIG1vZGlmeSB0aGUgY29tbyVudHMgYmVsb3cKLSogVXNlZCB0byBUZXN0IFJFU1QgTW92ZSBmdW5jdGlvbmk==
TgpPTiBUQUJMRSBTRVQgSFRNTEVOQ09ERSBPTgpPTiBUQUJMRSBTRVQgU1RTkNMVURFPUlCRlM6L0ZJTEUvSUJJX0hUTkRSUFN0aXNhbmdFh3Npc3QvaW50bC9FTi9FTk1BRGVmYXVsdF9jb21iW51LnN0eSwkClRZUEU9UkUkVQT1JULCBUSVRMRVRFWFQ9J1dGX1RJVEwFLlFVT1RFRFNUuk0RywgU1VNUFRWT0mV0ZfU1VNTUFSWS5RVU9URURTFJTkcsICQKRU5EU1RZTEUKRU5ECgotUlVOCg==
</content>
</rootObject>

Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="5">
<entry key="IBIRS_replace" value="true"/>
<entry key="IBIRS_private" value="__null"/>
<entry key="IBIRS_object" value="&lt;rootObject _jt="IBFSMOObject" description="Drilldown Report" type="FexFile">
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Creating a URL Link

This RESTful web service request can be used to create a URL link within the WebFOCUS environment.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/UrlName
```
where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder that will contain the URL link. If the folder is a subfolder, then the path to the subfolder must be included in the REST URL. For example, TopFolderName/SubFolderName.

UrlName

Is the name of the URL link to be created, which must include a .url extension.

Body Format:

IBIRS_action=put&IBIRS_object=Object

where:

Object

Is the XML object defining the URL link, which uses the following format:

```xml
<rootObject _jt="IBFSMRObj" description="UrlLinkTitle" type="URLFile"> <content _jt="IBFSByteContent" char_set="Cp1252">UrlBase64</content> <properties size="1"> <entry key="tool" value="url"/> </properties> </rootObject>
```

where:

UrlLinkTitle

Is the title of the URL link.

UrlBase64

Is the base64 encoded text of the URL.

Example:

In the following example, a URL called Yahoo.url is created in the Car_Reports folder. The URL of http://www.yahoo.com is base64 encoded.
Request:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Yahoo.url

Body:

IBIRS_action=put&IBIRS_object=<rootObject _jt="IBFSMultiObject" description="Yahoo" type="URLFile">
<content _jt="IBFSByteContent" char_set="Cp1252">aHR0cDovL3d3dy55YWhvby5jb20=</content>
<properties size="1">
<entry key="tool" value="url"/>
</properties>
</rootObject>

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?><ibfsrpc _jt="IBFSResponseObject" language="EN" name="put" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="5">
<entry key="IBIRS_replace" value="true"/>
<entry key="IBIRS_private" value="__null"/>
<entry key="IBIRS_object" value="****"/>
<entry key="IBIRS_args" value="__null"/>
<entry key="IBIRS_language" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/Yahoo.url"/>
</ibfsparams>
<rootObject _jt="IBFSMultiObject" binary="false" createdBy="admin" createdOn="1356625917312" defaultLng="en_US" description="Yahoo" dummy="false" extension="url" fullPath="/WFC/Repository/RESTful_Web_Services/Car_Reports/Yahoo.url" handle="1711f8b4_abbc_41c3_9c4c_7fd3288d4c62" lastModified="1356625917312" lastaccessBy="admin" lastaccessOn="1356625917312" lastmodBy="admin" length="20" name="Yahoo.url" policy="///D///9+F/////////v/////////+AAAA=" returnedLng="en_US" rsPath="/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Yahoo.url" type="URLFile">
<content _jt="IBFSByteContent" char_set="Cp1252">aHR0cDovL3d3dy55YWhvby5jb20=</content>
<nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
<entry>
<key _jt="string" value="en_US"/>
<value _jt="ArrayList" size="2">
<item _jt="string" index="0" value="Yahoo"/>
</value>
</entry>
</nlsValues>
<properties size="0"/>
</rootObject>
</ibfsrpc>
Retrieving Content for a WebFOCUS Report and URL

This RESTful web service request can be used to retrieve the textual content within a WebFOCUS report or URL link.

**HTTP Method:** GET

**REST URL Format:**

http://host[:port]/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ContentName?
IBIRS_action=getContent

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port (optional)*

Is the port number used by WebFOCUS.

*FolderName*

Is the name of the folder where the content exists. If the content exists in a subfolder, then the path to the subfolder name must be included in the REST URL. For example, ParentFolderName/FolderName.

*ContentName*

Is the name of the content, which must have a .fex extension for WebFOCUS reports and a .url extension for URL links.

**Example 1:**

In the following example, the content for the WebFOCUS report called Drilldown_Report.fex, from the Financial_Reports folder, is retrieved. The response Content-Type is text/plain.

**Request:**

Response:

TABLE FILE CAR
HEADING
"Sales by models for &CAR"
SUM SALES BY MODEL
WHERE CAR EQ '&CAR';
"Last updated: &TOD &DATE"
ON TABLE PCHOLD FORMAT HTML
ON TABLE SET PAGE-NUM OFF
ON TABLE SET SQUEEZE ON
ON TABLE SET STYLE *
GRID=OFF, $ 
TYPE=HEADING, STYLE=BOLD, SIZE=18, $ 
TYPE=FOOTING, STYLE=ITALIC, $ 
TYPE=TITLE, STYLE=BOLD, $ 
ENDSTYLE
END

Example 2:

In the following example, the content for a URL called Yahoo.url, from the Car_Reports folder, is retrieved. The response Content-Type is text/plain.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Yahoo.url?IBIRS_action=getContent

Response:

https://search.yahoo.com/search?p=Information+Builders

Retrieving Details of a Procedure

This RESTful web service request can be used to retrieve details of a procedure similar to what the Properties dialog shows.

HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?
IBIRS_path=path&IBIRS_action=getDetails&IBIRS_service=describe

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.
Example:

http://server:port/ibi_apps/rs?IBFS_path=/WFC/Repository/Tests/car_param_1.fex&IBFS_action=getDetails&IBFS_service=describe

Response:

<ibfsrpc _jt="IBFSResponseObject" language="en_US" name="getDetails" returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
  <ibfsparams size="2">
    <entry key="IBFS_args" value="__null"/>
    <entry key="IBFS_path" value="/WFC/Repository/Tests/car_param_1.fex"/>
  </ibfsparams>
  <rootObject _jt="WFFexDetails" ibfsPath="/WFC/Repository/Tests/car_param_1.fex" itemDescription="car param_1">
    <masterFiles _jt="ArrayList" size="1">
      <item _jt="WFFexMasterFileDetails" index="0" masterFileName="CAR"/>
    </masterFiles>
    <dataElements _jt="ArrayList" size="1">
      <item _jt="WFFexDataElementDetails" fieldName="CAR.BODY.SALES" format="" index="0"/>
    </dataElements>
    <sorts _jt="ArrayList" size="3">
      <item _jt="WFFexSortDetails" acrossField="false" byField="false" fieldName="CAR.ORIGIN.COUNTRY" index="0" sortOrder="LOWEST"/>
      <item _jt="WFFexSortDetails" acrossField="false" byField="false" fieldName="CAR.COMP.CAR" index="1" sortOrder="LOWEST"/>
      <item _jt="WFFexSortDetails" acrossField="false" byField="false" fieldName="CAR.CARREC.MODEL" index="2" sortOrder="LOWEST"/>
    </sorts>
    <conditions _jt="ArrayList" size="0"/>
    <expressions _jt="ArrayList" size="0"/>
    <outputFormats _jt="ArrayList" size="1">
      <item _jt="WFFexHoldFormatDetails" format="HTML" index="0"/>
    </outputFormats>
    <joins _jt="ArrayList" size="0"/>
  </rootObject>
</ibfsrpc>

Using describeAdHocFex

This RESTful web service request can be used to retrieve the details of executing a describe on an adhoc procedure.

HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?IBIRS_path=path&IBIRS_action=describeAdHocFex&IBIRS_fexContent=procedureCode&IBIRS_service=ibfs
where:

$host$

Is the name of the system where WebFOCUS is installed.

$port$

Is the port number used by WebFOCUS.

Example:

http://server:port/ibi_apps/rs?IBIRS_path=/WFC/Repository/Tests&IBIRS_action=describeAdHocFex&IBIRS_fexContent=TABLE+FILE+CAR%0D%0APRINT+CAR+BY+COUNTRY%0D%0AWHERE+COUNTRY+EQ+%27%26COUNTRY%27%0D%0AEND&IBIRS_service=ibfs

Response:

<ibfsrpc _jt="IBFSResponseObject" language="en_US" name="describeAdHocFex" returncode="10000" returndesc="SUCCESS" type="simple">
<ibfsparams size="3">
<entry key="IBIRS_path" value="/WFC/Repository/Tests/"/>
<entry key="IBIRS_fexContent" value="TABLE FILE CAR&NewLine;PRINT CAR BY COUNTRY&NewLine;WHERE COUNTRY EQ '&COUNTRY'&NewLine;END"/>
<entry key="IBIRS_args" value="__null"/>
</ibfsparams>
<rootObject class="com.ibi.wfrs.IBFSWFDescribe" formAction="/ibi_apps/rs" isSavedParam="false" nrOfDefaultVars="0" nrOfPromptVars="1">
<describeLevel class="com.ibi.wfrs.WFDescribeFlag" name="XMLRUN" />
</rootObject>
</ibfsrpc>
<entry>
<key _jt="string" value="FOCEXURL"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="/ibi_apps/rs?IBIF_webapp=/ibi_apps&IBIC_server=EDASERVE/retail_samples retail ibisamp tests baseapp ibimagn rest=retail_samples retail ibisamp tests baseapp ibimagn rest&"/>
</entry>
<entry>
<key _jt="string" value="XSL_NEWLINE_DELIM"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="0xD;0xA;"/>
</entry>
<entry>
<key _jt="string" value="IBIAPP_app"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="retail_samples retail ibisamp tests baseapp ibimagn rest"/>
</entry>
<entry>
<key _jt="string" value="IBI_PostMsgsToParent"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true"
value="ON"/>
</entry>
<entry>
<key _jt="string" value="IBI_Webapp_Context_Default"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="/ibi_apps"/>
</entry>
<entry>
<key _jt="string" value="IBIRS_service"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true"
value="ibfs"/>
</entry>
<entry>
<key _jt="string" value="IBIRS_random"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true"
value="62998"/>
</entry>
<entry>
<key _jt="string" value="FOCHTMLURL"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="/ibi_apps/ibi_html/S12613_15368909291F"/>
</entry>
<entry>
<key _jt="string" value="SUBSYSTEM"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="Self Service"/>
</entry>
<entry>
<key _jt="string" value="IBI_CSRF_Token_Name"/>
/value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false"
value="IBIWF_SES_AUTH_TOKEN"/>
</entry>
3. WebFOCUS Repository RESTful Web Service Requests

```xml
<entry>
  <key _jt="string" value="fromTool"/>
  <value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true" value="true"/>
</entry>
<entry>
  <key _jt="string" value="SCRIPT_NAME"/>
  <value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="false" value="/ibi_apps/rs"/>
</entry>
<entry>
  <key _jt="string" value="IBIRS_action"/>
  <value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true" value="describeAdHocFex"/>
</entry>
<entry>
  <key _jt="string" value="IBIRS_fexContent"/>
  <value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true" value="TABLE FILE CAR PRINT CAR BY COUNTRY WHERE COUNTRY EQ ' &COUNTRY' END"/>
</entry>
<entry>
  <key _jt="string" value="IBIRS_args"/>
  <value class="com.ibi.wfrs.IBFSWFDescribe$BindingVar" isReqParm="true" value="__null"/>
</entry>
</bindingInfo>
<amperMap accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="24">
  <entry>
    <key _jt="string" value="FOCFOCEXEC"/>
    <value amperIdx="0" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe$AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="FOCFOCEXEC" noSelection="false" parent="" sortOrder="" validate="">
      <type class="com.ibi.wfrs.IBFSAmperVarType" name="system"/>
      <defValues _jt="array" itemsClass="string" size="0"/>
      <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
      <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
      <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
    </value>
  </entry>
  <entry>
    <key _jt="string" value="_PERSISTENT_APPLOCK"/>
    <value amperIdx="1" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe$AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="_PERSISTENT_APPLOCK" noSelection="false" parent="" sortOrder="" validate="">
      <type class="com.ibi.wfrs.IBFSAmperVarType" name="global"/>
      <defValues _jt="array" itemsClass="string" size="0"/>
      <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
      <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
      <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
    </value>
  </entry>
</amperMap>
```
3. WebFOCUS Repository RESTful Web Service Requests

```xml
<entry>
  <key _jt="string" value="_PERSISTENT_GEO_UNIFIED_ROLE"/>
  <value amperIdx="6" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe $AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="_PERSISTENT_GEO_UNIFIED_ROLE" noSelection="false" parent="" sortOrder="" validate="">
    <type class="com.ibi.wfrs.IBFSAmperVarType" name="global"/>
    <defValues _jt="array" itemsClass="string" size="0"/>
    <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
    <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
    <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
  </value>
</entry>

<entry>
  <key _jt="string" value="_PERSISTENT_IBI_HOLDMAG_TARGET"/>
  <value amperIdx="7" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe $AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="_PERSISTENT_IBI_HOLDMAG_TARGET" noSelection="false" parent="" sortOrder="" validate="">
    <type class="com.ibi.wfrs.IBFSAmperVarType" name="global"/>
    <defValues _jt="array" itemsClass="string" size="0"/>
    <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
    <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
    <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
  </value>
</entry>

<entry>
  <key _jt="string" value="_PERSISTENT_OSTYPE"/>
  <value amperIdx="8" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe $AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="_PERSISTENT_OSTYPE" noSelection="false" parent="" sortOrder="" validate="">
    <type class="com.ibi.wfrs.IBFSAmperVarType" name="global"/>
    <defValues _jt="array" itemsClass="string" size="0"/>
    <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
    <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
    <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
  </value>
</entry>

<entry>
  <key _jt="string" value="_PERSISTENT_SRVTYPE"/>
  <value amperIdx="9" chainIdx="-1" class="com.ibi.wfrs.IBFSWFDescribe $AmperVar" format="" idxInChain="-1" inForm="false" isDefault="false" max="0.0" min="0.0" name="_PERSISTENT_SRVTYPE" noSelection="false" parent="" sortOrder="" validate="">
    <type class="com.ibi.wfrs.IBFSAmperVarType" name="global"/>
    <defValues _jt="array" itemsClass="string" size="0"/>
    <displayType class="com.ibi.wfrs.IBFSAmperDisplayType" name="prompt"/>
    <values accessOrder="false" class="java.util.LinkedHashMap" loadFactor="0.75" threshold="0"/>
    <parameters _jt="HashMap" loadFactor="0.75" threshold="0"/>
  </value>
</entry>
```
Using getContent

This RESTful web service request can be used to retrieve the content of an item.

**HTTP Method:** GET
REST URL Format:

http://host[:port]/ibi_apps/rs?
IBIRS_path=path&IBIRS_action=getContent&IBIRS_service=ibfs

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

http://server:port/ibi_apps/rs ?IBIRS_path=/WFC/Repository/Tests/Car_Required_Parameter_2.fex&IBIRS_action=getContent&IBIRS_service=ibfs
Response:

ENGINE INT CACHE SET ON
SET PAGE-NUM=NOLEAD
SET SQUEEZE=ON
-DEFAULTH &WF_HTMLENCODE=ON;
SET HTMLENCODE=&WF_HTMLENCODE

SET HTMLCSS=ON
-DEFAULTH &WF_EMPTYREPORT=ON;
SET EMPTYREPORT=&WF_EMPTYREPORT

-DEFAULTH &WF_SUMMARY='Summary';
-DEFAULTH &WF_TITLE='WebFOCUS Report';
TABLE FILE ibisamp/car
SUM CAR.SPECS.LENGTH
CAR.SPECS.WIDTH
CAR.SPECS.HEIGHT
CAR.SPECS.WEIGHT
BY CAR.ORIGIN.COUNTRY
BY BY.CAR.COMP.CAR
BY CAR.CARREC.MODEL
WHERE CAR.ORIGIN.COUNTRY EQ &COUNTRY.(OR(FIND CAR.ORIGIN.COUNTRY IN ibisamp/ 
CAR |FORMAT=A10,SORT=ASCENDING)).COUNTRY;;
ON TABLE PCHOLD FORMAT HTML
ON TABLE NOTOTAL
ON TABLE SET CACHELINES 100
ON TABLE SET GRWIDTH 1
ON TABLE SET STYLE *
INCLUDE=IBFS:/FILE/IBI_HTML_DIR/javaassist/intl/EN/combine_templates/
ENWarm.sty,$
TYPE=REPORT, TITLETEXT=&WF_TITLE.QUOTEDSTRING,
SUMMARY=&WF_SUMMARY.QUOTEDSTRING, $
ENDSTYLE
END

-RUN

Using listUsersFromGroup

This RESTful web service request can be used to display and list all users from a specified 
group.

HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?IBIRS_path=/SSYS/GROUPS/
groupName&IBIRS_action=listUsersFromGroup&IBIRS_service=ibfs

where:

host

Is the name of the system where WebFOCUS is installed.
port

Is the port number used by WebFOCUS.

Example:

http://server:port/ibi_apps/rs ?IBIRS_path=/SSYS/GROUPS/Administrators&IBIRS_action=listUsersFromGroup&IBIRS_service=ibfs

Response:

<ibfsrpc _jt="IBFSResponseObject" language="en_US" name="listUsersFromGroup" returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
  <ibfsparams size="1">
    <entry key="IBIRS_path" value="/SSYS/GROUPS/Administrators"/>
  </ibfsparams>
  <rootObject _jt="IBFSObject" container="true" description="Administrators" dummy="false" fullPath="/IBFS:/SSYS/GROUPS/Administrators" length="0" name="Administrators" policy="/f+/f4f///9vo/+9///9/////////f8AAAA" rsPath="/ibi_apps/ibs/SSYS/GROUPS/Administrators" thumbPath="/ibi_apps/ibi_html/ibi_images/file_type/file.svg" type="IBFSFolder">
    <children _jt="ArrayList" size="6">
      <item _jt="IBFSUserObject" description="20156" dummy="false" email="" fullPath="/IBFS:/SSYS/USERS/20156" handle="66186240" index="0" lastSignin="1501528460312" length="0" name="20156" nameSpace="DB" parent="Administrators" policy="/f+/f4f///9vo/+9///9/////////f8AAAA" rsPath="/ibi_apps/ibs/SSYS/USERS/20156" thumbPath="/ibi_apps/ibi_html/ibi_images/file_type/file.svg" type="User" userStatusDisplay="AutoAdded">
        <properties size="4">
          <entry key="SeatDate" value="20170731"/>
          <entry key="AuthNType" value="PreAuthN"/>
          <entry key="SeatType" value="PU"/>
          <entry key="autoadd" value="yes"/>
        </properties>
        <status _jt="IBSSUserStatus" name="AUTOADD"/>
        <groups _jt="ArrayList" size="0"/>
        <pSetList _jt="ArrayList" size="0"/>
      </item>
      <item _jt="IBFSUserObject" description="Administrator" dummy="false" email="" fullPath="/IBFS:/SSYS/USERS/admin" handle="10001" index="1" lastSignin="1537208945749" length="0" name="admin" parent="Administrators" policy="/f+/f4f///9vo/+9///9/////////f8AAAA" rsPath="/ibi_apps/ibs/SSYS/USERS/admin" thumbPath="/ibi_apps/ibi_html/ibi_images/file_type/file.svg" type="User" userStatusDisplay="Active">
        <properties size="3">
          <entry key="SeatDate" value="20160204"/>
          <entry key="AuthNType" value="PreAuthN"/>
          <entry key="SeatType" value="PU"/>
        </properties>
        <status _jt="IBSSUserStatus" name="ACTIVE"/>
        <groups _jt="ArrayList" size="0"/>
        <pSetList _jt="ArrayList" size="0"/>
      </item>
    </children>
  </rootObject>
</ibfsrpc>
3. WebFOCUS Repository RESTful Web Service Requests

```xml
<item _jt="IBFSUserObject" description="br01532" dummy="false" email=""
fullPath="/IBFS:/SSYS/USERS/br01532" handle="1437955072" index="2"
lastSignin="1508444797540" length="0" name="br01532" nameSpace="DB"
parent="Administrators" policy="/f+f+f+f+/f+v+v+v+/f+////f//f8AAAA"
rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/br01532" thumbPath="/ibi_apps/ibi_html/
ibi_images/file_type/file.svg" type="User" userStatusDisplay="Active">
<properties size="3">
<entry key="SeatDate" value="20171019"/>
<entry key="AuthNType" value="IntAuthN"/>
<entry key="SeatType" value="PU"/>
</properties>
=status _jt="IBSSUserStatus" name="ACTIVE"/>
<groups _jt="ArrayList" size="0"/>
<pSetList _jt="ArrayList" size="0"/>
</item>

<item _jt="IBFSUserObject" description="ciprian" dummy="false" email=""
fullPath="/IBFS:/SSYS/USERS/ciprian" handle="507591666" index="3"
lastSignin="1525710234837" length="0" name="ciprian" nameSpace="DB"
parent="Administrators" policy="/f+f+f+f+/f+v+v+v+/f+////f//f8AAAA"
rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/ciprian" thumbPath="/ibi_apps/ibi_html/
ibi_images/file_type/file.svg" type="User" userStatusDisplay="Active">
<properties size="3">
<entry key="SeatDate" value="20180507"/>
<entry key="AuthNType" value="IntAuthN"/>
<entry key="SeatType" value="PU"/>
</properties>
=status _jt="IBSSUserStatus" name="ACTIVE"/>
<groups _jt="ArrayList" size="0"/>
<pSetList _jt="ArrayList" size="0"/>
</item>

<item _jt="IBFSUserObject" description="David" dummy="false" email=""
fullPath="/IBFS:/SSYS/USERS/david" handle="624072736" index="4"
lastSignin="1525713259277" length="0" name="david" nameSpace="DB"
parent="Administrators" policy="/f+f+f+f+/f+v+v+v+/f+////f//f8AAAA"
rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/david" thumbPath="/ibi_apps/ibi_html/
ibi_images/file_type/file.svg" type="User" userStatusDisplay="Active">
<properties size="3">
<entry key="SeatDate" value="20170522"/>
<entry key="AuthNType" value="IntAuthN"/>
<entry key="SeatType" value="PU"/>
</properties>
=status _jt="IBSSUserStatus" name="ACTIVE"/>
<groups _jt="ArrayList" size="0"/>
<pSetList _jt="ArrayList" size="0"/>
</item>

<item _jt="IBFSUserObject" description="REST user" dummy="false" email=""
fullPath="/IBFS:/SSYS/USERS/rest" handle="767690752" index="5"
lastSignin="1486500642372" length="0" name="rest" nameSpace="DB"
parent="Administrators" policy="/f+f+f+f+/f+v+v+v+/f+////f//f8AAAA"
rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/rest" thumbPath="/ibi_apps/ibi_html/
ibi_images/file_type/file.svg" type="User" userStatusDisplay="Active">
<properties size="3">
<entry key="SeatDate" value="20170202"/>
<entry key="AuthNType" value="PreAuthN"/>
<entry key="SeatType" value="PU"/>
</properties>
</item>
```
Using Properties

This RESTful web service request can be used to retrieve the properties of a specified item, including its extended properties.

HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?IBIRS_path=/WFC/Repository/path&IBIRS_action=properties&IBIRS_service=ibfs

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

http://server:port/ibi_apps/rs ?IBIRS_path=/WFC/Repository/Tests/Car_Required_Parameter_2.fex&IBIRS_action=properties&IBIRS_service=ibfs
Response:

```xml
<ibfsrspc _jt="IBFSResponseObject" language="en_US" name="properties"
returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
<ibfsparams size="2">
<entry key="IBIRS_path" value="/WFC/Repository/Tests/Car_Required_Parameter_2.fex"/>
<entry key="IBIRS_args" value="__null"/>
</ibfsparams>
<rootObject _jt="IBFSMRObject" binary="false" createdBy="admin"
createdOn="1537208115101" defaultLng="en_US" description="Car Required Parameter 2" dummy="false" effectiveAppName="retail_samples retail ibisamp tests baseapp ibimagn rest" effectiveRSName="EDASERVE" extension="fex"
fullPath="/WFC/Repository/Tests/Car_Required_Parameter_2.fex"
handle="b3cb30af_8add_4857_8f73_b29eaee43b1cc" lastModified="1537208172168"
lastaccessBy="admin" lastaccessOn="1537208172168" lastmodifyBy="admin"
length="843" name="Car_Required_Parameter_2.fex" ownerId="10001"
ownerName="admin" ownerPath="/SSYS/USERS/admin" ownerType="U"
policy="/+vf/4c/9vo/+9///9///9//+//////f8AAAA" returnedLng="en_US" rsPath="/ibi_apps/rs/ibfs/WFC/Repository/Tests/Car_Required_Parameter_2.fex"
signedOn="true" thumbPath="/ibi_apps/ibi_html/ibi_images/file_type/fex.svg"
type="FexFile" typeDescription="Report">
<properties size="2">
<entry key="OutputFormat" value="HTML"/>
<entry key="masters" value="ibisamp/car"/>
</properties>
<extendedProperties _jt="HashMap" loadFactor="0.75" threshold="12">
<entry key="__IA_Metadata" value="* Created By InfoAssist , ON: September 17, 2018, Version: HEAD,7CAE5 --Do not delete or modify the comments below -*-INTERNAL_COMMENT LINE#0$PD94bWwgdmVyc2lvbj0iMS4wIiBlbmNvZGluZz0iVVRGLTgiIHN0YW5kYWxvbmU9Im9IYWJsZUNoYXJ0XzEiPg0KICAgICAgICAgPC9PYmplY3Q"/>
</extendedProperties>
</rootObject>
</ibfsrspc>
```
Using runAdHocFex

This RESTful web service request can be used to run the adhoc fex that is entered as the argument.
HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?IBIRS_path=/WFC/Repository/path&IBIRS_action=runAdHocFex&IBIRS_fexContent=procedureCode&IBIRS_service=ibfs

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

http://server:port/ibi_apps/rs ?IBIRS_path=/WFC/Repository/Tests&IBIRS_action=runAdHocFex&IBIRS_fexContent=TABLE+FILE+CAR%0D%0APRINT+CAR+BY+COUNTRY%0D%0AEND&IBIRS_service=ibfs

Response:

The report output appears.

Using setLanguage

This RESTful web service request can be used to set the language for the WebFOCUS session.

HTTP Method: GET

REST URL Format:

http://host[:port]/ibi_apps/rs?IBIRS_action=setLanguage&IBIRS_language=localeValue&IBIRS_service=ibfs

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

Response:

```xml
<ibfsrpc _jt="IBFSResponseObject" language="en_US" name="setLanguage" returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
<ibfsparams size="1">
<entry key="IBIRS_language" value="en-US"/>
</ibfsparams>
</rootObject>
</ibfsrpc>
```

Using setManagePrivateMode

This RESTful web service request can be used to set Manager Mode for the session.

**HTTP Method:** POST

**REST URL Format:**

```
http://host[:port]/ibi_apps/rs
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

**Body Format:**

```
IBIRS_action=setManagePrivateMode&IBIRS_mode=true/false&IBIRS_service=ibfs
```
Example:

http://server:port/ibi_apps/rs

Body:

IBIRS_action=setManagePrivateMode&IBIRS_mode=true&IBIRS_service=ibfs

Response:

<ibfsrpc _jt="IBFSResponseObject" language="en_US" name="setManagePrivateMode" returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
<ibfsparams size="1">
<entry key="IBIRS_mode" value="true"/>
</ibfsparams>
<rootObject _jt="boolval" value="true"/>
</ibfsrpc>
This section describes the format and structure of WebFOCUS Reporting Server RESTful web service requests.

In this chapter:

- Listing WebFOCUS Reporting Server Nodes
- Creating an Application
- Listing Applications
- Listing Files Within an Application
- Listing the Parameters for a Report Within an Application
- Running a Report Within an Application
- Deleting an Application
- Change Management Export
- Change Management Import
- Deleting a Role
- Adding a Rule

Listing WebFOCUS Reporting Server Nodes

This RESTful web service request can be used to list the Reporting Server nodes that are available to WebFOCUS.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs?IBIRS_action=get

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.
Example:

In the following example, Reporting Server nodes are listed.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/EDA?IBIRS_action=get

Response:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
  returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSObject" container="true" description="EDA" dummy="false"
    fullPath="IBFS:/EDA" name="EDA" policy="///+f////////9/////////////+AAAAA"
    type="WebFOCUSComponent">
    <children _jt="ArrayList" size="1">
      <item _jt="IBFSE DANodeObject" container="true" defaultNode="true" description=""
        dummy="false"
        fullPath="IBFS:/EDA/EDASERVE" host="MyComputer" index="0" name="EDASERVE"
        nodeClass="CLIENT"
        parent="EDA" policy="///+f////////9/////////////+AAAAA" port="8120"
        type="EDANode"/>
    </children>
  </rootObject>
</ibfsrpc>
```

Each Reporting Server node definition is defined within the opening and closing `item` tag. The `name` attribute defines the name of the Reporting Server node. The `port` attribute defines the TCP/IP port used to communicate with the Reporting Server.

Creating an Application

This RESTful web service request can be used to create an application.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/EDA/NodeName/AppName

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.
NodeName

Is the name of the WebFOCUS Reporting Server node. For more information, see Listing WebFOCUS Reporting Server Nodes on page 107.

AppName

Is the name of the application to be created. If the application being created is a nested application of an existing application, then the existing application name is also included in the REST URL. This shows the path to the application being created (for example, ExistingApplication/ApplicationName).

Body Format:

IBIRS_action=put&IBIRS_object=Object

where:

Object

Is the XML object defining the attributes for the application using the following format:

<object _jt="IBFSFolder" container="true" type="IBFSFolder"></object>

Example:

In the following example, an application called Financial_Reports is created.

POST Request URL:

http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE/Financial_Reports

Body:

IBIRS_action=put&IBIRS_object=<object _jt="IBFSFolder" container="true" type="IBFSFolder"></object>
Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put" returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="5">
    <entry key="IBIRS_replace" value="true"/>
    <entry key="IBIRS_path" value="/EDA/EDASERVE/Financial_Reports"/>
    <entry key="IBIRS_private" value="__null"/>
    <entry key="IBIRS_object" value="****"/>
    <entry key="IBIRS_args" value="__null"/>
</ibfsparams>
<rootObject _jt="IBFSFolder" container="true" description="Financial_Reports"
dummy="false" fullPath="IBFS:/EDA/EDASERVE/Financial_Reports" name="Financial_Reports"
policy="////D////fx/////+//////////4AAAA" rsPath="/ibi_apps/rs/ibfs/EDA/EDASERVE/
Financial_Reports" type="IBFSFolder"/>
</ibfsrpc>

Listing Applications

This RESTful web service can be used to list the applications for a particular Reporting Server node.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/EDA/NodeName?IBIRS_action=get

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

nodeName

The name of the Reporting Server Node. For more information, see Listing WebFOCUS Reporting Server Nodes on page 107.

Example:

In the following example, the applications within the WebFOCUS Reporting Server called EDASERVE are listed.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE?IBIRS_action=get
Response:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSEDANodeObject" container="true" defaultNode="true" description="" dummy="false" fullPath="IBFS:/EDA/EDASERVE" host="REST-COMPUTER" name="EDASERVE" nodeClass="CLIENT" policy="///+f///////9/////////////+AAAAA" port="8120" type="EDANode">
<children _jt="ArrayList" size="14">
  <item _jt="IBFSFolder" container="true" description="foccache" dummy="false" fullPath="IBFS:/EDA/EDASERVE/foccache" index="0" lastModified="1345560136000" name="foccache" parent="EDASERVE" policy="///+f///////9/////////////+AAAAA" type="IBFSFolder"/>
  ...
  ...
  <item _jt="IBFSFolder" container="true" description="maintain" dummy="false" fullPath="IBFS:/EDA/EDASERVE/maintain" index="12" lastModified="1344546157000" name="maintain" parent="EDASERVE" policy="///+f///////9/////////////+AAAAA" type="IBFSFolder"/>
  <item _jt="IBFSFolder" container="true" description="session" dummy="false" fullPath="IBFS:/EDA/EDASERVE/session" index="13" lastModified="1344546157000" name="session" parent="EDASERVE" policy="///+f///////9/////////////+AAAAA" type="IBFSFolder"/>
</children>
</rootObject>
</ibfsrpc>
```

Each application definition is defined within the opening and closing `item` tag. The `name` attribute defines the name of the application.

**Listing Files Within an Application**

This RESTful web service can be used to list all files within a particular application.

**HTTP Method:** GET

**REST URL Format:**

```plaintext
http://host:port/ibi_apps/rs/ibfs/EDA/NodeName/AppName?IBIRS_action=get
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.
**NodeName**

Is the name of the Reporting Server Node. For more information, see [Listing WebFOCUS Reporting Server Nodes](#) on page 107.

**AppName**

Is the name of the application containing the files to be listed. For more information, see [Listing Applications](#) on page 110.

**Example:**

In the following example, all files within the *ibisamp* application are listed.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE/ibisamp?IBIRS_action=get

**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
   returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSFolder" container="true" description="ibisamp" dummy="false"
   fullPath="IBFS:/EDA/EDASERVE/ibisamp" lastModified="1345554266" name="ibisamp"
   policy="///+f////////////+AAAAA" type="IBFSFolder">
<children _jt="ArrayList" size="182">
  <item _jt="IBFSFile" description="cargraph.fex" dummy="false"
    fullPath="IBFS:/EDA/EDASERVE/ibisamp/cargraph.fex" index="0"
    lastModified="1328583952000" length="1471" name="cargraph.fex" parent="ibisamp"
    policy="///+f/////////9/////////////+AAAAA" type="IBFSFile"/>
  <item _jt="IBFSFile" description="carinst.fex" dummy="false"
    fullPath="IBFS:/EDA/EDASERVE/ibisamp/carinst.fex" index="1"
    lastModified="1328583952000" length="2624" name="carinst.fex" parent="ibisamp"
    policy="///+f/////////9/////////////+AAAAA" type="IBFSFile"/>
  ...
  ...
  <item _jt="IBFSFile" description="wfmstart.html" dummy="false"
    fullPath="IBFS:/EDA/EDASERVE/ibisamp/wfmstart.html" index="181"
    lastModified="1328619018000" length="6364" name="wfmstart.html" parent="ibisamp"
    policy="///+f/////////9/////////////+AAAAA" type="IBFSFile"/>
</children>
</rootObject>
</ibfsrpc>
```
Each file definition is defined within the opening and closing item tag. The name attribute defines the name of the file.

The following list shows the WebFOCUS-specific file name extensions:

- fex. WebFOCUS report.
- mas. Master File Description.
- foc. FOCUS database.
- etg. Data Migrator flow.
- mnt. Maintain procedure.
- wfm. Maintain forms.
- fcm. Maintain compiled.
- ftm. Flat file usually used as a temporary file.

The description attribute defines the description that was used as input for the file.

### Listing the Parameters for a Report Within an Application

This RESTful web service can be used to retrieve the current parameters for a WebFOCUS report stored within an application.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/EDA/NodeName/Appname/FexName?
IBIRS_action=describeFex
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **nodeName**
  
  Is the name of the Reporting Server Node. For more information, see *Listing WebFOCUS Reporting Server Nodes* on page 107.
**Appname**

Is the name of the application containing the files to be listed. For more information, see *Listing Applications* on page 110.

**FexName**

Is the name of the WebFOCUS report as defined in the *name* attribute when listing files within an application. For more information, see *Listing Files Within an Application* on page 111.

**Example:**

In this example, the current parameters for the carinst.fex report, which exists in the *ibisamp* application, are retrieved. The carinst.fex report is defined in the *name* attribute when listing the files within an application. For more information, see *Listing Files Within an Application* on page 111.

**Request:**

```
http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE/ibisamp/carinst.fex?
IBIRS_action=describeFex
```
4. WebFOCUS Reporting Server RESTful Web Service Requests

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfparams size="0"/>
<rootObject isSavedParam="false">
<bindingInfo _jt="HashMap" loadFactor="0.75" threshold="24">
<entry>
  <key _jt="string" value="SUBSYSTEM"/>
  <value isReqParm="false" value="Self Service"/>
</entry>
<entry>
  <key _jt="string" value="IBI_WF_charset"/>
  <value isReqParm="false" value="windows-1252"/>
</entry>
<entry>
  <key _jt="string" value="WF_TITLE"/>
  <value format="" max="0.0" min="0.0" name="WF_TITLE" strDef="">
    <type name="set"/>
    <displayType name="prompt"/>
    <values accessOrder="false" loadFactor="0.75" threshold="12"/>
  </value>
</entry>
<entry>
  <key _jt="string" value="FOCREL"/>
  <value format="" max="0.0" min="0.0" name="FOCREL" strDef="">
    <type name="system"/>
    <displayType name="prompt"/>
</value>
</entry>
</bindingInfo>
</rootObject>
</ibfsrpc>
Each parameter definition is defined within the opening and closing entry tag.

The XML returned includes many system parameters along with the parameters defined in the WebFOCUS report. Entries that have a name attribute for the type element of either unresolved or defaultType are the WebFOCUS report parameters.

The name attribute within the value element defines the parameter that is being used in the selection.

If a parameter definition within a WebFOCUS report has a default value, the strDef attribute within the value element will contain that value.

If a parameter definition within a WebFOCUS report has a Prompt title, the description attribute within the value element will contain the title.

If a parameter definition within a WebFOCUS report has a list of valid values for the selection, additional entry elements will exist in the XML within the parameter definition. The value attribute within the key element would contain each valid value.

Running a Report Within an Application

This RESTful web service can be used to run a report stored in an application.
HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/EDA/NodeName/Appname/FexName

where:

host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

NodeName
Is the name of the Reporting Server Node. For more information, see Listing WebFOCUS Reporting Server Nodes on page 107.

Appname
Is the name of the application containing the files to be listed. For more information, see Listing Applications on page 110.

FexName
Is the name of the WebFOCUS report as defined in the name attribute when listing files within an application. For more information, see Listing Files Within an Application on page 111.

Body Format:

IBIRS_action=run&IBIRS_proxyURL=clientPath&IBIRS_userName=UserId&IBIRS_password=Password&parmNameN=parmValueN&IBIRS_args=Object

where:

clientPath
Is the path to the client application making the RESTful web service calls to WebFOCUS. For example:


The parameter is used when the initial WebFOCUS report contains drill-down links, links to images, On-Demand Paging reports, or Active Cache reports.
When you click on a drill-down link or pages in an On-Demand Paging report, the request will be routed to the client application, as defined by the `clientPath` value, instead of WebFOCUS. All of the parameter names and values are sent with the request. The client application will then have to redirect the request to the following URL, which is the WebFOCUS environment:

http://host:port/ibi_apps/rs/ibfs

**UserId**

Is the Reporting Server user ID. If the Reporting Server is running with Security Off or the Reporting Server sign-in credentials are configured in the WebFOCUS Reporting Server Client settings, then this parameter does not have to be sent in the REST request.

**Password**

Is the Reporting Server password. If the Reporting Server is running with Security Off or the Reporting Server sign-in credentials are configured in the WebFOCUS Reporting Server Client settings, then this parameter does not have to be sent in the REST request.

**parmNameN**

Is the name of the defined parameter that will be passed to the Reporting Server.

**Note:** The number of defined parameters can vary and depend on the number of parameters within the WebFOCUS report. For example, a WebFOCUS report that requires two parameters will also require these parameters and corresponding values to be set in the body of this RESTful web service (`&parmName1=parmValue1&parmName2=parmValue2`). In a different WebFOCUS report, there could be as many parameters as required (three, four, five, and so on).

**parmValueN**

Is the value of the defined parameter that will be passed to the Reporting Server.

**Object (Optional)**

Is the XML object that is used to turn off redirection when retrieving report output for MIME types like EXCEL and PDF using the following format:

```xml
<rootObject _jt="HashMap">
  <entry>
    <key _jt="string" value="IBFS_contextVars"/>
    <value _jt="HashMap">
      <entry>
        <key _jt="string" value="IBIWF_redirect"/>
        <value _jt="string" value="NEVER"/>
      </entry>
    </value>
  </entry>
</rootObject>
```
Example:
In the following example, the Sales_for_a_Specific_Country report is being executed only for Japan.

Request:
http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE/ibisamp/carinst.fex

Body:
IBIRS_action=run&COUNTRY=JAPAN

Response:
The response is a report in either HTML, Excel, PDF, active report, or a graph.

Deleting an Application
This RESTful web service request can be used to delete an application.

HTTP Method: DELETE

REST URL Format:
http://host:port/ibi_apps/rs/ibfs/EDA/NodeName/Appname?IBIRS_action=delete

where:
host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

NodeName
Is the name of the Reporting Server Node. For more information, see Listing WebFOCUS Reporting Server Nodes on page 107.

AppName
Is the name of the application containing the files to be listed. For more information, see Listing Applications on page 110.

Example:
In the following example, the wfretail application is deleted.

Request:
http://localhost:8080/ibi_apps/rs/ibfs/EDA/EDASERVE/wfretail?IBIRS_action=delete
Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
   returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="0"/>
<rootObject _jt="IBFSFolder" container="true" description="wfretail" dummy="false"
   fullPath="IBFS:/EDA/EDASERVE/wfretail" name="wfretail" type="IBFSFolder"/>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the application was deleted successfully.

Change Management Export

This RESTful web service request can be used to export directories, files, and groups that were created using Change Management Import.

For more information, see Change Management Export on page 66.

Note: This RESTful web service is common to functionality in the WebFOCUS Repository and the Reporting Server.

Change Management Import

This RESTful web service request can be used to import directories, files, and groups that were created using Change Management Export.

For more information, see Change Management Import on page 67.

Note: This RESTful web service is common to functionality in the WebFOCUS Repository and the Reporting Server.

Deleting a Role

This RESTful web service request can be used to delete a role.

HTTP Method: DELETE

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/SSYS/ROLES/Role?IBIRS_action=delete

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.
Role

Is the name of the role to be deleted.

Example:

In the following example, a role called LibraryCustom is deleted.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/ROLES/LibraryCustom?IBIRS_action=delete

Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="delete"
 returncode="10000" returndesc="SUCCESS" subreturncode="0"
 subsystem="SSYS" type="simple">
  <ibfsparams size="2">
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_" value="/SSYS/ROLES/LibraryCustom"/>
  </ibfsparams>
  <rootObject _jt="IBFSPermissionSetObject" description="Library Privilege - Custom" dummy="false"
   fullPath="IBFS:/SSYS/ROLES/LibraryCustom" handle="381089792"
   name="LibraryCustom"
   policy="////D///9+f/////f/////////8AAAA="
   rsPath="/ibi_apps/rs/ibfs/SSYS/ROLES/LibraryCustom"
   showPermissions="false" subsysNameList="WFC"
   type="PermissionSet">
    <pSet _jt="IBFSPermissionSet" compLvl="100" description="Library Privilege - Custom" id="381089792"
      name="LibraryCustom" shipped="false">
      <policy _jt="IBSSPolicy" derivedDate="1349173489158">
        <policy _jt="EnumMap" _keyJT="IBSSOperation" size="3">
          <entry>
            <key _jt="IBSSOperation" name="opLibrary"/>
          </entry>
        </policy>
      </policy>
    </pSet>
  </rootObject>
</ibfsrpc>
If the value for the returncode attribute in the XML response is 10000, then the role was successfully deleted.

Adding a Rule

This RESTful web service request can be used to apply a rule against a specific item.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/ItemToBeRestricted

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*ItemToBeRestricted*

Is the path to the item that is being restricted. For example:

/WFC/Repository/ParentFolder/FolderName

**Body Format:**

IBIRS_action=addRule&IBIRS_path=ItemToBeRestricted&IBIRS_subjectPath=GroupUser &IBIRS_verb=RestrictType&IBIRS_role=Role&IBIRS_applyTo=FolderChildren
where:

**ItemToBeRestricted**
Is the path to the item that is being restricted. For example:
/WFC/Repository/ParentFolder/FolderName

**GroupUser**
Are the paths to groups or user IDs to which a specific role will be applied. For example:
/SSYS/GROUPS/group1;/SSYS/GROUPS/group2

**RestrictType**
Is one of the following types of restrictions that can be applied to a specific role:
- NOT_SET
- PERMIT
- DENY
- UNPERMIT
- UNDENY
- OVERPERMIT
- CLEARINHERITANCE

**Role**
Is the specific role that is applied to GroupUser. For example, List, Run, and ListAndRun.

**FolderChildren**
Determines whether the rule will be applied to only ItemToBeRestricted, ItemToBeRestricted and its children, or just the children. Valid values include:
- FOLDER_AND_CHILDREN
- FOLDER_ONLY
- CHILDREN_ONLY

For example, FOLDER_AND_CHILDREN could be used to apply a rule for a specific folder and its subfolders.

**Example:**
In the following example, a rule is added to permit the user ID (restid) to list and run items from the Quarterly folder within Financial_Reports, including its subfolders.

**POST Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports/Quarterly

**Body:**

IBIRS_action=addRule&IBIRS_path=/WFC/Repository/Financial_Reports/Quarterly&IBIRS_subjectPath=/SSYS/USERS/restid&IBIRS_verb=PERMIT&IBIRS_role=ListAndRun&IBIRS_applyTo=FOLDER_AND_CHILDREN

**Response:**

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="addRule" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="5">
<entry key="IBIRS_verb" value="PERMIT"/>
<entry key="IBIRS_role" value="ListAndRun"/>
<entry key="IBIRS_applyTo" value="FOLDER_AND_CHILDREN"/>
<entry key="IBIRS_subjectPath" value="/SSYS/USERS/restid"/>
<entry key="IBIRS_" value="/WFC/Repository/Financial_Reports/Quarterly"/>
</ibfsparams>
<rootObject _jt="IBFSPermissionSetObject" description="List and run content" dummy="false" fullPath="IBFS:/SSYS/ROLES/ListAndRun" handle="10330"

name="ListAndRun" policy="////D///9+f/////f/////////8AAAA=" rsPath="/ibi_apps/rs/ibfs/SSYS/ROLES/ListAndRun" showPermissions="false"

subsysNameList="WFC" type="PermissionSet">
<pSet _jt="IBSSPermissionSet" compLvl="0" description="List and run content" id="10330" name="ListAndRun" shipped="true">
<policy _jt="IBSSPolicy" derivedDate="1348174711335">
<entry>
<key _jt="IBSSOperation" name="opList"/>
</entry>
</policy>
</pSet>
</rootObject>
</ibfsrpc>
If the value for the *returncode* attribute in the XML response is 10000, then the rule was successfully created.
This section describes the format and structure of WebFOCUS security administration web service requests.

In this chapter:

- Listing Users
- Listing Groups
- Listing Privileges
- Listing Roles
- Listing Users Within a Group
- Adding and Updating a User
- Deleting a User
- Adding and Updating a Group
- Deleting a Group
- Adding a User to a Group
- Removing a User From a Group
- Adding a Role
- Deleting a Role
- Adding a Rule
- Deleting a Rule
- Listing Rules for a Subject
- Listing Rules for a Resource
- Listing Rules for a Role
- Expanding a Policy String
- Creating a Policy String
- Running a Resource Template
- Changing a Password for a User

### Listing Users

This RESTful web service request can be used to retrieve a list of existing WebFOCUS users.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/SSYS/USERS?IBIRS_action=get

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

**Example:**
In the following example, a list of WebFOCUS users is retrieved.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/USERS?IBIRS_action=get

**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
  returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSObject" container="true" description="USERS" dummy="false"
    fullPath="IBFS:/SSYS/USERS" name="USERS" policy="///+f///////9/////////////+AAAAA"
    type="WebFOCUSComponent">
    <children _jt="ArrayList" size="7">
      <item _jt="IBFSUserObject" description="Administrator" dummy="false"
        email="restadmin@informationbuilders.com"
        fullPath="IBFS:/SSYS/USERS/admin" handle="10001" index="0" name="admin"
        parent="USERS"
        password="$faa2f1da92f72a7d$0901495f1d42962aa242af8aad5c7958a9f86013a1904"
        password="$94b192f81526ff9d3e71362964a5c2ef8e7814824dc247c8ee012ea118c1f60402e2467f8bae5b0c508c3a89d973ecc0a8738d7445e25dcb9a96411c6c7af6e6a5fe1051cbb669a"
        policy="///+f/////////9/++++++++++++//AAAAA" type="User">
        <status _jt="IBSSUserStatus" name="ACTIVE"/>
      </item>
    </children>
  </rootObject>
</ibfsrpc>
```
<item _jt="IBFSUserObject" description="MR admin 1" dummy="false" email=""
  fullPath="IBFS:/SSYS/USERS/mradmin1" handle="10004" index="2" name="mradmin1"
  parent="USERS"
  password="$ed23192360fccc75$6a8e50345185367b57f98b663e55b7e44fc94d10d3a1b
  0b6796774b694321bb57d6af841a304b7f698c1e353db3cefe332e504bc854fe878d12
  f664cc6cde" policy="///+f///////////+AAAAA" type="User">
  <status _jt="IBSSUserStatus" name="ACTIVE"/>
  <groups _jt="ArrayList" size="0"/>
  <pSetList _jt="ArrayList" size="0"/>
</item>

<Item _jt="IBFSUserObject" description="MR developer 1" dummy="false" email=""
82974970e81ee0259ba82c63856501c6f29a14aabad602143b5e79b3f18a4244b9018d911
5892d363f4" policy="///+f///////////+AAAAA" type="User">
  <status _jt="IBSSUserStatus" name="ACTIVE"/>
  <groups _jt="ArrayList" size="0"/>
  <pSetList _jt="ArrayList" size="0"/>
</Item>

<Item _jt="IBFSUserObject" description="Basic user" dummy="false" email=""
fullPath="/SSYS/USERS/auser" handle="10002" index="1" name="auser"
parent="USERS"
  fullPath="/SSYS/USERS/mrdev1" handle="10005" index="3" name="mrdev1"
  parent="USERS"
  password="$01265dd1edf5431e$229e70a1c6068b977b241a63d0357b8ac790448cb466
d9c8e113380c298495a803025da4869d777b92026a4d2239c123f458bf718a5aee
732c30a6e" policy="///+f///////////+AAAAA" type="User">
  <status _jt="IBSSUserStatus" name="ACTIVE"/>
  <groups _jt="ArrayList" size="0"/>
  <pSetList _jt="ArrayList" size="0"/>
</Item>

<Item _jt="IBFSUserObject" description="WebFOCUS Public User" dummy="false" email=""
fullPath="/SSYS/USERS/public" handle="10007" index="4" name="public"
parent="USERS"
  password="$4a4d50e70fc99c0752306ff856bf98e3a01bf3742f29e77a48078fb7447e1e9
812a940e85b1ccc0132eb752de82af70ee45531934da6b0f2d1c81bd108af56d12a10
6c0ff8492f" policy="///+f///////////+AAAAA" type="User">
  <status _jt="IBSSUserStatus" name="ACTIVE"/>
  <groups _jt="ArrayList" size="0"/>
  <pSetList _jt="ArrayList" size="0"/>
  <item _jt="string" index="0" value="WF_Role_Public"/>
</pSetList>
</Item>
Each user definition is defined within the opening and closing item tag. The name attribute defines the name of the user ID. The description attribute defines the title for the user. The email attribute defines the email address for the user. The name attribute within the status element defines whether the user ID is active. For example:

<status name="ACTIVE" _jt="IBSSUserStatus"/>

Note: The password attribute is not a value.

Listing Groups

This RESTful web service request can be used to retrieve a list of existing WebFOCUS groups.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/SSYS/GROUPS?IBIRS_action=get

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.
Example:
In the following example, a list of WebFOCUS groups is retrieved.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/GROUPS?IBIRS_action=get

Response:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrsrc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
  returncode="10000" returndesc="SUCCESS" subreturncode="0"
  subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSObject" container="true" description="GROUPS"
    dummy="false" fullPath="IBFS:/SSYS/GROUPS" name="GROUPS"
    policy="///+f//9//9///4f+//P///+AAAAA" type="WebFOCUSComponent">
    <children _jt="ArrayList" size="6">
      <item _jt="IBFSGroupObject" container="true" description="All
        defined users" dummy="false"
        fullPath="IBFS:/SSYS/GROUPS/EVERYONE" handle="10100" index="0"
        name="EVERYONE" parent="GROUPS"
        policy="///+f//9//9///4f+//P///+AAAAA" type="Group">
        <users _jt="ArrayList" size="0"/>
      </item>
      <item _jt="IBFSGroupObject" container="true" description="Administrators"
        dummy="false"
        fullPath="IBFS:/SSYS/GROUPS/Administrators" handle="10101"
        index="1" name="Administrators" parent="GROUPS"
        policy="///+f//9//9///4f+//P///+AAAAA" type="Group">
        <users _jt="ArrayList" size="0"/>
      </item>
      <item _jt="IBFSGroupObject" container="true" description="Anonymous Users"
        dummy="false"
        fullPath="IBFS:/SSYS/GROUPS/Anonymous" handle="10104"
        index="2" name="Anonymous" parent="GROUPS"
        policy="///+f//9//9///4f+//P///+AAAAA" type="Group">
        <users _jt="ArrayList" size="0"/>
      </item>
    </children>
  </rootObject>
</ibfsrsrc>
```
Each group definition is defined within the opening and closing item tag. The name attribute defines the name of the group. The description attribute defines the title for the group.

### Listing Privileges

This RESTful web service request can be used to retrieve a list of valid WebFOCUS privileges.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs?IBIRS_action=privileges

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

**Response:**

A list of privileges is returned in an XML response document. Each privilege is defined within an <item> element tag:
where:

PrivilegeName

Is the name of the privilege.

PrivilegeDesc

Is the description of the privilege.

Subsystem

Is the subsystem that the privilege pertains to.

Example:

In the following example, a list of WebFOCUS privileges is retrieved.

Request:

http://localhost:8080/ibi_apps/rs/ibfs?IBIRS_action=privileges

Response:

In this sample response document, the name of the privilege is `opInfoAssistPersonal` and has a description of `InfoAssist Personal`. This privilege applies to the `Session` subsystem.

Listing Roles

This RESTful web service request can be used to retrieve a list of valid WebFOCUS roles.

HTTP Method: GET

REST URL Format:
http://host:port/ibi_apps/rs/ibfs/SSYS/ROLES?IBIRS_action=get

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

In the following example, a list of WebFOCUS roles is retrieved.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/ROLES?IBIRS_action=get

Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="get"
returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
 <ibfparams size="2">
  <entry key="IBIRS_args" value="__null"/>
  <entry key="IBIRS_" value="/SSYS/ROLES"/>
 </ibfparams>
 <rootObject _jt="IBFSObject" container="true" description="ROLES"
dummy="false" fullPath="/IBFS:/SSYS/ROLES" name="ROLES"
policy="///D///9+f/////f/////7/+/8AAAA=" rsPath="/ibi_apps/rs/ibfs/SSYS/ROLES" type="WebFOCUSComponent">
 <children _jt="ArrayList" size="76">
  <item _jt="IBFSPermissionSetObject" description="Full control or
all privileges" dummy="false"
 fullPath="/IBFS:/SSYS/ROLES/SystemFullControl" handle="10301"
 index="0" name="SystemFullControl" parent="ROLES"
policy="///D///9+f/////f/////7/+/8AAAA=" rsPath="/ibi_apps/rs/ibfs/SSYS/ROLES/SystemFullControl" showPermissions="false"
 subsysNameList="*" type="PermissionSet">

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Listing Users Within a Group

This RESTful web service request can be used to retrieve a list of existing WebFOCUS users within a particular group.

**HTTP Method:** GET

**REST URL Format:** 

```xml
<pSet _jt="IBSSPermissionSet" compLvl="1" description="Full control or all privileges" id="10301" name="SystemFullControl" shipped="true">
<policy _jt="IBSSPolicy" derivedDate="1349171464497">
<policy _jt="EnumMap" _keyJT="IBSSOperation" size="152">
<entry>
<key _jt="IBSSOperation" name="opViewPortal"/>
<value _jt="IBSSVerb" name="OVERPERMIT"/>
</entry>
<entry>
<key _jt="IBSSOperation" name="opList"/>
<value _jt="IBSSVerb" name="OVERPERMIT"/>
</entry>
<entry>
<key _jt="IBSSOperation" name="opViewProps"/>
<value _jt="IBSSVerb" name="OVERPERMIT"/>
</entry>
<entry>
<key _jt="IBSSOperation" name="opDisplayVersionInfo"/>
<value _jt="IBSSVerb" name="OVERPERMIT"/>
</entry>

<entry>
<key _jt="IBSSOperation" name="opInfoAssistPersonal"/>
<value _jt="IBSSVerb" name="OVERPERMIT"/>
</entry>
</policy>
</policy>
<subsysList _jt="ArrayList" size="3">
<item _jt="IBFSSubsystem" index="0" name="ROOT"/>
<item _jt="IBFSSubsystem" index="1" name="WFC"/>
<item _jt="IBFSSubsystem" index="2" name="BIP"/>
</subsysList>
</pSet>
</children>
</rootObject>
</ibfsrpc>

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http://host:port/ibi_apps/rs/ibfs/SSYS/GROUPS/Group?IBIRS_action=get&IBIRS_args=
<object _jt="HashMap">
  <entry>
    <key _jt="string" value="TYPE"/>
    <value _jt="string" value="USERS"/>
  </entry>
</object>

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Group

Is the name of the group.

Example:

In the following example, a list of WebFOCUS users within the Administrators group is retrieved.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/GROUPS/Administrators?
IBIRS_action=get&IBIRS_args=
<object _jt="HashMap">
  <entry>
    <key _jt="string" value="TYPE"/>
    <value _jt="string" value="USERS"/>
  </entry>
</object>

Response:
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="get" returncode="10000"
  returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
  type="simple">
  <ibfsparams size="2">
    <entry key="IBIRS_args" value="&lt;object
    _jt="HashMap"&gt;&lt;entry&gt;&lt;key _jt="string"
    value="TYPE"/&gt;&lt;/key&gt;&lt;/entry&gt;&lt;/object&gt;"/>
    <entry key="IBIRS_" value="/SSYS/GROUPS/Administrators"/>
  </ibfsparams>
  <rootObject _jt="IBFSGroupObject" container="true" description="Administrators"
    dummy="false"
    fullPath="/SSYS/GROUPS/Administrators" name="Administrators"
    policy="/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\n"/>
Each user is defined within the opening and closing item tag. The name attribute defines the name of the user. The description attribute defines the title for the user.

Adding and Updating a User

This RESTful web service request can be used to add or update a user to WebFOCUS.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/SSYS/USERS/UserId

where:

host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

UserId
Is the name of the user ID to be added.

Body Format:

IBIRS_action=put&IBIRS_object=Object&IBIRS_replace=ReplaceUserIdProperties

where:

Object
Is the XML object defining the attributes for the user, using the following format:

<object _jt="IBFSUserObject" description="UserIdTitle"
    email="EmailAddress"
    password="Password" type="User" primaryGroupPath="IBFS:/SSYS/GROUPS/
groupName"><status _jt="IBSSUserStatus" name="Status"/></object>

where:

UserIdTitle
Is the title for the user. If the title contains an ampersand character (&), this character should be encoded as &amp;.

EmailAddress
Is the email address for the user.
Password

Is the password assigned to the user ID.

groupName

Is the primary group to which this user belongs.

Status

Is the status as to whether the user ID is to be added as an active or inactive user. The user ID can also be added or updated so that the password must be changed when signing on. Once the user signs on, the status is changed to Active. Choose from one of the following valid values:

- ACTIVE
- INACTIVE
- MUSTCHANGE

ReplaceUserIdProperties

Is an optional property that allows you to decide whether or not the properties for user ID can be updated. The following are examples of properties:

- Email Address
- Password
- User ID Title

You can choose true (default) or false.

Example:

In the following example, a user ID called restid is added. The title for the user is Rest Userid. The email address for the user is restid@informationbuilders.com. The password for the user is rest. The status for the user is ACTIVE.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/USERS/restid

Body:

IBIRS_action=put&IBIRS_object=<object _jt="IBFSUserObject"
description="Rest Userid" email="restid@informationbuilders.com"
password="rest" type="User"><status _jt="IBSSUserStatus" name="ACTIVE"/></object>

Response:
If the value for the `returncode` attribute in the XML response is 10000, then the user was added successfully.

**Deleting a User**

This RESTful web service request can be used to delete a user ID.

**HTTP Method:** DELETE

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/SSYS/USERS/Userid?IBIRS_action=delete

where:

`host`

Is the name of the system where WebFOCUS is installed.

`port`

Is the port number used by WebFOCUS.

`Userid`

Is the name of the user ID to be deleted.

**Example:**

In the following example, the user ID, `restid`, is deleted.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/USERS/restid?IBIRS_action=delete

**Response:**
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000"
returndesc="SUCCESS" subreturncode="0"
subsystem="SSYS" type="simple">
<ibfsparams size="0"/>

<rootObject _jt="IBFSUserObject" description="Rest Userid" dummy="false"
email="restid@informationbuilders.com"
fullPath="IBFS:/SSYS/USERS/restid" name="restid" nameSpace="DB"
password="$c35587264cbbbe38$ce25f3b448103ede231ee0b943bf8fd031b7bac26e1e0591da4bb7105d2672f206de9eb7b39d4fb83eb6a0fae2ff1ec2ccaa70103f7723c89d0d426098c32" policy="///+f///////9/////////////+AAAAA" type="User">
<brack _jt="IBSSUserStatus" name="ACTIVE"/>
<brack _jt="ArrayList" size="0"/>
</rootObject>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the user ID was deleted successfully.

Adding and Updating a Group

This RESTful web service request can be used to add or update a group to WebFOCUS.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/SSYS/GROUPS/Group

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Group

Is the name of the group to be added.

Body Format:

IBIRS_action=put&IBIRS_object=Object&IBIRS_replace=ReplaceGroupProperties

where:

Object

Is the XML object defining the attributes for the group, using the following format:
where:

*GroupTitle*

Is the title for the group.

*ReplaceGroupProperties*

Is an optional property that allows you to decide whether or not the properties for a group can be updated.

You can choose *true* (default) or *false*.

**Example:**

In the following example, a group called RestUsers is added. The title for the group is RESTful Web Services Users.

**Request:**

`http://localhost:8080/ibi_apps/rs/ibfs/SSYS/GROUPS/RestUsers`

**Body:**

```
IBIRS_action=put&IBIRS_object=
  <object _jt="IBFSGroupObject" container="true" description="RESTful Web Services Users" type="Group"></object>
```

**Response:**

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
  returncode="10000" returndesc="SUCCESS" subreturncode="0"
  subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSGroupObject" container="true" description="RESTful Web Services Users" dummy="false"
    fullPath="/SSYS/GROUPS/RestUsers" name="RestUsers" policy="///
    +f/////////9////////////+AAAAA" type="Group">
    <users _jt="ArrayList" size="0"/>
  </rootObject>
</ibfsrpc>
```

If the value for the `returncode` attribute in the XML response is 10000, then the group was added successfully.

**Deleting a Group**

This RESTful web service request can be used to delete a group.
HTTP Method: DELETE

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/SSYS/GROUPS/Group?IBIRS_action=delete

where:

d
Is the name of the system where WebFOCUS is installed.

d
Is the port number used by WebFOCUS.

Group
Is the name of the group to be deleted.

Example:

In the following example, the group, RestUsers, is deleted.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/GROUPS/RestUsers?
IBIRS_action=delete

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action"
returncode="10000" returndesc="SUCCESS" subreturncode="0"
subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSGroupObject" container="true" description="RESTful
Web Services Users" dummy="false"
    fullPath="IBFS:/SSYS/GROUPS/RestUsers" name="RestUsers"
    type="Group">
    <users _jt="ArrayList" size="0"/>
  </rootObject>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the group was
deleted successfully.

Adding a User to a Group

This RESTful web service request can be used to add a user to a group.

HTTP Method: POST

REST URL Format:
http://host:port/ibi_apps/rs/ibfs/SSYS/USERS/UserId

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

UserId

Is the name of the user ID to be added to a group.

**Body Format:**

IBIRS_action=addUserToGroup&IBIRS_groupPath=GroupPaths

where:

GroupPaths

Are the paths to groups that the user ID is to be added. For example:

/SSYS/GROUPS/group1;/SSYS/GROUPS/group2

**Example:**

In the following example, the user ID restid is added to the RestUsers group.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/USERS/restid

**Body:**

IBIRS_action=addUserToGroup&IBIRS_groupPath=/SSYS/GROUPS.RestUsers

**Response:**
If the value for the returncode attribute in the XML response is 10000, then the user ID was added successfully to the group.

Removing a User From a Group

This RESTful web service request can be used to remove a user from a group.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/SSYS/USERS/UserId

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.
**UserId**

Is the name of the user ID to be removed from a group.

**Body Format:**

```
IBIRS_action=removeUserFromGroup&IBIRS_groupPath=GroupPaths
```

where:

**GroupPaths**

Are the paths to groups that the user ID is to be removed. For example:

```
/SSYS/GROUPS/group1;/SSYS/GROUPS/group2
```

**Example:**

In the following example, the user ID `restid` is removed from the `RestUsers` group

**Request:**

```
http://localhost:8080/ibi_apps/rs/ibfs/SSYS/USERS/restid
```

**Body:**

```
IBIRS_action=removeUserFromGroup&IBIRS_groupPath=/SSYS/GROUPS/RestUsers
```

**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="IBIRS_action" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="0"/>
  <rootObject _jt="IBFSUserObject" description="Rest Userid" dummy="false" email="restid@informationbuilders.com"
    fullPath="IBFS:/SSYS/USERS/restid" handle="739804165" name="restid" nameSpace="DB"
    password="$c35587264cbbe38$ce25f3b448103e2031ee0b943bf8fd031b7bac26e1e0591da4bb7105d2672f206de9eb7b39d4fb83eb6a01a0faea2ff1ec2ccaa70103f7723c89d0d426098c32" type="User">
    <status _jt="IBSSUserStatus" name="ACTIVE"/>
    <groups _jt="ArrayList" size="1">
      <item _jt="IBFSGroupObject" container="true" description="All defined users" dummy="false"
        fullPath="IBFS:/SSYS/GROUPS/EVERYONE" handle="10100" index="0" name="EVERYONE" type="Group">
        <users _jt="ArrayList" size="0"/>
      </item>
    </groups>
  </rootObject>
</ibfsrpc>
```
If the value for the `returncode` attribute in the XML response is 10000, then the user ID was removed successfully from the group.

**Adding a Role**

This RESTful web service request can be used to add a role and define the privileges that are associated with the role.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/SSYS/ROLES/Role

where:

- `host`
  - Is the name of the system where WebFOCUS is installed.

- `port`
  - Is the port number used by WebFOCUS.

- `Role`
  - Is the name of the role to be added.

**Body Format:**

`IBIRS_action=put&IBIRS_object=Object`

where:

- `Object`
  - Is the XML object that defines the privileges associated with the role.

  This XML object must have the following structure:
where:

**RoleDescription**

Is the description of the role.

**Subsystem**

Is the subsystem associated with the role. Valid values include:

- Session
- WFC
- BIP
- EDA
- USERS
- GROUPS
- ROLES
- FILE
- WEB
Privilege

Is the privilege name that is associated with the role. Each privilege is assigned within the opening and closing Entry tags. For a list of valid privileges, see Listing Privileges on page 132.

Example:

In the following example, a role called LibraryCustom is added. The description for the role is Library Privilege - Custom. The subsystem that the role is associated with is WFC. The privileges assigned to this role are opLibrary, opList, opDisplayVersionInfo, opRCEncoder, opPortalAccess, and opBidRunTime.

Request:

http://localhost:8080/ibi_apps/rs/ibfs/SSYS/ROLES/LibraryCustom

Body:

IBIRS_action=put&object=<object _jt="IBFSPermissionSetObject" description="Library Privilege - Custom" showPermissions="true" subsysNameList="WFC" type="PermissionSet">
  <pSet _jt="IBSSPermissionSet" compLvl="100" shipped="true">
    <policy _jt="IBSSPolicy">
      <policy _jt="EnumMap" _keyJT="IBSSOperation">
        <entry>
          <key _jt="IBSSOperation" name="opLibrary"/>
          <value _jt="IBSSVerb" name="PERMIT"/>
        </entry>
        <entry>
          <key _jt="IBSSOperation" name="opList"/>
          <value _jt="IBSSVerb" name="PERMIT"/>
        </entry>
      </policy>
    </policy>
  </pSet>
</object>
Response:

```xml
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put" returncode="10000" returnDesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfparams size="5">
  <entry key="IBIRS_replace" value="true"/>
  <entry key="IBIRS_private" value="__null"/>
  <entry key="IBIRS_object" value=""/>
</ibfparams>
</ibfsrpc>
```
name='opList'/&gt; &lt;value _jt='IBSSVerb' name='PERMIT'/&gt; 
   &lt;/entry&gt;
   &lt;/policy&gt; &lt;/subsysList&gt; &lt;/pSet&gt; &lt;/object&gt; 
   &gt; 
   &lt;/ibfsparams&gt; 
 &lt;/rootObject &gt;
If the value for the `returncode` attribute in the XML response is 10000, then the role was successfully added.

**Deleting a Role**

This RESTful web service request can be used to delete a role.

**HTTP Method:** DELETE

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/SSYS/ROLES/Role?IBIRS_action=delete
```

where:

- `host`
  
  Is the name of the system where WebFOCUS is installed.

- `port`
  
  Is the port number used by WebFOCUS.

- `Role`
  
  Is the name of the role to be deleted.

**Example:**

In the following example, a role called LibraryCustom is deleted.

**Request:**

```
http://localhost:8080/ibi_apps/rs/ibfs/SSYS/ROLES/LibraryCustom?IBIRS_action=delete
```

**Response:**
If the value for the `returncode` attribute in the XML response is 10000, then the role was successfully deleted.

**Adding a Rule**

This RESTful web service request can be used to apply a rule against a specific item.

**HTTP Method:** POST

**REST URL Format:**
http://host:port/ibi.apps/rs/ibfs/ItemToBeRestricted

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**ItemToBeRestricted**

Is the path to the item that is being restricted. For example:

/WFC/Repository/ParentFolder/FolderName

**Body Format:**

IBIRS_action=addRule&IBIRS_path=ItemToBeRestricted&IBIRS_subjectPath=GroupUser &IBIRS_verb=RestrictType&IBIRS_role=Role&IBIRS_applyTo=FolderChildren

where:

**ItemToBeRestricted**

Is the path to the item that is being restricted. For example:

/WFC/Repository/ParentFolder/FolderName

**GroupUser**

Are the paths to groups or user IDs to which a specific role will be applied. For example:

/SSYS/GROUPS/group1;/SSYS/GROUPS/group2

**RestrictType**

Is one of the following types of restrictions that can be applied to a specific role:

- NOT_SET
- PERMIT
- DENY
- UNPERMIT
- UNDENY
- OVERPERMIT
CLEARINHERITANCE

**Role**

Is the specific role that is applied to *GroupUser*. For example, List, Run, and ListAndRun.

**FolderChildren**

Determines whether the rule will be applied to only *ItemToBeRestricted*, *ItemToBeRestricted* and its children, or just the children. Valid values include:

- FOLDER_AND_CHILDREN
- FOLDER_ONLY
- CHILDREN_ONLY

For example, FOLDER_AND_CHILDREN could be used to apply a rule for a specific folder and its subfolders.

**Example:**

In the following example, a rule is added to permit the user ID (restid) to list and run items from the Quarterly folder within Financial_Reports, including its subfolders.

**POST Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports/Quarterly

**Body:**

```url
IBIRS_action=addRule&IBIRS_path=/WFC/Repository/Financial_Reports/Quarterly&IBIRS_subjectPath=/SSYS/USERS/restid&IBIRS_verb=PERMIT&IBIRS_role=ListAndRun&IBIRS_applyTo=FOLDER_AND_CHILDREN
```

**Response:**


If the value for the `returncode` attribute in the XML response is 10000, then the rule was successfully created.

**Deleting a Rule**

This RESTful web service request can be used to remove a rule.

**HTTP Method:** POST

**REST URL Format:**

```plaintext
http://host:port/ibi_apps/rs/ibfs/ItemRestricted
```
where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**ItemRestricted**

Is the path to the item that is being restricted. For example:

/WFC/Repository/ParentFolder/FolderName

**Body Format:**

IBIRS_action=removeRule&IBIRS_path=ItemRestricted&IBIRS_subjectPath=GroupUser

&IBIRS_role=Role

where:

**ItemRestricted**

Is the path to the item that is being restricted. For example:

/WFC/Repository/ParentFolder/FolderName

**GroupUser**

Is the path to a particular group or user ID to which a specific role was applied. For example:

/SSYS/USERS(userid

**Role**

Is the specific role that was applied to GroupUser. For example, List, Run, and ListAndRun.

**Example:**

In the following example, a rule is removed for user ID (restid) to list and run items from the Quarterly folder within Financial_Reports.

**POST Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports/Quarterly

**Body:**

IBIRS_action=removeRule&IBIRS_path=/WFC/Repository/Financial_Reports/Quarterly
&IBIRS_subjectPath=/SSYS/USERS/restid&IBIRS_role=ListAndRun
Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="removeRule"
	nreturncode="10000" returndesc="SUCCESS" subreturncode="0"

subsystem="SSYS" type="simple">

<ibfsparams size="3">

<entry key="IBIRS_role" value="ListAndRun"/>
<entry key="IBIRS_subjectPath" value="/SSYS/USERS/restid"/>
<entry key="IBIRS_" value="/WFC/Repository/Financial_Reports/Quarterly"/>

</ibfsparams>

<rootObject _jt="IBFSPermissionSetObject" description="List and run content" dummy="false" fullPath="IBFS:/SSYS/ROLES/ListAndRun"

handle="10330" name="ListAndRun" policy="/////D///9+f/////////8AAAA="

rsPath="/ibi_apps/rs/ibfs/SSYS/ROLES/ListAndRun"
showPermissions="false" subsysNameList="WFC" type="PermissionSet">

<pSet _jt="IBSSPermissionSet" compLvl="0" description="List and run content" id="10330" name="ListAndRun" shipped="true">

<policy _jt="IBSSPolicy" derivedDate="1349182611014">

<policy _jt="EnumMap" _keyJT="IBSSOperation" size="2">

<entry>

<key _jt="IBSSOperation" name="opList"/>

<value _jt="IBSSVerb" name="PERMIT"/>

</entry>

<entry>

<key _jt="IBSSOperation" name="opRun"/>

<value _jt="IBSSVerb" name="PERMIT"/>

</entry>

</policy>

</policy>

</pSet>

</rootObject>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the rule was successfully removed.

Listing Rules for a Subject

This RESTful web service request can be used to retrieve a list of rules for a specific subject.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/GroupUser
where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

GroupUser

Is the path to a particular group or user ID. For example:

/SSYS/USERS/userid

Body Format:

IBIRS_action=listRulesForSubject

Example:

In the following example, a list rules is returned for user ID called restid.

POST Request:

http://localhost:8080/ibi_apps/rs/ibfs/restid

Body:

IBIRS_action=listRulesForSubject

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFResponseObject" language="EN" name="listRulesForSubject" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="1">
    <entry key="IBIRS_path" value="/SSYS/USERS/restid"/>
  </ibfsparams>
  <rootObject _jt="IBFSObject" container="true" description="Rules for User:restid" dummy="false" fullPath="NO PATH/RulesList" name="RulesList" type="IBFSFolder">
    <children _jt="ArrayList" size="1">
      <item _jt="IBFSRuleObject" compLvl="0" dummy="false" index="0" pSetName="ListAndRun" parent="RulesList" resPathName="IBFS:/WFC/Repository/Financial_Reports/Quarterly" subject="restid" subjectType="U" type="Rule">
        <verb _jt="IBSSVerb" name="PERMIT"/>
      </item>
      <applyTo name="FOLDER_AND_CHILDREN"/>
    </children>
  </rootObject>
</ibfsrpc>
If the value for the `returncode` attribute in the XML response is 10000, then the rules were successfully returned.

**Listing Rules for a Resource**

This RESTful web service request can be used to retrieve a list of rules for a specific resource.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/Resource

where:

`host`

Is the name of the system where WebFOCUS is installed.

`port`

Is the port number used by WebFOCUS.

`Resource`

Is the path to a particular resource. For example:

/WFC/Repository/ParentFolder/FolderName

**Body Format:**

`IBIRS_action=listRulesForResource`

**Example:**

In the following example, a list rules is returned for the Quarterly folder within the Financial_Reports folder.

**POST Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Financial_Reports/Quarterly

**Body:**

`IBIRS_action=listRulesForResource`

**Response:**
If the value for the `returncode` attribute in the XML response is 10000, then the rules were successfully returned.

**Listing Rules for a Role**

This RESTful web service request can be used to retrieve a list of rules for a specific role.

**HTTP Method:** POST

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/Role
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **Role**
  
  Is the specific role (for example, List, Run, and ListAndRun).

**Body Format:**

```
IBIRS_action=listRulesForRole
```
Example:

In the following example, a list rules is returned for the ListAndRun role.

**POST Request:**

http://localhost:8080/ibi_apps/rs/ibfs/ListAndRun

**Body:**

IBIRS_action=listRulesForRole

**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="listRulesForRole"
returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
  <ibfsparams size="1">
    <entry key="IBIRS_path" value="/ListAndRun"/>
  </ibfsparams>
  <rootObject _jt="IBFSObject" container="true" description="Rules with
PSET:ListAndRun" dummy="false" fullpath="NO PATH/RulesList"
name="RulesList" type="IBFSFolder">
    <children _jt="ArrayList" size="2">
      <item _jt="IBFSRuleObject" compLvl="0" dummy="false" index="0"
pSetName="ListAndRun" parent="RulesList" resPathName="IBFS:/WFC/Repository/
Public" subject="EVERYONE" subjectType="G" type="Rule">
        <verb _jt="IBSSVerb" name="PERMIT"/>
        <applyTo name="FOLDER_AND_CHILDREN"/>
      </item>
      <item _jt="IBFSRuleObject" compLvl="0" dummy="false" index="1"
pSetName="ListAndRun" parent="RulesList" resPathName="IBFS:/WFC/Repository/
Financial_Reports/Quarterly" subject="restid" subjectType="U" type="Rule">
        <verb _jt="IBSSVerb" name="PERMIT"/>
        <applyTo name="FOLDER_AND_CHILDREN"/>
      </item>
    </children>
  </rootObject>
</ibfsrpc>
```

If the value for the `returncode` attribute in the XML response is 10000, then the rules were successfully returned.

**Expanding a Policy String**

This RESTful web service request can be used to expand a Base64-encoded policy string representing the Effective Policy to an XML document, which lists the privileges that are permitted or denied.

**HTTP Method:** POST

**REST URL Format:**
http://host:port/ibi_apps/rs/utils

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

**Body Format:**

```
IBIRS_action=expandPolicy&IBIRS_base64Policy=PolicyString
```

where:

PolicyString

Is the Base64-encoded policy string representing the Effective Policy. The string can be obtained by running RESTful Web Service requests that list various items (for example, Folders, Users, and Groups).

**Example:**

In this example, the Base64-encoded policy string containing the following value is expanded:

```
////D////fx/////+///////////4AAAA
```

**POST Request:**

```
http://localhost:8080/ibi_apps/rs/utils
```

**Body:**

```
IBIRS_action=expandPolicy&IBIRS_base64Policy=////D////fx/////+///////////4AAAA
```

**Response:**
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="expandPolicy" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfparams size="1">
    <entry key="IBIRS_base64Policy" value="////D////fx/////+////////+AAAA"/>
  </ibfparams>
</ibfsrpc>

<rootObject _jt="IBSSPolicy" derivedTime="1368100027309">
  <policy _jt="EnumMap" _keyJT="IBSSOperation" size="185">
    <entry>
      <key _jt="IBSSOperation" name="opLibrary"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opViewPortal"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opList"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opViewProps"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opDisplayVersionInfo"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opFavorites"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opMagnify"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opMobileFavorites"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opLibrary"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opViewPortal"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opList"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opViewProps"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opDisplayVersionInfo"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opFavorites"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opMagnify"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
    <entry>
      <key _jt="IBSSOperation" name="opMobileFavorites"/>
      <value _jt="IBSSVerb" name="PERMIT"/>
    </entry>
  </policy>
</rootObject>
<entry>
  <key _jt="IBSSOperation" name="opCustom01"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom02"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom03"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom04"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom05"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom06"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom07"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom08"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom09"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom10"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom11"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom12"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
<entry>
  <key _jt="IBSSOperation" name="opCustom13"/>
  <value _jt="IBSSVerb" name="DENY"/>
</entry>
Creating a Policy String

This RESTful web service request can be used to return a Base64-encoded policy string representing the Effective Policy based on an XML document, which lists the privileges that are permitted or denied.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/utils

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.
Body Format:

IBIRS_action=compactPolicy&IBIRS_policy=Policy

where:

Policy

Is the XML object defining the Effective Policy.

Example:

In the following example, a Base64-encoded policy string will be created based on the XML document containing the Effective Policy.

POST Request:

http://localhost:8080/ibi_apps/rs/utils

Body:
IBIRS_action=compactPolicy&IBIRS_policy=<rootObject _jt="IBSSPolicy" derivedTime="1368095042526"><policy _jt="EnumMap" _keyJT="IBSSOperation" size="185"><entry><key _jt="IBSSOperation" name="opLibrary"><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opViewPortal"><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opList"/><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opViewProps"><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opDisplayVersionInfo"><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opFavorites"><value _jt="IBSSVerb" name="PERMIT"/></entry><entry><key _jt="IBSSOperation" name="opCustom01"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom02"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom03"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom04"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom05"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom06"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom07"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom08"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom09"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom10"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom11"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom12"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom13"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom14"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom15"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom16"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom17"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom18"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom19"><value _jt="IBSSVerb" name="DENY"/></entry><entry><key _jt="IBSSOperation" name="opCustom20"><value _jt="IBSSVerb" name="DENY"/></entry></policy></rootObject>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="compactPolicy" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">

<ibfsparms size="1">

<entry key="IBIRS_policy" value="&lt;rootObject _jt="IBSSPolicy" derivedTime="1368095042526"&gt;&lt;/rootObject _jt="IBSSPolicy" derivedTime="&quot;1368095042526"&quot;&gt;\"&gt;&lt;/entry&gt;&lt;/ibfsparms size="1">

5. WebFOCUS Security Administration RESTful Web Service Requests
Running a Resource Template

This RESTful web service request can be used to run a resource template, which will create predefined groups, roles, portals, and folders.
For more information on resource templates, see the WebFOCUS Security and Administration content (Chapter 5, WebFOCUS Administration, Understanding Domains topic).

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/templates

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

**Body Format:**

IBIRS_action=run&IBIRS_fileName=templateName&IBIRS_vars=object

where:

*templateName*

Is the name of the resource template in the \WebFOCUSxx\config\resource_templates directory.

*Object*

Is the XML object defining the name and description of the group, role, portal, and folder that is created from running the template. The XML object uses the following format:

```xml
<object _jt="HashMap"><entry><key _jt="string" value="name"/></entry><value _jt="string" value="name"/></entry><entry><key _jt="string" value="desc"/></entry><value _jt="string" value="description"/></object>
```

where:

*name*

Is the group, role, portal, and folder name.

*description*

Is the group, role, portal, and folder description.

**Example:**

In the following example, a template called *EnterpriseDomain* is being used, which will create a group and folder. The group and folder that are created will have a name of *Sales* with a description of *Sales Domain*. 

Request:

http://localhost:8080/ibi_apps/rs/templates

Body:

IBIRS_action=run&IBIRS_fileName=EnterpriseDomain&IBIRS_vars=<object _jt="HashMap"><entry><key _jt="string" value="name"/>&<value _jt="string" value="Sales"/></entry><entry><key _jt="string" value="desc"/>&<value _jt="string" value="Sales Domain"/></entry></object>

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="run" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="2">
    <entry key="IBIRS_vars" value="&lt;object _jt="HashMap"&gt;&lt;entry&gt;&lt;key _jt="string" value="name"/&gt;&lt;/entry&gt;&lt;/object>"/>
    <entry key="IBIRS_fileName" value="EnterpriseDomain"/>
  </ibfsparams>
  <rootObject _jt="string"/>
</ibfsrpc>

If the value for the returncode attribute in the XML response is 10000, then the template ran successfully.

Changing a Password for a User

This RESTful web service request can be used to change the password for a user.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Body Format:
IBIRS_action=changePassword&IBIRS_userName=UserID&IBIRS_password=Password

where:

UserID

Is the name of the user ID in which the password will be changed.

Password

Is the new password.

Example:

In the following example, the password for user ID restid is changed to rest10.

Request:
http://localhost:8080/ibi_apps/rs/ibfs

Body:
IBIRS_action=changePassword&IBIRS_userName=restid&IBIRS_password=rest10

Response:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="changePassword" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple"><ibfspparams size="2">
<entry key="IBIRS_password" value="****"/>
<entry key="IBIRS_userName" value="restid"/>
</ibfspparams><rootObject _jt="IBFSUserObject" description="Rest Userid" dummy="false" email="restid@informationbuilders.com" fullPath="IBFS:/SSYS/USERS/restid" handle="1811177469" length="0" name="restid" nameSpace="DB" policy="f://3s///99H/7///9v/9///f///+AAAAA=" rsPath="/ibi_apps/rs/ibfs/SSYS/USERS/restid" type="User">
<status _jt="IBSSUserStatus" name="ACTIVE"/>
<groups _jt="ArrayList" size="0"/>
<pSetList _jt="ArrayList" size="0"/></rootObject></ibfsrpc>
This section describes the format and structure of ReportCaster RESTful web service requests.

In this chapter:

- Retrieving Reports From the ReportCaster Library
- Deleting a Version of a Report From the ReportCaster Library
- Creating and Updating an Address Book
- Creating and Updating a Library Access List
- Deleting a Library Access List
- Creating and Updating a Schedule
- Running a Schedule
- Retrieving a Schedule
- Deleting a Schedule
- Deleting an Address Book
- Log Functionality
- Console Functionality

Retrieving Reports From the ReportCaster Library

This RESTful web service request can be used to retrieve a report for a specific version from the ReportCaster Library.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs?IBIRS_path=path/libraryFile.lib$(version)&IBIRS_action=run

where:

**host**

Is the name of the system where WebFOCUS is installed.
**port**

Is the port number used by WebFOCUS.

**version**

Is the version of the library output.

Note that if $(version)$ is omitted or version is replaced with a 0, then the latest revision is retrieved.

**Example:**

http://server:port/ibi_apps/rs?IBIRS_path=/WFC/Repository Tests/L1ch6egp6101.lib$(7)&IBIRS_action=run

**GET Request URL:**

http://host:port/ibi_apps/rs/ibfs?IBIRS_path=path/libraryFile.lib$(version)&IBIRS_action=run

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**version**

Is the version of the library output.

**Response:**

The report output is displayed.

### Deleting a Version of a Report From the ReportCaster Library

This RESTful web service request can be used to delete a specific version of a report from the ReportCaster Library.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ContentName

where:

**host**

Is the name of the system where WebFOCUS is installed.
port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder used for the stored WebFOCUS report. If the folder used for the stored WebFOCUS report exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

ContentName

Is the name of the stored WebFOCUS report as defined in the name attribute when listing the content of a folder. For more information, see Listing Reports, Schedules, and Library Content Within the WebFOCUS Repository on page 52.

Body Format:

IBIRS_action=run&IBIRS_args=Object

where:

Object

Is the XML object that defines the version of the report that is to be deleted.

<object _jt="HashMap">
  <entry>
    <key _jt="string" value="IBFS_content_revision"/>
    <value _jt="intval" value="deleteversions"/>
    <value _jt="boolval" value="true"/>
  </entry>
</object>

where:

deleteversions

Is the version of the report that is to be deleted.

Creating and Updating an Address Book

This RESTful web service request can be used to create or update a ReportCaster Address Book, which is used by ReportCaster schedules to distribute reports using email, FTP, or a printer.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/AddressBookName
where:

**host**
Is the name of the system where WebFOCUS is installed.

**port**
Is the port number used by WebFOCUS.

**FolderName**
Is the name of the folder where the ReportCaster Address Book is stored. If the folder that is used to store the Address Book exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**AddressBookName**
Is the name of the ReportCaster Address Book to add or update, which must have a .adr extension.

**Body Format:**

IBIRS\_action=put&IBIRS\_object=Object&IBIRS\_replace=ReplaceAddressBook&IBIRS\_private=MakePrivate&IBIRS\_args=AddEntriesObject

where:

**Object**
Is the XML object that defines the ReportCaster Address Book.

```
<rootObject _jt="IBFSCasterObject"
description="AddressBookDescription"
type="CasterDistributionList"><casterObject _jt="CasterAddrBook"
access="AccessType" bookName="AddressBookName"
description="AddressBookDescription" method="Method"
owner="Owner"><destinationList _jt="array"
itemsClass="CasterAddrbookDestinationElement" size="numberOfItems"><item _jt="CasterAddrbookDestinationElement" burstValue="BurstValue"
burstValueType="BurstValueType" index="indexValue"
location="Location"/></destinationList></casterObject></rootObject>
```
where:

**AddressBookDescription**

Is the title for the Address Book.

**AccessType**

Specifies the security level of an Address Book, which can be set to *PUBLIC* or *PRIVATE*. A public Address Book can be viewed by all users, while a private Address Book can be viewed only by the owner and the Administrator.

**AddressBookName**

Is the name of the Address Book to add or update, which must have a .adr extension. For example, REST_Distribution_List.adr.

**Method**

Specifies the distribution method for an Address Book, which can be set to *FTP*, *EMAIL*, or *PRINT*.

**Owner**

Indicates the owner of an Address Book. The user ID specified will be associated with the Address Book as the owner, and will have privileges to view and modify the Address Book.

**numberOfItems**

Is the number of members that will be added to the Address Book.

**BurstValue**

If *BurstValueType* is set to *P*, then *BurstValue* is the value used when bursting a report.

If *BurstValueType* is set to *W*, then an asterisk (*) and a question mark (?) can be used as wild cards to represent characters at the beginning, end, or middle of the burst values. For example:

```
a?c*
```

In this case, all values that start with letter *a* and have letter *c* as the third character are returned.

If *BurstValueType* is set to *R*, then Java regular expressions can be used to identify strings of text. Precede each instance of a burst value using a Java regular expression. For example:

```
[bcr]at
```

In this case, all values that are *bat*, *cat*, or *rat* are returned.
If BurstValueType is set to $E$, then BurstValue should not have a value.

*BurstValueType*

Specifies one of the following patterns that is used for *BurstValue*:

- **P.** Plain Text
- **W.** Wildcard
- **R.** Regular Expression
- **E.** Else Send

*indexValue*

Is a value that starts at 0 and increments by 1 for every member that is added to the Address Book.

*Location*

Depending on the distribution method, *Location* may contain an email address, printer destination, or FTP path.

*ReplaceAddressbook*

Determines whether to update an Address Book. Select one of the following options:

- **true.** Updates an Address Book. To update an Address Book, the existing Address Book must be retrieved. The retrieved XML object would then be modified and then used as input. The following REST URL retrieves an existing Address Book:

  http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/AddressBookName?IBIRS_action=get

- **false.** Does not update an Address Book.

*MakePrivate*

Determines whether to make an Address Book private. Specify *true* or *false*.

*AddEntriesObject (optional)*

Is the XML object that is used to indicate that additional entries are to be added to the Address Book. The Address Book must first be retrieved and the additional entries must be included within the *destinationList* tags as part of the *Object* definition for *IBIRS_object*. The existing entries in the Address Book do not have to be included within the *destinationList* tags. *IBIRS_replace* should be set to *true*. 
Example 1:

In this example:

- An Address Book called REST_Distribution_List.adr is added.
- The description for the Address Book is REST Distribution List.
- The Address Book is used for an email distribution.
- The Address Book will be private.
- For a burst value of JAPAN, the report will be emailed to rest@informationbuilders.com.
- For all burst values except for JAPAN, the report will be emailed to other@informationbuilders.com.

POST Request URL:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr

Body:

IBIRS_action=put&IBIRS_object=<rootObject _jt="IBFS_CasterObject" description="REST Distribution List" type="CasterDistributionList"><casterObject _jt="CasterAddrBook" access="PRIVATE" bookName="REST_Distribution_List.adr" description="REST Distribution List" method="EMAIL" owner="admin"><destinationList _jt="array" itemsClass="CasterAddrbookDestinationElement" size="2"><item _jt="CasterAddrbookDestinationElement" burstValue="" burstValueType="E" index="0" location="other@informationbuilders.com"/></item><item _jt="CasterAddrbookDestinationElement" burstValue="" burstValueType="P" index="1" burstValue="JAPAN" location="rest@informationbuilders.com"></item></destinationList></casterObject></rootObject>&IBIRS_replace=false&IBIRS_private=true

Response:
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put"
returncode="10000" retrundesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
  <ibfsparams size="5">
    <entry key="IBIRS_replace" value="false"/>
    <entry key="IBIRS_private" value="true"/>
    <entry key="IBIRS_object" value="&lt;rootObject
     _jt="IBFSCasterObject" description="REST Distribution
     List" type="&quot;CasterDistributionList&quot;&gt;&lt;casterObject
     _jt="CasterAddrBook" access="PRIVATE" bookName=&quot;REST_Distribution_List.adr&quot; description=&quot;REST Distribution List&quot; method=&quot;EMAIL&quot; owner=&quot;admin&quot;&gt;&lt;destinationList _jt=&quot;array&quot; itemsClass=&quot;CasterAddrbookDestinationElement&quot; size=&quot;2&quot;&gt;&lt;item _jt=&quot;CasterAddrbookDestinationElement&quot; burstValue=&quot;&quot; burstValueType=&quot;E&quot; index=&quot;0&quot; location=&quot;other@informationbuilders.com&quot;&gt;&lt;/item&gt;&lt;item _jt=&quot;CasterAddrbookDestinationElement&quot; burstValue=&quot;JAPAN&quot; burstValueType=&quot;P&quot; index=&quot;1&quot; location=&quot;rest@informationbuilders.com&quot;&gt;&lt;/item&gt;&lt;/destinationList&
     t&gt;&lt;/casterObject&gt;&lt;/rootObject&gt; 
    </entry>
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_" value="/WFC/Repository/RESTful_Web_Services/
    Car_Reports/REST_Distribution_List.adr"/>
  </ibfsparams>
</ibfsrpc>
If the value for the returncode attribute in the XML response is 10000, then the Address Book was successfully added.

**Example 2:**

In this example:

- An Address Book called REST_Distribution_List.adr is updated.
- The description for the Address Book is REST Distribution List.
- The Address Book is used for an email distribution.
- The Address Book will be private.
- For a burst value of ITALY, the report will be emailed to rest@informationbuilders.com.
- For all burst values except for ITALY, the report will be emailed to other@informationbuilders.com.

The following REST URL retrieves an existing Address Book:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr?IBIRS_action=get

**POST Request URL:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr

**Body:**

```
IBIRS_action=put&IBIRS_object=<rootObject
    _jt="IBFSCasterObject" binary="false" createdBy="1350862349237"
    defaultLng="en_US" description="REST Distribution List" dummy="false"
    effectiveRSName="EDASERVE" extension="adr"
    externalId="1a7ddf0e1ff6a148861bde9177c691d280a0"
    fullPath="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr"
    handle="1a7ddf0e1ff6a148861bde9177c691d280a0"
    lastModified="1350862349237" lastaccessedBy="admin"
    lastaccessOn="1350862566520" length="0" name="REST_Distribution_List.adr"
    ownerId="10001" ownerName="admin" ownerType="U"
    policy="/3/D///9+f/////f/////////8AAAA=" returnedLng="en_US"
    rsPath="/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr" signedOn="true"
    type="CasterDistributionList">\n    <nlsValues _jt="HashMap" loadFactor="0.75" threshold="12"><entry><key _jt="string" value="en_US"/></entry></nlsValues><properties size="3"><entry key="id"
    value="1a7ddf0e1ff6a148861bde9177c691d280a0"/></entry><entry key="tool"
    value="addressbook"/></entry><entry key="method"
    value="EMAIL"/></properties><casterObject _jt="CasterAddrBook"
    access="PRIVATE" bookmarkName="REST_Distribution_List.adr" burstValue="false"
    description="REST Distribution List"
    ibfspath="/WFC/Repository/RESTful_Web_Services/Car_Reports"
    id="1a7ddf0e1ff6a148861bde9177c691d280a0" method="EMAIL" owner="admin"
    policy="open,delete,rename,|,security;makeRules;viewRules"/>
```
Response:

If the value for the returncode attribute in the XML response is 10000, then the Address Book was successfully updated.

Example 3:

In this example:

- Additional entries are added to the REST_Distribution_List.adr Address Book.
- For a burst value of ENGLAND, the report will be emailed to rest2@informationbuilders.com.
- For a burst value of FRANCE, the report will be emailed to rest3@informationbuilders.com.

The following REST URL retrieves an existing Address Book:

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr?IBIRS_action=get
```

**POST Request URL:**

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr
```

**Body:**
Response:

If the value for the returncode attribute in the XML response is 10000, then the additional entries were successfully added to the Address Book.

Creating and Updating a Library Access List

This RESTful web service request creates or updates a ReportCaster Library Access List that can be used by ReportCaster schedules when the distribution is set to the Report Library. If a schedule is defined to use a Library Access List, then Users or Groups defined in the list are granted access to view the part of the report that is stored in the Library, which they have access to, based on a Burst Value. If a Burst Value is not supplied for a particular Access List entry, then the User or Group in the definition will be able to view the entire report.

HTTP Method: POST

REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/LibraryAccessListName
where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**FolderName**

Is the name of the folder where the ReportCaster Library Access List is stored. If the folder that is used to store the Library Access List exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**LibraryAccessListName**

Is the name of the ReportCaster Library Access List to add or update, which must have a .acl extension.

**Body Format:**

IBIRS_action=put&IBIRS_object=Object&IBIRS_replace=ReplaceAccessList&IBIRS_private=Make Private

where:

**Object**

Is the XML object that defines the ReportCaster Library Access List.

```xml
<rootObject _jt="IBFSCasterObject"
  description="AccessListDescription"
  type="CasterAccessList"><casterObject _jt="CasterLibraryAccessBook"
    burstValue="burstValueFlag" description="AccessListDescription"
    owner="Owner"><accessElementList _jt="array"
      itemsClass="CasterLibAccessElement" size="numberOfItems">
    <item _jt="CasterLibAccessElement" burstValue="burstValue"
      index="indexValue" memberName="member" memberType="memberType"/>
  </accessElementList></casterObject></rootObject>
```
where:

**AccessListDescription**

Is the title for the Library Access List.

**burstValueFlag**

Specify one of the following:

- **true.** The Library Access List will be used to burst reports based on a value in each member definition.

- **false.** The Library Access List will not be used to burst reports.

**Owner**

Is the owner of the Library Access List.

**numberOfItems**

Is the number of members that will be added to the Library Access List.

**burstValue**

Is the value used in bursting a report.

**indexValue**

Is a value that starts at 0 and increments by 1 for every member that is added to the Library Access List.

**member**

Is the user name or group that will be added as a member of the Library Access List.

**memberType**

Specify U for user or G for group.

**ReplaceAccessList**

Specify one of the following:

- **true.** Update the Library Access List.

  To update a Library Access List, the existing Library Access List must be retrieved. The retrieved XML object would then be modified and then used as input.

  The following REST URL retrieves an existing Library Access List:

  http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/LibraryAccessListName?IBIRS_action=get
false. Do not update Library Access List.

MakePrivate

Determines whether to make a Library Access List private. Specify true or false.

Example 1:

In this example:

- A Library Access List called RESTAccessList.acl is added.
- The description for the Access List is REST Access List.
- The Library Access List will be private.
- User ID daniel will view the part of the report where the first sort value is equal to FRANCE.
- User ID david will view the part of the report where the first sort value is equal to JAPAN.
- User ID efrem will view the part of the report where the first sort value is equal to ENGLAND.
- User ID gerry will view the part of the report where the first sort value is equal to ITALY.

POST Request URL:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl

Body:

IBIRS_action=put&IBIRS_object=<rootObject _jt="IBFSCasterObject" description="REST Access List" type="CasterAccessList"><casterObject _jt="CasterLibraryAccessBook" burstValue="true" description="REST Access List" owner="admin"><accessElementList _jt="array" itemsClass="CasterLibAccessElement" size="4"><item _jt="CasterLibAccessElement" burstValue="FRANCE" index="0" memberName="daniel" memberType="U"/><item _jt="CasterLibAccessElement" burstValue="JAPAN" index="1" memberName="david" memberType="U"/><item _jt="CasterLibAccessElement" burstValue="ENGLAND" index="2" memberName="efrem" memberType="U"/><item _jt="CasterLibAccessElement" burstValue="ITALY" index="3" memberName="gerry" memberType="U"/></accessElementList></casterObject></rootObject>&IBIRS_replace=false&IBIRS_private=true

Response:
<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put"
returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS"
type="simple">
  <ibfsparms size="5">
    <entry key="IBIRS_replace" value="false"/>
    <entry key="IBIRS_private" value="true"/>
    <entry key="IBIRS_object" value="&lt;rootObject
      _jt="IBFSCasterObject" description="REST Access List" type="CasterAccessList"
      &gt;&lt;casterObject
        _jt="CasterLibraryAccessBook" burstValue="true" description="REST Access List"
        owner="admin"&gt;&lt;accessElementList _jt="array">
      itemsClass="CasterLibAccessElement" size="4" burstValue="FRANCE" index="0" memberName="daniel" memberType="U"/&gt;&lt;item
        _jt="CasterLibAccessElement" burstValue="JAPAN" index="1" memberName="david"/
      &gt;&lt;/accessElementList&gt;&lt;/casterObject
    &gt;&lt;/rootObject"/>
  </ibfsparms>
</ibfsrpc>
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```xml
<casterObject _jt="CasterLibraryAccessBook" burstValue="true" description="REST Access List" ibfsId="5ca19e7315f014c4c19cd148340f7da5d5" ibfsPath="" id="C34ea5140c31c04f68c8534ca97cd4538363" name="" owner="admin" policy="open,delete,rename,|,security;makeRules;viewRules" summary="">
  <accessElementList _jt="array" itemsClass="CasterLibAccessElement" size="4">
    <item _jt="CasterLibAccessElement" burstValue="FRANCE" index="0" memberName="daniel" memberType="U"/>
    <item _jt="CasterLibAccessElement" burstValue="JAPAN" index="1" memberName="david" memberType="U"/>
    <item _jt="CasterLibAccessElement" burstValue="ENGLAND" index="2" memberName="efrem" memberType="U"/>
    <item _jt="CasterLibAccessElement" burstValue="ITALY" index="3" memberName="gerry" memberType="U"/>
  </accessElementList>
</casterObject>
</ibfsrpc>
```
If the value for the returncode attribute in the XML response is 10000, then the Library Access List was added successfully.

**Example 2:**

In this example:

- A Library Access List called RESTAccessList.acl is updated.
- The description for the Access List is REST Access List.
- The Library Access List will be private.
- User ID daniel will view the part of the report where the first sort value is equal to FRANCE.
- User ID david will view the part of the report where the first sort value is equal to JAPAN.
- User ID efrem will view the part of the report where the first sort value is equal to ENGLAND.
- User ID gerry will view the part of the report where the first sort value is equal to ITALY.

The following REST URL retrieves an existing Library Access List:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl?IBIRS_action=get

**POST Request URL:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl

**Body:**
If the value for the returncode attribute in the XML response is 10000, then the Library Access List was updated successfully.

Deleting a Library Access List

This RESTful web service request can be used to delete a ReportCaster Library Access List.

HTTP Method: DELETE

REST URL Format:
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/AccessListName?
IBIRS_action=delete
where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

FolderName

Is the name of the folder where the ReportCaster Library Access List is stored. If the folder that is used to store the Library Access List exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

AccessListName

Is the name of the ReportCaster Library Access List to delete, which must have a .acl extension.

Example:

In the following example, the ReportCaster Library Access List named RESTAccessList.acl is deleted from the Car_Reports folder, which is within the RESTful_Web_Services folder.

Request:

http://localhost:8080/ibi_apps/rs/libfs/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl?IBIRS_action=delete

Response:

<?xml version="1.0" encoding="ISO-8859-1" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="delete" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfparams size="2">
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl"/>
  </ibfparams>
</ibfsrpc>
If the value for the returncode attribute in the XML response is 10000, then the ReportCaster Library Access List was deleted successfully.

Creating and Updating a Schedule

This section describes the structure of the RESTful web service request that is used to create and update a ReportCaster Schedule.

**HTTP Method:** POST

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ScheduleName

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.
**FolderName**

Is the name of the folder that will contain the ReportCaster Schedule. If the folder used for the Schedule is a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**ScheduleName**

Is the name of the ReportCaster Schedule to be added or updated, which also must have a .sch extension.

**Body Format:**

```IBIRS_action=put&IBIRS_replace=ReplaceSchedule&IBIRS_object=Object```

where:

**ReplaceSchedule**

Specify one of the following options:

- **True.** Updates the Schedule. To update a Schedule, the existing Schedule must be retrieved. The retrieved XML object would then be modified and then used as input.

  The following REST URL retrieves an existing Schedule:

  `http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ScheduleName?IBIRS_action=get`

- **False.** Does not update the Schedule.

**Object**

Is the XML object that defines the ReportCaster Schedule. The XML object consists of seven components, which are concatenated in the following order:

- Schedule rootObject
- Schedule properties
- Notification
- Distribution
- Recurrence
- Task
- Closing tags
**Schedule rootObject**

This section describes the Schedule rootObject.

**Body Format:**

```xml
<rootObject _jt="IBFSCasterObject" description="ScheduleTitle" type="CasterSchedule">

where:

*ScheduleTitle*

Is the text describing the job that is being scheduled. The maximum size of the description is 90 characters.

**Schedule Properties**

This section describes the Schedule properties.

**Body Format:**

```xml
<casterObject _jt="CasterSchedule" active="Active" deleteJobAfterRun="DeleteJobAfterRun" description="ScheduleTitle" owner="Owner" priority="Priority" traceType="TraceType"/>

where:

*Active*

Is the flag indicating whether or not a Schedule is active. If set to `true`, the Schedule is active. If set to `false`, the Schedule is inactive.

*DeleteJobAfterRun*

Is a flag indicating whether or not a Schedule is deleted after running the job. If set to `true`, the job is deleted after all tasks are completed. If set to `false`, the job is not deleted.

*ScheduleTitle*

Is the text describing the job that is being scheduled. The maximum size of the description is 90 characters.

*Owner*

Is the owner of this Schedule. The maximum size of the owner is 48 characters.

*Priority*

Is the priority level for the scheduled job. The value ranges from 1 (highest priority) to 5 (lowest priority).
**TraceType**

Specify one of the following types of tracing:

- 0 = Default Trace. Uses ReportCaster trace configuration setting.
- 1 = No Traces
- 2 = Trace Schedule
- 3 = Trace Schedule and Report

**Notification**

When scheduled reports are distributed, ReportCaster allows selected individuals to be notified with log information about the distribution. This notification feature can be altered on a per Schedule basis and can be set to inactive, always notify, or notify only on error. Each Schedule allows the following two types of notifications to be sent simultaneously:

- **Brief.** Contains partial log information.
- **Full.** Contains complete log information.

**Body Format:**

```xml
<notification _jt="CasterScheduleNotification"
    addressForBriefNotification="BriefNotificationAddress"
    addressForFullNotification="FullNotificationAddress" description=""
    from="FromAddress"
    subject="Subject" type="NotificationType"/>
```

where:

- **BriefNotificationAddress**
  
  Is the email address where a brief notification message will be sent after running a Schedule in ReportCaster. The content of the brief notification email is the partial log information for a given Schedule run. The maximum size of the brief notification email address is 75 characters.

- **FullNotificationAddress**
  
  Is the email address where a full notification message will be sent upon running a Schedule in ReportCaster. The content of the full notification email is the complete log information for a given Schedule run. The maximum size of the full notification email address is 75 characters.
**FromAddress**

Is the email address linked to the From header to which the notification will be sent upon running a Schedule in ReportCaster. The maximum size of the From address is 75 characters.

**Subject**

Is the subject header in the email to which the notification will be sent upon running a Schedule in ReportCaster. The maximum size of the email subject is 255 characters.

**NotificationType**

Is the type of notification message to be sent upon the running of a ReportCaster Schedule. The three possible types are **ALWAYS**, **INACTIVE**, and **ONERROR**.

**Distribution**

There are five distribution types to choose from when creating a ReportCaster Schedule:

- Report Library
- Email
- FTP
- Printer
- WebFOCUS Repository

**Report Library**

This is used when the intended distribution method for the scheduled ReportCaster job is storage in the ReportCaster Library. The ReportCaster Library is a secure archiving environment that is configured in a database and provides common access. It is optionally available with the ReportCaster product.

**Body Format:**

```xml
<distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
  <item accessListFullPath="AccessListPath" accessType="AccessType" category="Category"
        compressionEnabled="CompressionEnabled"
        description="DistributionName" destinationPath="DestinationPath"
        enabled="true"
```

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where:

**AccessListPath**

Is the full path to the Access List used to control the viewing of the library content when AccessType is set to ACCESS_LIST. For example, IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/RESTAccessList.acl.

**AccessType**

Is the access type for this library distribution. The access type contains the following three options for viewing a library report:

- PUBLIC
- OWNER
- ACCESS_LIST

**Category**

Is the library category associated with this report. Each category is a root directory within the library used to organize the distribution of reports.

Any task other than a WebFOCUS Repository report that is delivered to the library must be assigned a category when a Schedule is created. The scheduled report and all subsequent versions of the report are filed in subdirectories under the category assigned to it. If the category does not exist, a new category (for example, root directory) is created upon distribution.

The category accepts a maximum of 90 characters.

**CompressionEnabled**

Specify one of the following options:

- **True.** The report is compressed before it is stored in the library.
False. The report is not compressed before it is stored in the library.

**DistributionName**

Is a name that is assigned to the distribution (for example, Report Library).

**DestinationPath**

Is the path to the folder where Library Content will be stored. For example:

IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports

**ExpirationData**

Is the expiration data used to calculate the expiration of a library resident report. For a given ExpirationMode, the expiration data represents a corresponding integer that, when combined with the ExpirationMode, determines if a report should expire. For example, if the ExpirationMode is set to D and the ExpirationData is set to 3, the report will expire in three days. For V, the ExpirationData represents the threshold number of versions that must exist prior to the report expiring from the library.

**ExpirationMode**

Is the basis of calculating when a library report will expire. There are seven expiration modes:

- **D. Day**
- **H. Hour**
- **M. Month**
- **V. Version**
- **W. Week**
- **Y. Year**
- **N. Never**

When associated with a corresponding ExpirationData integer, ReportCaster can determine when a library report will expire. For example, if the ExpirationMode is set to D, and the ExpirationData is set to 3, the report will expire in three days.

For V, the ExpirationData represents the threshold number of versions that must exist prior to the report expiring from the library.
ValueOnly

Specify one of the following options:

- **True.** The distribution to values are in the Access List is limited.
- **False.** The distribution to values in the Access List is not limited.

AuthEnabled

Specify one of the following options:

- **True.** The Mail Server requires authentication.
- **False.** The Mail Server does not require authentication.

AuthPassword

Is the password used to authenticate to the Mail Server if AuthEnabled is set to true.

AuthUserid

Is the account name used to authenticate to the Mail Server if AuthEnabled is set to true.

LibraryURL

Is the base URL contained in a library email notification. When library notification is turned on using SendEmailAfterSaveReport, all users who have access to a library report are sent an email that contains message content, usually a notification that the report is available, and a URL that opens the report in the browser. The base URL can be set to a value that is accessible inside or outside of the ReportCaster environment.

The LibraryURL accepts a maximum of 128 characters. For example:

http://localhost:8080/ibi_apps/library/report.rc

MailFrom

Is the From email address in this library email notification (library email notification must be turned on through SendEmailAfterSaveReport). The maximum size of the From email address is 65 characters.

MailMessage

Is the email message content contained in the email message sent out as part of this notification email (library email notification must be turned on through SendEmailAfterSaveReport). The maximum size of the email message is 255 characters.
MailReply

Is the Reply email address sent in this library email notification (library email notification must be turned through SendEmailAfterSaveReport). The maximum size of the Reply email address is 65 characters.

MailServer

Is the mail server name used to send this library email notification (library email notification must be turned on through SendEmailAfterSaveReport). The maximum size of the mail server name is 65 characters.

MailSubject

Is the email subject sent in this library email notification (library email notification must be turned on through SendEmailAfterSaveReport). The maximum size of the Subject email header is 255 characters.

SendEmailAfterSaveReport

Specifies whether or not an email notification is sent after a report is saved to the library. If the value is set to true, an email notification is sent to users who have access to the report. If the value is set to false, no email notification is sent.

SSLflag

Specify one of the following options:

- True. The Mail Server requires a secure SSL connection.
- False. The Mail Server does not require a secure SSL connection.

TLSflag

Specify one of the following options:

- True. The Mail Server requires a secure TLS connection.
- False. The Mail Server does not require a secure TLS connection.

Email

This is used when the intended distribution method for the scheduled ReportCaster job is through email.

Body Format:
<distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
  <item _jt="CasterScheduleDistributionEmail" authEnabled="AuthEnabled"
    authPassword="AuthPassword" authUserId="AuthUserId"
    description="DistributionName" enabled="true" index="0"
    inlineMessage="InlineMessage" inlineTaskIndex="InlineTaskIndex"
    mailFrom="MailFrom" mailReplyAddress="MailReply"
    mailServerName="MailServer" mailSubject="MailSubject"
    sendingReportAsAttachment="AttachmentFlag" sslEnabled="SSLflag"
    tlsEnabled="TLSflag" zipFileName="ZipFileName"
    zipResult="ZipFlag">
    <destination _jt="CasterScheduleDestination"
      distributionFile="DistFile" distributionListFullPath="DistPath"
      singleAddress="SingleAddress" type="Type">
      <dynamicAddress _jt="CasterScheduleDynamicAddress"
        password="Password" procedureName="ProcedureName"
        serverName="ServerName" userName="UserName"/>
    </destination>
  </item>
</distributionList>

where:

**AuthEnabled**

Specify one of the following options:

- **True.** The Mail Server requires authentication.
- **False.** The Mail Server does not require authentication.

**AuthPassword**

Is the password used to authenticate to the Mail Server if **AuthEnabled** is set to true.

**AuthUserId**

Is the account name used to authenticate to the Mail Server if **AuthEnabled** is set to true.

**DistributionName**

Is a name that is assigned to the distribution (for example, Email).

**InlineMessage**

Is the inline message associated with an email report distribution. An inline message is the message contained in the body of the email when the report is sent as an attachment. If the report is sent inline, this should not be set. The size limit for an inline message is 255 characters.
InlineTaskIndex

Is the index of the task that is going to be inline (in the body of the email). ReportCaster Schedules can accept multiple tasks, with each task representing a report within the Schedule. These tasks will run sequentially. The task index is the sequential index number (from 0 to N) assigned to the tasks within a scheduled distribution. This is particularly important for inline email distribution because only one of the tasks can be an inline report (for example, a report whose contents are in the body of the email). The other reports are sent as an attachment.

MailFrom

Is the email address associated with the From header field of a scheduled email distribution. The size limit for MailFrom is 65 characters.

MailReply

Is the reply email address from the Reply Address header field of a scheduled email distribution. The size limit for mail reply address is 65 characters.

MailServer

Is an SMTP mail server name associated with scheduled email distribution. The size limit for mail server name is 65 characters.

MailSubject

Is an email subject corresponding to the Subject header field associated with scheduled email distribution. The size limit for mail subject is 90 characters.

AttachmentFlag

Specify one of the following options:

- True. The report is sent as an attachment.
- False. The report is sent within the body of the email.

SSLflag

Specify one of the following options:

- True. The Mail Server requires a secure SSL connection.
- False. The Mail Server does not require a secure SSL connection.

TLSflag

Specify one of the following options:

- True. The Mail Server requires a secure TLS connection.
False. The Mail Server does not require a secure TLS connection.

**ZipFileName**

Is the name of the zip file associated with a scheduled email distribution. ZipFlag should be set to true. The size limit for a zip file name is 64 characters.

**ZipFlag**

Specify one of the following options:

- True. The output is zipped.
- False. The output is not zipped.

**DistFile**

Is a list of one or many recipients stored within a physical file accessible to the Distribution Server. The Type must be set to DISTRIBUTION_FILE.

**DistPath**

Is the full path to a ReportCaster Address Book which lists one or many recipients. For example:

`IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_List.adr`

The Type must be set to DISTRIBUTION_LIST.

**SingleAddress**

Are email addresses of the report recipients.

When the email addresses are separated by a comma (,) character, the report is distributed in one email.

When the email addresses are separated by a semicolon (;) character, the report is distributed in multiple emails (one address per email).

The Type must be set to SINGLE_ADDRESS.

**Type**

Is one of the following valid values:

- DISTRIBUTION_FILE
- DISTRIBUTION_LIST
- DYNAMIC_ADDRESS
- SINGLE_ADDRESS
Password
Is the value of the password required for authentication to the Reporting Server containing the WebFOCUS procedure that creates the dynamic distribution list.
Type must be set to DYNAMIC_ADDRESS.

ProcedureName
Is the name of the WebFOCUS procedure that produces the dynamic distribution list qualified by the application name. For example, ibisamp/getEmails.
Type must be set to DYNAMIC_ADDRESS.

ServerName
Is the name of the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.
Type must be set to DYNAMIC_ADDRESS.

UserName
Is the user ID to the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.
Type must be set to DYNAMIC_ADDRESS.

FTP
This is used to distribute a scheduled ReportCaster report through FTP.

Body Format:

```xml
<distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
  <item compressionFormat="CompressionFormat" description="DistributionName" enabled="true" ftpLocation="FTPlocation" ftpPassword="FTPpass" ftpServerName="FTPserver" ftpUserName="FTPuser" index="0" indexFile="IndexFile" passwordAuthEnabled="passwordFlag" publicKeyAuthEnabled="publicFlag" sftpEnabled="SFTPflag" zipBurstReportsTogether="ZipBurstTogether" zipFileName="ZipFileName" zipResult="ZipResult">
    <destination _jt="CasterScheduleDestination" distributionFile="DistFile" distributionListFullPath="DistPath" singleAddress="SingleFile" type="Type">
      <dynamicAddress _jt="CasterScheduleDynamicAddress" password="Password" procedureName="ProcedureName" serverName="ServerName" userName="UserName"/>
    </destination>
  </item>
</distributionList>`
where:

CompressionFormat

Are the options to compress the output before distribution. You can choose from either of the following:

- **0.** Choose this option if you want an archive file (.zip), a compressed file (.zip), or no compression.
- **1.** Choose this option if you want a compressed file (.gz).

DistributionName

Is a name that is assigned to the distribution (for example, FTP).

FTPlocation

Is the root directory for a report scheduled for distribution through FTP. The report will be sent to this target destination through FTP unless a Distribution List bursts sections of the report to subdirectories of this FTPlocation directory.

FTPpass

Is the password to the target FTP server needed to authenticate at the time of report distribution. The FTP password is part of the credentials necessary for the user to access the FTP server.

FTPserver

Is the name of the FTP server that is the target of the distribution.

FTPUser

Is the user name needed to authenticate to the target FTP server at the time of report distribution. The FTP user name is part of the credentials necessary for the user to have access to the FTP server.

IndexFile

Specifies the index file associated with report(s) scheduled for distribution through FTP, where bursting is activated. When bursting is activated, the index file specifies the name of the file where the corresponding index page will be created.

If bursting is activated (Burst=TRUE), and no index file is specified, the index file name is set to index.htm.

**Note.** It makes sense to burst a report in cases where the distribution type is: DISTRIBUTION LIST, DISTRIBUTION FILE, and DYNAMIC LIST. In the case where distribution type is SINGLE ADDRESS, there is no need to burst because the reports will be sent to a single address.
passwordFlag

Is the password authentication. If SFTPflag equals true, specify one of the following options:

- True. Password authentication is enabled.
- False. Password authentication is disabled.

publicFlag

Is the Public Key authentication. If SFTPflag is set to true, specify one of the following options:

- True. Public Key authentication is enabled.
- False. Public Key authentication is disabled.

SFTPflag

If set to true, the FTP server requires a secure SSH File Transfer Protocol (SFTP).

If set to false, the FTP server does not require a secure SSH File Transfer Protocol (SFTP).

ZipBurstTogether

Is the option to use a .zip for compression. If set to true, and when ZipResult equals true, an archive .zip file is created before distribution.

If set to false, and when ZipResult is set to true, a compressed .zip file is created before distribution.

The value will also be set to false if no compression is required or CompressionFormat is set to 1.

ZipFileName

Is the file name that will contain an archive or compressed .zip file.

CompressionFormat would be set to 0 and ZipResult would be set to true.

ZipResult

Is the option to use a compressed file. If set to true, an archive or compressed .zip file is created before distribution. A compressed .gz file is created before distribution. CompressionFormat sets the type of compression and ZipBurstTogether sets whether an archive or compressed .zip file is created before distribution.

If set to false, no compression will occur before distribution.
**DistFile**

Is a list of one or many locations stored within a physical file accessible to the Distribution Server.

*Type* must be set to DISTRIBUTION_FILE.

**DistPath**

Is the full path to a ReportCaster Address Book which lists one or many locations. For example, IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_List.adr.

*Type* must be set to DISTRIBUTION_LIST

**SingleFile**

Is the single file name used if distribution is set to one location.

*Type* must be set to SINGLE_ADDRESS.

**Type**

The following is a list of valid values:

- DISTRIBUTION_FILE
- DISTRIBUTION_LIST
- DYNAMIC_ADDRESS
- SINGLE_ADDRESS

**Password**

Is the value of the password required for authentication to the Reporting Server containing the WebFOCUS procedure that creates the dynamic distribution list.

*Type* must be set to DYNAMIC_ADDRESS.

**ProcedureName**

Is the name of the WebFOCUS procedure that produces the dynamic distribution list qualified by the application name. For example, ibisamp/getEmails.

*Type* must be set to DYNAMIC_ADDRESS.

**ServerName**

Is the name of the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.

*Type* must be set to DYNAMIC_ADDRESS.
UserName

Is the user ID to the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.

Type must be set to DYNAMIC_ADDRESS.

Printer

This is used when the intended distribution method for the scheduled ReportCaster job is through a printer.

When using this distribution, the report format in the Task (SendFormat) must be set to either DOC, WP, PS or PDF (if the printer you are using supports PDF output sent without Adobe).

Body Format:

```xml
<distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
  <item description="DistributionName" enabled="true" index="0">
    <destination _jt="CasterScheduleDestination"
      distributionFile="DistFile" distributionListFullPath="DistPath"
      singleAddress="SinglePrinter" type="Type">
      <dynamicAddress _jt="CasterScheduleDynamicAddress"
        password="Password" procedureName="ProcedureName"
        serverName="ServerName" userName="UserName"/>
    </destination>
  </item>
</distributionList>
```

where:

DistributionName

Is a name that is assigned to the distribution (for example, Printer).

DistFile

Is a list of one or many printers stored within a physical file accessible to the Distribution Server.

Type must be set to DISTRIBUTION_FILE.

DistPath

Is the full path to a ReportCaster Address Book which lists one or many printers. For example, IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_List.adr.

Type must be set to DISTRIBUTION_LIST.

SinglePrinter

Is the single printer to print the distributed report. Type must be set to SINGLE_ADDRESS.
Type

The following is a list of valid values:

- DISTRIBUTION_FILE
- DISTRIBUTION_LIST
- DYNAMIC_ADDRESS
- SINGLE_ADDRESS

Password

Is the value of the password required for authentication to the Reporting Server containing the WebFOCUS procedure that creates the dynamic distribution list.

Type must be set to DYNAMIC_ADDRESS.

ProcedureName

Is the name of the WebFOCUS procedure that produces the dynamic distribution list qualified by the application name. For example, ibisamp/getEmails.

Type must be set to DYNAMIC_ADDRESS.

ServerName

Is the name of the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.

Type must be set to DYNAMIC_ADDRESS.

UserName

Is the user ID to the Reporting Server that contains the WebFOCUS procedure that creates the dynamic distribution list.

Type must be set to DYNAMIC_ADDRESS.

WebFOCUS Repository

This is used when the intended distribution method for the scheduled ReportCaster job is to store the output in the WebFOCUS Repository.

Body Format:

```xml
<distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
  <item description="DistributionName" enabled="true" folderName="FolderPath"
    index="0"/>
</distributionList>
```
where:

**DistributionName**

Is a name that is assigned to the distribution (for example, WebFOCUS Repository).

**FolderName**

Is the full path to the WebFOCUS Repository folder where the report will be stored. For example, IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports.

**Recurrence**

There are seven recurrence types to choose from when creating a ReportCaster Schedule:

- Run Once
- Minutes
- Hourly
- Daily
- Weekly
- Monthly
- Yearly

**Run Once**

This is used to schedule jobs that are to run only once.

```xml
<timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
  <item description="" enabled="true" index="0" name="">
    <startTime _jt="calendar" time="StartTime"/>
  </item>
</timeInfoList>
```

where:

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).
Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

Minutes

This is used to schedule jobs that run in intervals of minutes.

Body Format:

```xml
<item disabled="false" type="2" name="" description=""
index="0" class="ibi.broker.api.data.schedule.TimeInfoMinute"
wednesday="WednesdayFlag" tuesday="TuesdayFlag" thursday="ThursdayFlag"
sunday="SundayFlag" saturday="SaturdayFlag" monday="MondayFlag"
friday="FridayFlag" frequency="Frequency">
  <nextRunTime _jt="calendar" time="nextRunTime"/>
  <startTime _jt="calendar" time="StartTime"/>
  <endTime _jt="calendar" time="EndTime"/>
</item>
```

where:

**Frequency**

Is the frequency for a scheduled event in minutes.

For example, if an email report distribution is set to run every, five minutes, the frequency would be 5.

**FridayFlag**

Determines whether or not the ReportCaster job is scheduled for a Friday. If set to true, the job will run on a Friday.

**MondayFlag**

Determines whether or not the ReportCaster job is scheduled for a Monday. If set to true, the job will run on a Monday.

**SaturdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Saturday. If set to true, the job will run on a Saturday.

**SundayFlag**

Determines whether or not the ReportCaster job is scheduled for a Sunday. If set to true, the job will run on a Sunday.

**ThursdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Thursday. If set to true, the job will run on a Thursday.
**TuesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Tuesday. If set to `true`, the job will run on a Tuesday.

**WednesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Wednesday. If set to `true`, the job will run on a Wednesday.

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**EndTime**

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

**Hourly**

This is used to schedule jobs that run in intervals of hours.

**Body Format:**
where:

**Frequency**

Is the frequency for a scheduled event in hours.

For example, if an email report distribution is set to run every five hours, the frequency would be 5.

**FridayFlag**

Determines whether or not the ReportCaster job is scheduled for a Friday. If set to *true*, the job will run on a Friday.

**MondayFlag**

Determines whether or not the ReportCaster job is scheduled for a Monday. If set to *true*, the job will run on a Monday.

**SaturdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Saturday. If set to *true*, the job will run on a Saturday.

**SundayFlag**

Determines whether or not the ReportCaster job is scheduled for a Sunday. If set to *true*, the job will run on a Sunday.

**ThursdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Thursday. If set to *true*, the job will run on a Thursday.

**TuesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Tuesday. If set to *true*, the job will run on a Tuesday.

**WednesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Wednesday. If set to *true*, the job will run on a Wednesday.
**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**EndTime**

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

**Daily**

This is used to schedule jobs that run in intervals of days.

**Body Format:**

```
<timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
  <item description="" enabled="true" frequency="Frequency" index="0" name="">
    <startTime _jt="calendar" time="StartTime"/>
    <endTime _jt="calendar" time="EndTime"/>
    <secondaryRunInterval _jt="CasterScheduleTimeInterval" duration="Duration" interval="Interval" isEnabled="SecondaryIntervalFlag"><untilTime _jt="calendar" time="UntilTime"/></secondaryRunInterval>
  </item>
</timeInfoList>
```
Frequency
Is the frequency for a scheduled event in days. For example, if an email report distribution is set to run every five days, the frequency would be 5.

StartTime
Is the start time designated as the first time a new Schedule is set to run. Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

EndTime
Is the end time designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

Duration
Is the duration of SecondaryIntervalFlag. If SecondaryIntervalFlag is set to true, the duration specified in minutes during which the time interval will be applied. UntilTime must equal 18000000.

Interval
Is the time interval in minutes. If SecondaryIntervalFlag is set to true, the time interval is applied every n minutes.

SecondaryIntervalFlag
Is the time interval settings. If set to true, the time Interval settings are active. If set to false, the time Interval settings are inactive.
**UntilTime**

Is the end time of the time interval. If `SecondaryIntervalFlag` set to `true`, the end time for which the time interval will be applied. Duration must be set to `-1`.

The end time of the interval is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

It does not matter which date is used as only the time portion will be used in setting the end time for the time interval.

Typically, the date the Schedule is created or updated is used in setting `UntilTime`.

Three zeros are appended to the Unix Time to represent milliseconds.

The end time of the interval should also be expressed in UTC (Coordinated Universal Time).

For example, October 19, 2012, 20:38:00 UTC converts to 1350679080000. October 19, 2012 will be ignored when setting the end time of the interval.

**Weekly**

This is used to schedule jobs that run in intervals of weeks.

**Body Format:**

```xml
<timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
  <item _jt="CasterScheduleTimeInfoWeek" description="" enabled="true"
    frequency="Frequency" friday="FridayFlag" index="0"
    monday="MondayFlag" name="" saturday="SaturdayFlag"
    sunday="SundayFlag" thursday="ThursdayFlag"
    tuesday="TuesdayFlag" wednesday="WednesdayFlag">
    <startTime _jt="calendar" time="StartTime"/>
    <endTime _jt="calendar" time="EndTime"/>
    <secondaryRunInterval _jt="CasterScheduleTimeInterval"
      duration="Duration" interval="Interval"
      isEnabled="SecondaryIntervalFlag"><untilTime _jt="calendar"
      time="UntilTime"></secondaryRunInterval
  </item>
</timeInfoList>
```

**Frequency**

Is the frequency for a scheduled event in weeks.

For example, if an email report distribution is set to run every five weeks, the frequency would be 5.
**FridayFlag**

Determines whether or not the ReportCaster job is scheduled for a Friday. If set to true, the job will run on a Friday.

**MondayFlag**

Determines whether or not the ReportCaster job is scheduled for a Monday. If set to true, the job will run on a Monday.

**SaturdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Saturday. If set to true, the job will run on a Saturday.

**SundayFlag**

Determines whether or not the ReportCaster job is scheduled for a Sunday. If set to true, the job will run on a Sunday.

**ThursdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Thursday. If set to true, the job will run on a Thursday.

**TuesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Tuesday. If set to true, the job will run on a Tuesday.

**WednesdayFlag**

Determines whether or not the ReportCaster job is scheduled for a Wednesday. If set to true, the job will run on a Wednesday.

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.
EndTime

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

Duration

Is the duration of SecondaryIntervalFlag. If SecondaryIntervalFlag is set to true, the duration specified in minutes during which the time interval will be applied. UntilTime must be set to 18000000.

Interval

Is the time interval in minutes. If SecondaryIntervalFlag is set to true, the time interval is applied every n minutes.

SecondaryIntervalFlag

Are the time interval settings. If true, the time Interval settings are active. If set to false, the time Interval settings are inactive.

UntilTime

Is the end time of the time interval. If SecondaryIntervalFlag is set to true, the end time for which the time interval will be applied. Duration must set to -1.

The end time of the interval is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

It does not matter which date is used as only the time portion will be used in setting the end time for the time interval.

Typically, the date the Schedule is created or updated is used in setting UntilTime.

Three zeros are appended to the Unix Time to represent milliseconds.

The end time of the interval should also be expressed in UTC (Coordinated Universal Time).

For example, October 19, 2012, 20:38:00 UTC converts to 1350679080000. October 19, 2012 will be ignored when setting the end time of the interval.
Monthly

This is used to schedule jobs that run in intervals of months.

**Body Format:**

```xml
<timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
  <item dayOfWeek="DayOfWeek" dayOfWeekEnabled="DayOfWeekEnabled" description="" enabled="true" frequency="Frequency" index="0" lastDayOfMonth="LastDayOfMonth" name="" type="5" weekOfMonth="WeekOfMonth">
    <startTime _jt="calendar" time="StartTime"/>
    <endTime _jt="calendar" time="EndTime"/>
    <daysOfMonth _jt="array" size="31">
      <item _jt="boolval" index="0" value="false"/>
      <item _jt="boolval" index="1" value="false"/>
      <item _jt="boolval" index="2" value="false"/>
      <item _jt="boolval" index="3" value="false"/>
      <item _jt="boolval" index="4" value="false"/>
      <item _jt="boolval" index="5" value="false"/>
      <item _jt="boolval" index="6" value="false"/>
      <item _jt="boolval" index="7" value="false"/>
      <item _jt="boolval" index="8" value="false"/>
      <item _jt="boolval" index="9" value="false"/>
      <item _jt="boolval" index="10" value="false"/>
      <item _jt="boolval" index="11" value="false"/>
      <item _jt="boolval" index="12" value="false"/>
      <item _jt="boolval" index="13" value="false"/>
      <item _jt="boolval" index="14" value="false"/>
      <item _jt="boolval" index="15" value="false"/>
      <item _jt="boolval" index="16" value="false"/>
      <item _jt="boolval" index="17" value="false"/>
      <item _jt="boolval" index="18" value="false"/>
      <item _jt="boolval" index="19" value="false"/>
      <item _jt="boolval" index="20" value="false"/>
      <item _jt="boolval" index="21" value="false"/>
      <item _jt="boolval" index="22" value="false"/>
      <item _jt="boolval" index="23" value="false"/>
      <item _jt="boolval" index="24" value="false"/>
      <item _jt="boolval" index="25" value="false"/>
      <item _jt="boolval" index="26" value="false"/>
      <item _jt="boolval" index="27" value="false"/>
      <item _jt="boolval" index="28" value="false"/>
      <item _jt="boolval" index="29" value="false"/>
      <item _jt="boolval" index="30" value="false"/>
    </daysOfMonth>
    <secondaryRunInterval _jt="CasterScheduleTimeInterval" duration="Duration" interval="Interval" isEnabled="SecondaryIntervalFlag">
      <untilTime _jt="calendar" time="UntilTime"/>
    </secondaryRunInterval>
  </item>
</timeInfoList>
```
where:

DayOfWeek

Is the day of the week for the report to run. DayOfWeekEnabled must be set to true. The following list shows the valid values:

- 1. Sunday
- 2. Monday
- 3. Tuesday
- 4. Wednesday
- 5. Thursday
- 6. Friday
- 7. Saturday

DayOfWeekEnabled

Is the day of the week or day of the month to be set. If set to true, the DayOfWeek and WeekOfMonth must be set.

If set to false, the DaysOfMonth and/or LastDayOfMonth must be set.

Frequency

Is the frequency for a scheduled event in months. For example, if an email report distribution is set to run every 2 months, the frequency would be 2.

LastDayOfMonth

Is an indicator whether or not the last day of the month flag is set. When this flag is set to true, ReportCaster runs a Schedule on the last day of the month regardless of what day it is.

For example, a Schedule set to run on February 28th will next run on March 31st if this flag is set to true. Otherwise, ReportCaster will run the job on the corresponding day of the next month.

If this flag is set to false then it will run the report on March 28th. If the corresponding day of the next month does not exist, then ReportCaster will not run the report.
**WeekOfMonth**

Week of the month for the report to run. `DayOfWeekEnabled` must be set to `true`. The following list shows the valid values.

- **1. First week**
- **2. Second week**
- **3. Third week**
- **4. Fourth week**
- **5. Last week**

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**EndTime**

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

**daysOfMonth**

Is a 31 element array indicating which days of the month have been selected for a report to run. All array members are initialized to `false`.

Each array member has an index attribute associated with it.
The index starts at 0 and increments by 1 for each successive day of the month. For example, index=0 equates to the first day of the month.

Those members of the array that are then set to true are the days of the month the Schedule will run. DayOfWeekEnabled must be set to false.

**Duration**

Is the duration of SecondaryIntervalFlag. If SecondaryIntervalFlag is set to true, the duration specified in minutes during which the time interval will be applied. UntilTime must be set to 18000000.

**Interval**

Is the time interval in minutes. If SecondaryIntervalFlag is set to true, the time interval is applied every n minutes.

**SecondaryIntervalFlag**

Are the time interval settings. If set to true, the time Interval settings are active. If set to false, the time Interval settings are inactive.

**UntilTime**

Is the end time of the time interval. If SecondaryIntervalFlag is set to true, the end time for which the time interval will be applied. Duration must be set to -1.

The end time of the interval is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

It does not matter which date is used as only the time portion will be used in setting the end time for the time interval.

Typically, the date the Schedule is created or updated is used in setting UntilTime. Three zeros are appended to the Unix Time to represent milliseconds.

The end time of the interval should also be expressed in UTC (Coordinated Universal Time).

For example, October 19, 2012, 20:38:00 UTC converts to 1350679080000. October 19, 2012 will be ignored when setting the end time of the interval.

**Yearly**

This is used to schedule jobs that run in intervals of years.

**Body Format:**
<timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
  <item description="" enabled="true" frequency="Frequency" index="0"
    name="">
    <startTime _jt="calendar" time="StartTime"/>
    <endTime _jt="calendar" time="EndTime"/>
    <secondaryRunInterval _jt="CasterScheduleTimeInterval"
      duration="Duration" interval="Interval"
      isEnabled="SecondaryIntervalFlag">
      <untilTime _jt="calendar" time="UntilTime"/>
    </secondaryRunInterval>
  </item>
</timeInfoList>

where:

**Frequency**

Is the frequency for a scheduled event in years.

For example, if an email report distribution is set to run every year, the frequency would be 1.

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**EndTime**

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.
**Duration**

Is the duration of `SecondaryIntervalFlag`. If `SecondaryIntervalFlag` is set to `true`, the duration specified in minutes during which the time interval will be applied. `UntilTime` must be set to 18000000.

**Interval**

Is the time interval in minutes. If `SecondaryIntervalFlag` is set to `true`, the time interval is applied every \( n \) minutes.

**SecondaryIntervalFlag**

Are the time interval settings. If set to `true`, the time Interval settings are active. If set to `false`, the time Interval settings are inactive.

**UntilTime**

Is the end time of the time interval. If `SecondaryIntervalFlag` is set to `true`, the end time for which the time interval will be applied. Duration must be set to -1.

The end time of the interval is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).

It does not matter which date is used as only the time portion will be used in setting the end time for the time interval.

Typically, the date the Schedule is created or updated is used in setting `UntilTime`.

Three zeros are appended to the Unix Time to represent milliseconds.

The end time of the interval should also be expressed in UTC (Coordinated Universal Time).

For example, October 19, 2012, 20:38:00 UTC converts to 1350679080000. October 19, 2012 will be ignored when setting the end time of the interval.

**Custom**

This is used to schedule jobs that run on specific dates.

**Body Format:**
where:

**StartTime**

Is designated as the first time a new Schedule is set to run.

Creating a new Schedule and altering any jobs that are to run in the future will create an entirely new start time.

The default start time is the current time.

The start time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The start time should also be expressed in UTC (Coordinated Universal Time).

For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**EndTime**

Is designated as the last time a Schedule is set to run.

The end time is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).

Three zeros are appended to the Unix Time to represent milliseconds.

The end time should also be expressed in UTC (Coordinated Universal Time).

For example, December 31, 2013, 15:00:00 UTC converts to 1388502000000.

**dateList**

Is an item array indicating which days have been selected for a report to run.
Each item has an index attribute associated with it. The index starts at 0 and increments by 1 for each date. Each item has date associated with it. (for example, date1, date2).
The date is expressed in Unix Time (number seconds that has elapsed since January 1, 1970, 00:00:00).
Three zeros are appended to the Unix Time to represent milliseconds.
The date should also be expressed in UTC (Coordinated Universal Time).
For example, December 17, 2012, 15:00:00 UTC converts to 1355756400000.

**numberOfItems**
Is the number of dates that will be defined for the schedule to run.

**Duration**
Is the duration of **SecondaryIntervalFlag**. If **SecondaryIntervalFlag** is set to `true`, the duration specified in minutes during which the time interval will be applied. **UntilTime** must be set to 18000000.

**Interval**
Is the time interval in minutes. If **SecondaryIntervalFlag** is set to `true`, the time interval is applied every \( n \) minutes.

**SecondaryIntervalFlag**
Are the time interval settings. If set to `true`, the time Interval settings are active. If set to `false`, the time Interval settings are inactive.

**UntilTime**
Is the end time of the time interval. If **SecondaryIntervalFlag** is set to `true`, the end time for which the time interval will be applied. Duration must be set to -1.
The end time of the interval is expressed in Unix Time (number seconds that has elapsed since January 1 1970, 00:00:00).
It does not matter which date is used as only the time portion will be used in setting the end time for the time interval.
Typically, the date the Schedule is created or updated is used in setting **UntilTime**.
Three zeros are appended to the Unix Time to represent milliseconds.
The end time of the interval should also be expressed in UTC (Coordinated Universal Time).
For example, October 19, 2012, 20:38:00 UTC converts to 1350679080000. October 19, 2012 will be ignored when setting the end time of the interval.

**Task**

There are five task types to choose from when creating a ReportCaster Schedule:

- WebFOCUS Report
- WebFOCUS Server Procedure
- File
- FTP
- URL

**WebFOCUS Report**

WebFOCUS Report enables you to schedule the distribution of reports that reside specifically within the WebFOCUS Repository. You can associate an alert with the report which allows you to schedule actions that are contingent upon specific alert conditions being triggered. If the report to be run is not an alert, the alert tag in the XML is not required.

**Body Format:**

```xml
<taskList _jt="array" itemsClass="CasterScheduleTask" size="1">
  <item alertEnabled="AlertFlag" burst="BurstFlag" 
    description="TaskDescription" domainHREF="" enabled="true"
    execId="ServerUserId"
    execPassword="ServerPassword"
    firstPostProcessingProcedure="FirstPostProcedure"
    firstPreProcessingProcedure="FirstPreProcedure" index="0"
    procedureDescription="" procedureName="ProcedureName"
    reportName="ReportName"
    
    secondPostProcessingProcedure="SecondPostProcedure"
    secondPreProcessingProcedure="SecondPreProcedure"
    sendFormat="SendFormat" serverName="ServerName">
      <parameterList _jt="array" itemsClass="CasterScheduleParameter"
        size="NumberOfParameters">
        <item _jt="CasterScheduleParameter" enabled="true" index="IndexValue"
          name="ParameterName"
          value="ParameterValue"/>
      </parameterList>
      <alert resetInterval="ResetInterval" resetType="ResetType"/>
    </item>
</taskList>
```
where:

**AlertFlag**

Is the value that determines whether or not an alert is enabled. If set to `true`, the alert is enabled. If set to `false`, it is disabled.

**BurstFlag**

Is the value that specifies whether or not report bursting is enabled. Report bursting allows you to segment a report into sections based upon a primary sort field. The report segments are then distributed as separate reports by the Distribution Server. Access to these report segments is based upon burst values (specific values of the primary sort field) that are associated with email addresses in distribution lists or user IDs in Library Access Lists.

**TaskDescription**

Is the text used to describe the task. The maximum size for the description is 255 characters.

**ServerUserid**

Is the user name needed to establish a connection to the WebFOCUS Reporting Server. The user name is one of the credentials necessary for a user to access a WebFOCUS procedure that resides on the WebFOCUS Reporting Server during scheduling, as well as to run this procedure at the time the job is run.

This setting must have a value even if using an unsecured Reporting Server.

**ServerPassword**

Is the password needed to establish a connection to the WebFOCUS Reporting Server. The password is one of the credentials necessary for a user to access a WebFOCUS procedure that resides on the WebFOCUS Reporting Server during scheduling, as well as run this procedure at the time the job is run. This setting must have a value even if using an unsecured Reporting Server.

**FirstPostProcedure**

Is the name of the first of two possible post-processing procedures. Post-processing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously after the execution of their associated task. They are often used to reset computing or data environments.
**FirstPreProcedure**

Is the name of the first of two possible preprocessing procedures. Preprocessing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously prior the execution of their associated task. They are often used to set or test conditions before the running of reports.

**ProcedureName**

Is the full path to the WebFOCUS Report that is to be run. For example, IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_Report_by_Country.fex.

**ReportName**

The name of the file when sending the output as an attachment. The maximum size for report name is 64 characters.

**SecondPostProcedure**

Is the name of the second of two possible post-processing procedures. Post-processing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously after the execution of their associated task. They are often used to reset computing or data environments.

**SecondPreProcedure**

Is the name of the second of two possible preprocessing procedures. Preprocessing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously prior the execution of their associated task. They are often used to set or test conditions before the running of reports.

**SendFormat**

Is the report format that will be generated by the WebFOCUS Reporting Server. For example, PDF, HTML, AHTML, EXL07, DFIX DELIMITER, and COM.

**ServerName**

Is the name of the WebFOCUS Reporting Server used to run the WebFOCUS reports and procedures associated with this task.

**NumberOfParameters**

Is the number of parameters that are to be passed to the WebFOCUS Report.

**IndexValue**

Is a value that starts at 0 and increments by 1 for every parameter that is to be sent to the WebFOCUS Report.
ParameterName

Is the name of a parameter passed to the WebFOCUS report. The maximum length of the name field is 64 characters.

ParameterValue

Is the value of a parameter associated with the ParameterName passed to the WebFOCUS report. The maximum length of the value field is 255 characters.

ResetInterval

If AlertFlag is set to true, ResetInterval represents the time interval (delay) between when an alert Schedule is run upon being triggered and when it is reactivated. The actual time period is based on the ResetType.

For example, if the ResetType is HOUR, a specified reset interval of three would represent a three hour delay.

ResetType

The following list shows the valid values for ResetType if AlertFlag is set to true.

- MINUTE
- HOUR
- DAY
- WEEK
- MONTH
- YEAR
- CONTINUE. Reactivate the alert immediately.
- AUTO. Reactivate the alert when the condition is no longer true.
- TERMINATE. Deactivate the Schedule.

WebFOCUS Server Procedure

The WebFOCUS Server Procedure allows you to schedule the distribution of reports that reside specifically on a WebFOCUS Reporting Server. A WebFOCUS Server procedure is a WebFOCUS report (FOCEXEC) residing on a WebFOCUS Reporting Server that is accessible to the Distribution Server.

Body Format:
where:

**BurstFlag**

Is the value that specifies whether or not report bursting is enabled. Report bursting allows you to segment a report into sections based upon a primary sort field. The report segments are then distributed as separate reports by the Distribution Server. Access to these report segments is based upon burst values (specific values of the primary sort field) that are associated with email addresses in distribution lists or user IDs in Library Access Lists.

**TaskDescription**

Is the text used to describe the task. The maximum size for the description is 255 characters.

**ServerUserid**

Is the user name needed to establish a connection to the WebFOCUS Reporting Server. The user name is one of the credentials necessary for a user to access a WebFOCUS procedure that resides on the WebFOCUS Reporting Server during scheduling, as well as to run this procedure at the time the job is run. This setting must have a value even if using an unsecured Reporting Server.

**ServerPassword**

Is the password needed to establish a connection to the WebFOCUS Reporting Server. The password is one of the credentials necessary for a user to access a WebFOCUS procedure that resides on the WebFOCUS Reporting Server during scheduling, as well as run this procedure at the time the job is run.
**FirstPostProcedure**

Is the name of the first of two possible post-processing procedures. Post-processing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously after the execution of their associated task. They are often used to reset computing or data environments.

**FirstPreProcedure**

Is the name of the first of two possible preprocessing procedures. Preprocessing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously prior the execution of their associated task. They are often used to set or test conditions before the running of reports.

**ProcedureName**

Is the full path to the WebFOCUS Server Procedure Report that is to be run. For example, ibisamp/carinst.

**ReportName**

Is the name of the file when sending the output as an attachment. The maximum size for report name is 64 characters.

**SecondPostProcedure**

Is the name of the second of two possible post-processing procedures. Post-processing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously after the execution of their associated task. They are often used to reset computing or data environments.

**SecondPreProcedure**

Is the name of the second of two possible preprocessing procedures. Preprocessing procedures (available for WebFOCUS Server procedure and WebFOCUS Report) are non-reporting WebFOCUS procedures that run synchronously prior the execution of their associated task. They are often used to set or test conditions before the running of reports.

**SendFormat**

Is the report format that will be generated by the WebFOCUS Reporting Server. For example, PDF, HTML, AHTML, EXL07, DFIX DELIMITER, and COM.

**ServerName**

Is the name of the WebFOCUS Reporting Server used to run the WebFOCUS procedures associated with this task.
**NumberofParameters**

Is the number of parameters that are to be passed to the WebFOCUS Report.

**IndexValue**

Is a value that starts at 0 and increments by 1 for every parameter that is to be sent to the WebFOCUS Report.

**ParameterName**

Is the name of a parameter passed to the WebFOCUS report. The maximum length of the name field is 64 characters.

**ParameterValue**

Is the value of a parameter associated with the ParameterName passed to the WebFOCUS report. The maximum length of the value field is 255 characters.

**File**

This allows you to schedule the distribution of a file, represented by a fully qualified path, to which the ReportCaster Distribution Server has read access.

**Body Format:**

```xml
<taskList _jt="array" itemsClass="CasterScheduleTask" size="1">
  <item deleteFileAfterRetrieval="DeleteFile" description="TaskDescription" enabled="true" index="0" procedureName="FileLocation" reportName="ReportName"/>
</taskList>
```

where:

**DeleteFile**

Is used to either delete or not delete the file.

If set to `true`, the file is deleted, as identified by `ProcedureName`, after it is distributed.

If set to `false`, the file is not deleted, as identified by `ProcedureName`, after it is distributed.

**TaskDescription**

Is the text used to describe the task. The maximum size for the description is 255 characters.

**FileLocation**

Is the full path to the file being distributed. For example, `C:\Documentation\HTML\REST_Documentation_version_2.html`. 
ReportName

Is the name of the file when sending the output as an attachment.

FTP

FTP allows you to schedule the distribution of a file that resides on any FTP Server.

Body Format:

```xml
<taskList _jt="array" itemsClass="CasterScheduleTask" size="1">
  <item deleteAfterRetrieval="DeleteFile" description="TaskDescription" enabled="true" index="0" password="FTPpass"
    passwordAuthEnabled="passwordFlag" procedureName="FileLocation"
    publicKeyAuthEnabled="publicFlag" reportName="ReportName"
    sendFormat="SendFormat"
    serverName="FTPserver" sftpEnabled="SFTPflag" userName="FTPuser"/>
</taskList>
```

where:

DeleteFile

Is used to either delete or not delete the file.

If set to true, the file is deleted, as identified by ProcedureName, after it is distributed.

If set to false, the file is not deleted, as identified by ProcedureName, after it is distributed.

TaskDescription

Is the text used to describe the task. The maximum size for the description is 255 characters.

FTPpass

Is the password needed to authenticate to the FTP server. The FTP password is part of the credentials necessary for the Distribution Server to access the FTP server.

passwordFlag

Is the password authentication.

If SFTPflag is set to true, and passwordFlag is set to true, then the password authentication is enabled.

If SFTPflag is set to true, and passwordFlag is set to false, then the password authentication is disabled.

FileLocation

Is the full path to the file being distributed. For example, outgoing\HTML \REST_Documentation_version_2.html.
publicFlag

Is the Public Key authentication.

If SFTPflag equals true, and passwordFlag is set to true, then the Public Key authentication is enabled.

If SFTPflag equals true, and passwordFlag is set to false, then the Public Key authentication is disabled.

ReportName

Is the name of the file when sending the output as an attachment.

SendFormat

Is the report format that will be generated by the WebFOCUS Reporting Server. For example, PDF, HTML, AHTML, EXL07, DFIX DELIMITER, and COM.

FTPserver

Is the name of the FTP server where the file being distributed exists.

SFTPflag

Is the secure SSH File Transfer Protocol (SFTP).

If set to true, the FTP server requires a secure SSH File Transfer Protocol (SFTP).

If set to false, the FTP server does not require a secure SSH File Transfer Protocol (SFTP).

FTPuser

The user name needed to authenticate to the FTP server. The FTP password is part of the credentials necessary for the Distribution Server to access the FTP server.

URL

This allows ReportCaster to connect to a specified URL at execution time, retrieve the pages returned by that URL and distributes them. This task can be used to call any type of URL, including programs that are executed by JSP and ASP pages, as well as reports generated by other reporting products.

Body Format:
where:

**TaskDescription**

Is the text used to describe the task. The maximum size for the description is 255 characters.

**Password**

Is the value of the password necessary for access to the web server of the URL. This password is submitted within the HTTP header.

**ReportName**

Is the name of the file when sending the output as an attachment.

**URLstring**

Is the URL of the webpage to be distributed.

**Username**

Is the value of the user name necessary for access to the web server of the URL. This user name is submitted within the HTTP header.

**IndexValue**

Is a value that starts at 0 and increments by 1 for every parameter that is to be sent to the webpage.

**ParameterName**

Is the name of a parameter passed to the webpage. The maximum length of the name field is 64 characters.

**ParameterValue**

Is the value of a parameter associated with the ParameterName passed to the webpage. The maximum length of the value field is 255 characters.

**Closing Tag**

The following closing tag must be used:
**Example 1: Creating a Schedule**

This example creates a Schedule called REST_Schedule that runs the Sales_Report_by_Country WebFOCUS report once on December 17th, 2012 at 15:00:00 UTC and distributes the output to the Report Library. The report will run with the COUNTRY parameter set to ENGLAND and the DEALER_COST parameter set to 10000.

**POST Request URL Format:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch

**Body Format:**

IBIRS_action=put&IBIRS_replace=false&IBIRS_object=
<rootObject _jt="IBFSCasterObject" description="Schedule Created through REST" type="CasterSchedule">
  <casterObject _jt="CasterSchedule" active="true" deleteJobAfterRun="false" description="Schedule Created through REST" owner="admin" priority="3" traceType="0">
    <notification _jt="CasterScheduleNotification" addressForBriefNotification="" addressForFullNotification="" description="" from="" subject="" type="INACTIVE"/>
    <distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
      <item accessListFullPath="" accessType="OWNER" category="" compressionEnabled="false" description="Report Library" destinationPath="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports" enabled="true" expirationData="1" expirationMode="N" index="0" valueonly="false">
        <storageLibraryEmail authEnabled="false" authPassword="" authUserId="" libraryURL="http://localhost:8080/ibi_apps/library/report.rc" mailFrom="" mailMessage="" mailReplyAddress="" mailServerName="ibismtp.ibi.com" mailSubject="" sendEmailAfterSaveReport="false" sslEnabled="false" tlsEnabled="false"/>
      </item>
    </distributionList>
    <timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
      <item description="" enabled="true" index="0" name="" startTime _jt="calendar" time="1355756400000"/>
    </timeInfoList>
    <taskList _jt="array" itemsClass="CasterScheduleTask" size="1">
      <item alertEnabled="false" burst="true" description="Task 1" domainHREF="" enabled="true" execId="guest" execPassword="guest" firstPostProcessingProcedure="" firstPreProcessingProcedure="" index="0" procedureDescription="" procedureName="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_Report_by_Country.fex" reportName="car_sales.htm" secondPostProcessingProcedure="" secondPreProcessingProcedure="" sendFormat="HTML" serverName="EDASERVE">  
        <parameterList _jt="array" itemsClass="CasterScheduleParameter" size="2">
          <item parameter="COUNTRY" value="ENGLAND"/>
          <item parameter="DEALER_COST" value="10000"/>
        </parameterList>
      </item>
    </taskList>
  </casterObject>
</rootObject>
Response:
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="put" returncode="10000" returndesc="SUCCESS" subsystem="SSYS" type="simple">
<ibfsparams size="5">
<entry key="IBIRS_replace" value="false"/>
<entry key="IBIRS_private" value="__null"/>
<entry key="IBIRS_object" value="&lt;rootObject _jt="IBFSCasterObject" description="Schedule Created through REST" type="CasterSchedule">
&lt;casterObject _jt="CasterSchedule" active="true" deleteJobAfterRun="false" description="Schedule Created through REST" owner="admin" priority="3" traceType="0"&gt;
&lt;notification _jt="CasterScheduleNotification" addressForBriefNotification="" addressForFullNotification="" description="" from="" subject="" type="INACTIVE"&gt;
&lt;distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1"&gt;&lt;item accessListFullPath="" accessType="OWNER" category="" class="ibi.broker.api.data.schedule.StorageLibrary" compressionEnabled="false" description="Report Library" destinationPath="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports" enabled="true" expirationData="1" expirationMode="N" index="0" valueonly="false"&gt;
&lt;storageLibraryEmail authEnabled="false" authPassword="" authUserId="" class="ibi.broker.api.data.schedule.StorageLibraryEmail" libraryURL="http://localhost:8080/ibi_apps/library/report.rc" mailFrom="" mailMessage="" mailReplyAddress="" mailServerName="ibismtp.ibi.com" mailSubject="" mailReplyAddress="" sendEmailAfterSaveReport="false" sslEnabled="false"&gt;
&lt;timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1"&gt;&lt;item class="ibi.broker.api.data.schedule.TimeInfoOnce" description="" enabled="true" index="0" name="" startTime="calendar"&gt;
</ibfsrpc>
6. ReportCaster RESTful Web Service Requests

time="1355756400000"

<item>
  alertEnabled=false
  burst=true
  class=ibi.broker.api.data.schedule.TaskStandardReport
  description=Task 1
  domainHREF=""
  enabled=true
  execId=guest
  execPassword=guest
  firstPostProcessingProcedure=
  firstPreProcessingProcedure=
  index=0
  procedureDescription=
  procedureName=IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_Report_by_Country.fex
  reportName=car_sales.htm
  secondPostProcessingProcedure=
  secondPreProcessingProcedure=
  sendFormat=HTML
  serverName=EDASERVE
  itemsClass=ibi.broker.api.data.schedule.TaskStandardReport
  size=1
</item>

<item>
  enabled=true
  index=0
  name=COUNTRY
  value=ENGLAND
</item>

<item>
  enabled=true
  index=1
  name=DEALER_COST
  value=10000
</item>

<rootObject _jt="IBFSCasterObject" defaultLng="en_US" description="Schedule Created through REST" dummy="false" extension="sch"
  externalId="Sebc72ee3sd148s41ees8a8fs9c92340b99bb"
  fullPath="/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
  handle="9f013bcaI357fI4c69Ib7ceI1e96775f72cb"
  length="0"
  name="REST_Schedule.sch"
  policy="/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
  rsPath="/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
  type="CasterSchedule"
  fullPath="/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
  name="/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
</ibfsparams>

<nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
  <entry>
    <key _jt="string" value="en_US"/>
    <value _jt="ArrayList" size="1">
      <item _jt="string" index="0" value="Schedule Created through REST"/>
    </value>
  </entry>
</nlsValues>

<properties size="2">
  <entry key="id" value="Sebc72ee3sd148s41ees8a8fs9c92340b99bb"/>
  <entry key="tool" value="schedule"/>
<casterObject _jt="CasterSchedule" active="false" compressedReport="false" deleteJobAfterRun="false" description="Schedule Created through REST" destinationAddress="OWNER"
ibfsId="9f013bca1357f14c691b7ce1e96775f72cb"
ibfsPath="" id="Sebc72ee3sd148s41ees8a8fs9c92340b99bb" name=""
nextRunTime="disabled" notification="INACTIVE"
owner="admin"
policy="open,delete,rename,|,run,|,security;makeRules;viewRules" priority="3"
recurrence="0"
scheduleId="Sebc72ee3sd148s41ees8a8fs9c92340b99bb" scheduleTitle="Schedule Created through REST" sendMethod="LIBRARY"
statusLastExecuted="" summary="" taskType="1" traceType="0"><notification
      _jt="CasterScheduleNotification"
      addressForBriefNotification="" addressForFullNotification="" description="" from="" subject="" type="INACTIVE"/>
      <distributionList _jt="array" itemsClass="CasterScheduleDistribution" size="1">
        <item accessList="" accessListFullPath="" accessType="OWNER" category=""
          compressionEnabled="false" counter="0" description="Report Library"
destinationIbfsId="c60b1f9a_05ef_4e72_a737_e869917607db"
destinationPath="IBFS:/WFC/Repository/RESTful_Web_Services /Car_Reports" enabled="true" expirationData="1" expirationMode="N"
id="De465359cddf8fd41d2da9f3d1fd0080f2220" index="0" type="LIBRARY"
valueonly="false">
          <storageLibraryEmail authEnabled="false" authPassword="" authUserId=""
            libraryURL="http://localhost:8080/ibi_apps/library/report.rc"
            mailFrom="" mailMessage="" mailReplyAddress=""
            mailServerName="ibismtp.ibi.com" mailSubject=""
sendEmailAfterSaveReport="false" sslEnabled="false" tlsEnabled="false"/>
        </item>
      </distributionList>
      <timeInfoList _jt="array" itemsClass="CasterScheduleTimeInfo" size="1">
        <item description="" enabled="true" id="Iace3d44819197146111927di2969f6607559"
          index="0" name="" type="0">
          <nextRunTime _jt="calendar" time="1355756400000"/>
        </item>
      </timeInfoList>
    </casterObject>
If the value for the returncode attribute in the XML response is 10000, then the Schedule was successfully added.

**Example 2: Updating a Schedule**

This example updates a Schedule called REST_Schedule that runs the Sales_Report_by_Country WebFOCUS report once on December 17th, 2012 at 15:00:00 UTC and distributes the output to the Report Library. The report will run with the COUNTRY parameter set to ENGLAND and the DEALER_COST parameter set to 10000.

The following REST URL retrieves an existing Schedule:

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch?IBIRS_action=get
```

**POST Request URL Format:**

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch
```

**Body Format:**

```xml
<startTime _jt="calendar" time="1355756400000"/>
</item>
</timeInfoList>
<taskList _jt="array" itemsClass="CasterScheduleTask" size="1">
  <item alertEnabled="false" burst="true" description="Task 1" domainHREF=""
    enabled="true" execId="guest" execPassword="guest" firstPostProcessingProcedure=""
    firstPreProcessingProcedure=""
    folderHREF="" id="T65819f8at8fe1t4db5t9c10t07c10277175b" index="0"
    procedureDescription=""
    procedureId="64e971c8_fd80_4d07_99a7_a2356743010b"
    procedureName="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/
    Sales_Report_by_Country.fex" reportName="car_sales.htm"
    sendFormat="HTML" serverName="EDASERVE" type="1">
    <parameterList _jt="array" itemsClass="CasterScheduleParameter" size="2">
      <item _jt="CasterScheduleParameter" enabled="true" index="0"
        name="COUNTRY" type="0" value="ENGLAND"/>
      <item _jt="CasterScheduleParameter" enabled="true" index="1"
        name="DEALER_COST" type="0" value="10000"/>
    </parameterList>
  </item>
</taskList>
</casterObject>
</ibfsrpc>
Response:

If the value for the returncode attribute in the XML response is 10000, then the Schedule was successfully added.

Running a Schedule

This RESTful web service request can be used to run an existing ReportCaster Schedule.

HTTP Method: POST
REST URL Format:

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ScheduleName

where:

host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

FolderName
Is the name of the folder used for the stored ReportCaster Schedule. If the folder used for the stored ReportCaster Schedule exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

ScheduleName
Is the name of the ReportCaster Schedule to run, which also must have a .sch extension.

Body Format:

IBIRS_action=run

Example:
The following example demonstrates how to run a ReportCaster Schedule called REST_Schedule.

POST Request URL:

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch

Body:

IBIRS_action=run

Response:

A job number is returned in HTML format. For example:

J453ce7a4je11bj48ffj832ej9053e5377495

Retrieving a Schedule

This RESTful web service request can be used to retrieve an existing ReportCaster Schedule.

HTTP Method: GET
**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/
ScheduleName?IBIRS_action=get

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*FolderName*

Is the name of the folder used for the stored ReportCaster Schedule. If the folder used for the stored ReportCaster Schedule exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

*ScheduleName*

Is the name of the ReportCaster Schedule to retrieve, which also must have a .sch extension.

**Example:**

In the following example, a schedule called REST_Schedule.sch is retrieved from the Car_Reports folder, which is within the RESTful_Web_Services folder.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/
Car_Reports/REST_Schedule.sch?IBIRS_action=get

**Response:**
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="get" returncode="10000"
returnndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
<ibfsparams size="2">
  <entry key="IBIRS_args" value="__null"/>
  <entry key="IBIRS_" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/
REST_Schedule.sch"/>
</ibfsparams>
<rootObject _jt="IBFSObject" binary="false" createdOn="1356718595487"
defaultLng="en_US" description="Schedule Created through REST"
dummy="false" effectiveRSName="EDASERVE" extension="sch"
externalId="S1995b2ecsa8f6s4096sa62es1867fa2d7a85"
fullPath="IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Schedule.sch"
handle="7c2fd2a312dbci400dib666i3512e8d8b89f"
lastModified="1356718595487" lastaccessBy="admin lastaccessOn="135671962891"
length="0" name="REST_Schedule.sch" ownerId="10001"
ownerName="admin" ownerType="U" policy="/3/D///9+P9////v/////////+AAAA="
returnedLng="en_US" rsPath="/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/
REST_Schedule.sch" type="CasterSchedule">
<nlsValues _jt="HashMap" loadFactor="0.75" threshold="12">
  <entry>
    <key _jt="string" value="en_US"/>
    <value _jt="ArrayList" size="2">
      <item _jt="string" index="0" value="Schedule Created through REST"/>
    </value>
  </entry>
</nlsValues>
<properties size="2">
  <entry key="id" value="S1995b2ecsa8f6s4096sa62es1867fa2d7a85"/>
  <entry key="tool" value="schedule"/>
</properties>
</rootObject>
</ibfsrpc>
Deleting a Schedule

This RESTful web service request can be used to delete an existing ReportCaster Schedule.
**HTTP Method:** DELETE

**REST URL Format:**

http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/ScheduleName?
IBIRS_action=delete

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*FolderName*

Is the name of the folder used for the stored ReportCaster Schedule. If the folder used for the stored ReportCaster Schedule exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

*ScheduledName*

Is the name of the ReportCaster Schedule to delete, which also must have a .sch extension.

**Example:**

In the following example, the ReportCaster Schedule named REST_schedule.sch is deleted from the Car_Reports folder, which is within the RESTful_Web_Services folder.

**Request:**

http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/
Car_Reports/REST_schedule.sch?IBIRS_action=delete

**Response:**
If the value for the `returncode` attribute in the XML response is 10000, then the ReportCaster Schedule was deleted successfully.

### Deleting an Address Book

This RESTful web service request can be used to delete an existing ReportCaster Address Book.

**HTTP Method:** DELETE

**REST URL Format:**

```
http://host:port/ibi_apps/rs/ibfs/WFC/Repository/FolderName/AddressBookName?
IBIRS_action=delete
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.
**port**

Is the port number used by WebFOCUS.

**FolderName**

Is the name of the folder used for the stored ReportCaster Address Book. If the folder used for the stored ReportCaster Address Book exists as a subfolder, then the path to the subfolder name must be included in the REST URL. For example, TopFolderName/SubFolderName.

**AddressBookName**

Is the name of the ReportCaster Address Book to delete, which also must have a .adr extension.

**Example:**

In the following example, the ReportCaster Address Book named REST_Distribution_List.adr is deleted from the Car_Reports folder, which is within the RESTful_Web_Services folder.

**Request:**


**Response:**

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ibfsrpc _jt="IBFSResponseObject" language="EN" name="delete" returncode="10000" returndesc="SUCCESS" subreturncode="0" subsystem="SSYS" type="simple">
  <ibfsparams size="2">
    <entry key="IBIRS_args" value="__null"/>
    <entry key="IBIRS_" value="/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr"/>
  </ibfsparams>
  <rootObject _jt="IBFSCasterObject" binary="false" createdOn="1350862349237" defaultLng="en_US" description="REST Distribution List" dummy="false" extension="adr" externalId="1a7ddf0eIff6aI4886Ibde9177c691d280a0" fullPath="/IBFS:/WFC/Repository/RESTful_Web_Services/Car_Reports/REST_Distribution_List.adr" handle="1a7ddf0eIff6aI4886Ibde9177c691d280a0"/>
</ibfsrpc>
```
If the value for the `returncode` attribute in the XML response is 10000, then the ReportCaster Address Book was deleted successfully.

**Log Functionality**

This section describes the format and structure of RESTful web service requests that are used for a variety of ReportCaster logging functionality.

**Deleting a Specific Log**

This RESTful web service request can be used to delete a ReportCaster log for a specific job.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/services/LogServiceREST/deleteLogByJobId?jobId=jobId
```

where:

- `host`
  
  Is the name of the system where WebFOCUS is installed.

- `port`
  
  Is the port number used by WebFOCUS.

- `jobId`
  
  Is a unique identifier for the ReportCaster job.
Example:

In the following example, the ReportCaster log for job ID J34558adaj1b4dj4e6cjaddcj3745b2688f2c is deleted.

Request:

http://localhost:8080/ibi_apps/services/LogServiceREST/deleteLogByJobId?
jobId=J34558adaj1b4dj4e6cjaddcj3745b2688f2c

Response:

<ns:deleteLogByJobIdResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
</ns:deleteLogByJobIdResponse>

Deleting Logs for a Specific Time Period

This RESTful web service request can be used to delete ReportCaster logs for all schedules that were run between a specific time interval.

If there is no value for the start time of the time interval, then all log records before the end time of the time interval are deleted.

If there is no value for the end time of the time interval, then all log records after the start time of the time interval are deleted.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/services/LogServiceREST/deleteLogList?startTime=startTime&endTime=endTime

where:

host
Is the name of the system where WebFOCUS is installed.

port
Is the port number used by WebFOCUS.

startTime
Is the start time for when the logs are to be deleted. The following format must be used:

YYYY/MM/DD%20HH:MM:SS

endTime
Is the end time for when the logs are to be deleted. The following format must be used:
**Example:**

In the following example, all ReportCaster logs between 2014-02-20 11:00:00 and 2014-02-20 13:00:00 are to be deleted.

**Request:**

http://localhost:8080/ibi_apps/services/LogServiceREST/deleteLogList?startTime=2014/02/20%2011:00:00&endTime=2014/02/20%2013:00:00

**Response:**

  <ns:return>2</ns:return>
</ns:deleteLogListResponse>

The value within the <return> element indicates the number of ReportCaster logs that were deleted.

**Deleting Logs for an Owner**

This RESTful web service request can be used to delete ReportCaster logs for all schedules that were run between a specific time interval for a specific log owner.

If there is no value for the start time of the time interval, then all log records before the end time of the time interval are deleted.

If there is no value for the end time of the time interval, then all log records after the start time of the time interval are deleted.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/LogServiceREST/deleteLogListByOwner?owner=owner&startTime=startTime&endTime=endTime

where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.
**owner**

Is the owner of the ReportCaster log.

**startTime**

Is the start time for when the logs are to be deleted. The following format must be used:

`YYYY/MM/DD%20HH:MM:SS`

**endTime**

Is the end time for when the logs are to be deleted. The following format must be used:

`YYYY/MM/DD%20HH:MM:SS`

**Example:**

In the following example, all ReportCaster logs between 2014-02-21 09:00:00 and 2014-02-21 10:00:00 for the log owner named `admin` are to be deleted.

**Request:**

```
http://localhost:8080/ibi_apps/services/LogServiceREST/deleteLogListByOwner?
owner=admin&
startTime=2014/02/21%2009:00:00&endTime=2014/02/21%2010:00:00
```

**Response:**

```
<ns:deleteLogListByOwnerResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return>2</ns:return>
</ns:deleteLogListByOwnerResponse>
```

The value within the `<return>` element indicates the number of ReportCaster logs that were deleted.

**Deleting Logs for a Schedule ID**

This RESTful web service request can be used to delete all ReportCaster logs a specific schedule identified by a schedule ID.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/services/LogServiceREST/deleteLogListByScheduleId?
scheduleId=scheduleId
```

where:

**host**

Is the name of the system where WebFOCUS is installed.
port

Is the port number used by WebFOCUS.

scheduleId

Is the schedule ID for the ReportCaster schedule.

Example:

In the following example, all ReportCaster logs for schedule ID S23f65030s728as482asa632s879fd9f6a727 are to be deleted.

Request:

http://localhost:8080/ibi_apps/services/LogServiceREST/deleteLogListByScheduleId?
scheduleId=S23f65030s728as482asa632s879fd9f6a727

Response:

<ns:deleteLogListByScheduleIdResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
</ns:deleteLogListByScheduleIdResponse>

Deleting Logs for a Schedule ID Within a Time Period

This RESTful web service request can be used to delete all ReportCaster logs that were run between a specific time interval for a specific schedule identified by the schedule ID.

If there is no value for the start time of the time interval, then all log records before the end time of the time interval are deleted.

If there is no value for the end time of the time interval, then all log records after the start time of the time interval are deleted.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/services/LogServiceREST/deleteLogListByScheduleIdByCalendar?
scheduleId=(scheduleId&startTime=startTime&endTime=endTime

where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.
**scheduleId**

Is the schedule ID for the ReportCaster schedule.

**startTime**

Is the start time for when the logs are to be deleted. The following format must be used:

```
YYYY/MM/DD%20HH:MM:SS
```

**endTime**

Is the end time for when the logs are to be deleted. The following format must be used:

```
YYYY/MM/DD%20HH:MM:SS
```

**Example:**

In the following example, all ReportCaster logs between 2014-02-21 12:00:00 and 2014-02-21 13:00:00 for schedule ID Sca76e628s892as43a4sbddcs10875ff7f188 are to be deleted.

**Request:**

```
http://localhost:8080/ibi_apps/services/LogServiceREST/
deleteLogListByScheduleIdByCalendar?
scheduleId=Sca76e628s892as43a4sbddcs10875ff7f188&
startTime=2014/02/21%2012:00:00&endTime=2014/02/21%2013:00:00
```

**Response:**

```
<ns:deleteLogListByScheduleIdByCalendarResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
</ns:deleteLogListByScheduleIdByCalendarResponse>
```

**Retrieving Last Log for a Schedule ID**

This RESTful web service request can be used to retrieve the last ReportCaster log for a specific schedule identified by the schedule ID.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/services/LogServiceREST/getLastLogByScheduleId?
scheduleId=scheduleId
```

where:

**host**

Is the name of the system where WebFOCUS is installed.
**port**

Is the port number used by WebFOCUS.

**scheduleId**

Is the schedule ID for the ReportCaster schedule.

**Example:**

In the following example, the last ReportCaster log for schedule ID Sca76e628s892as43a4sbddcs10875ff7f188 is to be retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/LogServiceREST/getLastLogByScheduleId?scheduleId=Sca76e628s892as43a4sbddcs10875ff7f188

**Response:**
<ns:getLastLogByScheduleIdResponse xmlns:ns="http://ws.api.broker.ibi">
            xsi:type="ax267:DsLog">
    <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
    <ax267:description xsi:nil="true"/>
    <ax267:endTime>2014-02-24T09:00:25.861-05:00</ax267:endTime>
    <ax267:errorType>0</ax267:errorType>
    <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
    <ax267:ibfsPath/>
    <ax267:id>J4ce5d61ejf6b2j441dja02ej084628360372</ax267:id>
    <ax267:jobId>J4ce5d61ejf6b2j441dja02ej084628360372</ax267:jobId>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Schedule Executed On Demand at IBI-Laptop:8201 (IBI-Laptop/172.44.18.74)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-24T09:00:23.126-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Job placed in the waiting queue at 2014-02-24 09:00:23.104-0500 (1,393,250,423,104)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-24T09:00:23.140-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Job started running at 2014-02-24 09:00:23.122-0500 (1,393,250,423,122)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-24T09:00:23.140-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
  </ns:return>
</ns:getLastLogByScheduleIdResponse>
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<ax267:messageCode>BTP1010</ax267:messageCode>
<ax267:taskDescription xsi:nil="true"/>
<ax267:time>2014-02-24T09:00:23.141-05:00</ax267:time>
<ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
<ax267:error>false</ax267:error>
<ax267:execId xsi:nil="true"/>
<ax267:message>Job remained in waiting queue for 0.018 seconds</ax267:message>
<ax267:messageCode>BTP1010</ax267:messageCode>
<ax267:taskDescription xsi:nil="true"/>
<ax267:time>2014-02-24T09:00:23.141-05:00</ax267:time>
<ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
<ax267:error>false</ax267:error>
<ax267:execId>guest</ax267:execId>
<ax267:message>Starting task: Task 1</ax267:message>
<ax267:messageCode>BTP1020</ax267:messageCode>
<ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
<ax267:time>2014-02-24T09:00:23.752-05:00</ax267:time>
<ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
<ax267:error>false</ax267:error>
<ax267:execId>guest</ax267:execId>
<ax267:message>Task type: EDA RPC</ax267:message>
<ax267:messageCode>BTP1020</ax267:messageCode>
<ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
<ax267:time>2014-02-24T09:00:23.752-05:00</ax267:time>
<ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
<ax267:error>false</ax267:error>
<ax267:execId>guest</ax267:execId>
<ax267:message>Procedure name: ibisamp/carinst</ax267:message>
<ax267:messageCode>BTP1020</ax267:messageCode>
<ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
<ax267:time>2014-02-24T09:00:23.752-05:00</ax267:time>
<ax267:warning>false</ax267:warning>
</ax267:logElementList>
Connecting to server EDASERVE with execution id guest at 2014-02-24 09:00:23.753-0500 (1,393,250,423,753)

Connection to the Reporting Server EDASERVE established at 2014-02-24 09:00:24.323-0500 (1,393,250,424,323)

The time to establish a connection to the Reporting Server EDASERVE was 0.57 seconds

Executing focexec.
<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId>guest</ax267:execId>
  <ax267:message>0 HOLDING HTML FILE ON PC DISK ...</ax267:message>
  <ax267:messageCode>BTP1020</ax267:messageCode>
  <ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:24.974-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>

<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId>guest</ax267:execId>
  <ax267:message>Connection to the Reporting Server EDASERVE closed at 2014-02-24 09:00:25.040-0500 (1,393,250,425,040)</ax267:message>
  <ax267:messageCode>BTP1020</ax267:messageCode>
  <ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.040-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>

<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId>guest</ax267:execId>
  <ax267:message>Job ran on the Reporting Server EDASERVE for 0.717 seconds</ax267:message>
  <ax267:messageCode>BTP1020</ax267:messageCode>
  <ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.040-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>

<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId>guest</ax267:execId>
  <ax267:message>Task finished.</ax267:message>
  <ax267:messageCode>BTP1020</ax267:messageCode>
  <ax267:taskDescription>ibisamp/carinst</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.040-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>

<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId xsi:nil="true"/>
  <ax267:message>Starting distribution: Report Library</ax267:message>
  <ax267:messageCode>BTP1010</ax267:messageCode>
  <ax267:taskDescription xsi:nil="true"/>
  <ax267:time>2014-02-24T09:00:25.060-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId xsi:nil="true"/>
  <ax267:message>Library Notification email sent to myEmail@ibi.com</ax267:message>
  <ax267:messageCode>BTP1010</ax267:messageCode>
  <ax267:taskDescription>Distribute</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.639-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId xsi:nil="true"/>
  <ax267:message>Distribution finished.</ax267:message>
  <ax267:messageCode>BTP1010</ax267:messageCode>
  <ax267:taskDescription>Distribute</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.642-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId xsi:nil="true"/>
  <ax267:message>Job finished at 2014-02-24 09:00:25.642-0500 (1,393,250,425,642)</ax267:message>
  <ax267:messageCode>BTP1010</ax267:messageCode>
  <ax267:taskDescription>Distribute</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.643-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>
<ax267:logElementList xsi:type="ax267:DsLogElement">
  <ax267:error>false</ax267:error>
  <ax267:execId xsi:nil="true"/>
  <ax267:message>Job time on distribution server after the report completed was 0.582 seconds</ax267:message>
  <ax267:messageCode>BTP1010</ax267:messageCode>
  <ax267:taskDescription>Distribute</ax267:taskDescription>
  <ax267:time>2014-02-24T09:00:25.643-05:00</ax267:time>
  <ax267:warning>false</ax267:warning>
</ax267:logElementList>
The following table lists and describes the possible errorType code values that are returned in the XML response document.

<table>
<thead>
<tr>
<th>errorType Code Value</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>6</td>
<td>Running</td>
</tr>
<tr>
<td>7</td>
<td>Running With Error</td>
</tr>
</tbody>
</table>

**Retrieving the Log for a Job ID**

This RESTful web service request can be used to retrieve the last ReportCaster log for a specific job identified by the job ID.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/LogServiceREST/getLogByJobId?processId=jobId

where:

 host

Is the name of the system where WebFOCUS is installed.

 port

Is the port number used by WebFOCUS.

 jobId

Is a unique identifier for the ReportCaster job.

**Example:**

In the following example, the ReportCaster log for job ID J0c6828cfj96f0j4363ja81ejd41e3782cff2 is to be retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/LogServiceREST/getLogByJobId?processId=J0c6828cfj96f0j4363ja81ejd41e3782cff2
Response:

<ns:getLogByJobIdResponse xmlns:ns="http://ws.api.broker.ibi">
    <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
    <ax267:description xsi:nil="true"/>
    <ax267:endTime>2014-02-19T16:19:08.674-05:00</ax267:endTime>
    <ax267:errorType>0</ax267:errorType>
    <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
    <ax267:ibfsPath/>
    <ax267:id>J0c6828cfj96f0j4363ja81ejd41e3782cffe2</ax267:id>
    <ax267:jobId>J0c6828cfj96f0j4363ja81ejd41e3782cffe2</ax267:jobId>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Schedule Executed On Demand at IBI-Laptop:8201 (IBI-Laptop/172.44.18.74)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-19T16:19:08.061-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Job placed in the waiting queue at 2014-02-19 16:19:08.055-0500 (1,392,844,748,055)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-19T16:19:08.061-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
    <ax267:logElementList xsi:type="ax267:DsLogElement">
      <ax267:error>false</ax267:error>
      <ax267:execId xsi:nil="true"/>
      <ax267:message>Job started running at 2014-02-19 16:19:08.056-0500 (1,392,844,748,056)</ax267:message>
      <ax267:messageCode>BTP1010</ax267:messageCode>
      <ax267:taskDescription xsi:nil="true"/>
      <ax267:time>2014-02-19T16:19:08.061-05:00</ax267:time>
      <ax267:warning>false</ax267:warning>
    </ax267:logElementList>
  </ns:return>
</ns:getLogByJobIdResponse>
Job remained in waiting queue for 0.0010 seconds

Starting task: Task 1

Procedure name: ibisamp/carinst
Connecting to server EDASERVE with execution id guest at 2014-02-19 16:19:08.130-0500 (1,392,844,748,130)

The time to establish a connection to the Reporting Server EDASERVE was 0.027 seconds

Executing focexec.

0 HOLDING HTML FILE ON PC DISK ...
Distribution finished.

Job finished at 2014-02-19 16:19:08.456-05:00

Job time on distribution server after the report completed was 0.225 seconds

Total running time was 0.4 seconds
The following table lists and describes the possible errorType code values that are returned in the XML response document.

<table>
<thead>
<tr>
<th>errorType Code Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No Error</td>
</tr>
<tr>
<td>1</td>
<td>Error</td>
</tr>
<tr>
<td>2</td>
<td>Warning</td>
</tr>
</tbody>
</table>
Retrieving the Log List for an Owner

This RESTful web service request can be used to retrieve a list of log information for a specific owner. The details for each log are not returned.

**HTTP Method:** GET

**REST URL Format:**

\[http://host:port/ibi_apps/services/LogServiceREST/getLogInfoListByOwner?owner=owner\]

where:

- **host**
  Is the name of the system where WebFOCUS is installed.

- **port**
  Is the port number used by WebFOCUS.

- **owner**
  Is the owner of the log.

**Example:**

In the following example, a list of log information for the owner named *admin* is to be retrieved.

**Request:**

\[http://localhost:8080/ibi_apps/services/LogServiceREST/getLogInfoListByOwner?owner=admin\]

**Response:**
<ns:getLogInfoListByOwnerResponse xmlns:ns="http://ws.api.broker.ibi"
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ax267:DsLog">
    <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
    <ax267:description xsi:nil="true"/>
    <ax267:endTime>2014-02-19T16:14:42.279-05:00</ax267:endTime>
    <ax267:errorType>2</ax267:errorType>
    <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
    <ax267:ibfsPath/>
    <ax267:id>J73498ee4j33caj409bjacbbj47ab9f66920d</ax267:id>
    <ax267:jobId>J73498ee4j33caj409bjacbbj47ab9f66920d</ax267:jobId>
    <ax267:logElementList xsi:nil="true"/>
    <ax267:name xsi:nil="true"/>
    <ax267:owner>admin</ax267:owner>
    <ax267:scheduleDescription>Carinst Report</ax267:scheduleDescription>
    <ax267:scheduleId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:scheduleId>
    <ax267:startTime>2014-02-19T16:14:41.146-05:00</ax267:startTime>
    <ax267:summary xsi:nil="true"/>
  </ns:return>

  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ax267:DsLog">
    <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
    <ax267:description xsi:nil="true"/>
    <ax267:endTime>2014-02-19T16:16:22.945-05:00</ax267:endTime>
    <ax267:errorType>2</ax267:errorType>
    <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
    <ax267:ibfsPath/>
    <ax267:id>J5004dec7j6c9cj409jab87j97b8fa04831a</ax267:id>
    <ax267:jobId>J5004dec7j6c9cj409jab87j97b8fa04831a</ax267:jobId>
    <ax267:logElementList xsi:nil="true"/>
    <ax267:name xsi:nil="true"/>
    <ax267:owner>admin</ax267:owner>
    <ax267:scheduleDescription>Carinst Report</ax267:scheduleDescription>
    <ax267:scheduleId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:scheduleId>
    <ax267:startTime>2014-02-19T16:16:22.298-05:00</ax267:startTime>
    <ax267:summary xsi:nil="true"/>
  </ns:return>
</ns:getLogInfoListByOwnerResponse>
6. ReportCaster RESTful Web Service Requests

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The following table lists and describes the possible errorType code values that are returned in the XML response document.

<table>
<thead>
<tr>
<th>errorType Code Value</th>
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<tbody>
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<td>2</td>
<td>Warning</td>
</tr>
<tr>
<td>6</td>
<td>Running</td>
</tr>
<tr>
<td>7</td>
<td>Running With Error</td>
</tr>
</tbody>
</table>

Retrieving the Log List for an Owner Within a Time Period

This RESTful web service request can be used to retrieve a list of log information for a specific owner that was run between a specific time interval.

If there is no value for the start time of the time interval, then log list information before the end time of the time interval is retrieved.

If there is no value for the end time of the time interval, then log list information after the start time of the time interval is retrieved.
The details for each log are not returned.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/LogServiceREST/getLogInfoListByOwnerByCalendar?
owner=owner&
startTime=startTime&endTime=endTime

where:

- **host**
  Is the name of the system where WebFOCUS is installed.

- **port**
  Is the port number used by WebFOCUS.

- **owner**
  Is the owner of the ReportCaster log.

- **startTime**
  Is the start time for when the logs are to be retrieved. The following format must be used:
  YYYY/MM/DD%20HH:MM:SS

- **endTime**
  Is the end time for when the logs are to be retrieved. The following format must be used:
  YYYY/MM/DD%20HH:MM:SS

**Example:**

In the following example, a list of log information for the owner named *admin* between 2014-02-19 00:00:00 and 2014-02-19 23:59:59 is to be retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/LogServiceREST/getLogInfoListByOwnerByCalendar?
owner=admin&
startTime=2014/02/19%2000:00:00&endTime=2014/02/19%2023:59:59

**Response:**
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ax267:DsLog">
    <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
    <ax267:description xsi:nil="true"/>
    <ax267:endTime>2014-02-19T16:14:42.279-05:00</ax267:endTime>
    <ax267:errorType>2</ax267:errorType>
    <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
    <ax267:ibfsPath/>
    <ax267:id>J73498ee4j33caj409bjacbbj47ab9f66920d</ax267:id>
    <ax267:jobId>J73498ee4j33caj409bjacbbj47ab9f66920d</ax267:jobId>
    <ax267:logElementList xsi:nil="true"/>
    <ax267:name xsi:nil="true"/>
    <ax267:owner>admin</ax267:owner>
    <ax267:scheduleDescription>Carinst Report</ax267:scheduleDescription>
    <ax267:scheduleId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:scheduleId>
    <ax267:startTime>2014-02-19T16:14:41.146-05:00</ax267:startTime>
    <ax267:summary xsi:nil="true"/>
  </ns:return>
</ns:return>

<ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ax267:DsLog">
  <ax267:IBFSObjectType>0</ax267:IBFSObjectType>
  <ax267:description xsi:nil="true"/>
  <ax267:endTime>2014-02-19T16:14:41.416-05:00</ax267:endTime>
  <ax267:errorType>2</ax267:errorType>
  <ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f688</ax267:ibfsId>
  <ax267:ibfsPath/>
  <ax267:id>J5004dec7j6c9cj4009jab87j97b8fa04831a</ax267:id>
  <ax267:jobId>J5004dec7j6c9cj4009jab87j97b8fa04831a</ax267:jobId>
</ns:return>
The following table lists and describes the possible `errorType` code values that are returned in the XML response document.

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<th>errorType Code Value</th>
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</tr>
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<tbody>
<tr>
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<td>Warning</td>
</tr>
<tr>
<td>6</td>
<td>Running</td>
</tr>
<tr>
<td>7</td>
<td>Running With Error</td>
</tr>
</tbody>
</table>

Retrieving the Log List for a Schedule

This RESTful web service request can be used to retrieve a list of log information for a specific schedule identified by the schedule ID. The details for each log are not returned.

**HTTP Method:** GET

**REST URL Format:**

```
http://host:port/ibi_apps/services/LogServiceREST/getLogInfoListByScheduleId?
scheduleId=scheduleId
```
where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*scheduleId*

Is the schedule ID for the ReportCaster schedule.

**Example:**

In the following example, a list of log information for schedule ID Sca76e628s892as43a4sbddcs10875ff7f188 is to be retrieved.

**Request:**

`http://localhost:8080/ibi_apps/services/LogServiceREST/getLogInfoListByScheduleId?scheduleId=Sca76e628s892as43a4sbddcs10875ff7f188`

**Response:**
<ax267:scheduleId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:scheduleId>
<ax267:startTime>2014-02-19T16:16:22.298-05:00</ax267:startTime>
<ax267:summary xsi:nil="true"/>
</ns:return>
<ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ax267:DsLog">
<ax267:IBFSObjectType>0</ax267:IBFSObjectType>
<ax267:description xsi:nil="true"/>
<ax267:endTime>2014-02-19T16:19:08.674-05:00</ax267:endTime>
<ax267:errorType>0</ax267:errorType>
<ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
<ax267:ibfsPath/>
<ax267:id>J0c6828cfj96f0j4363ja8lejd41e3782cff2</ax267:id>
<ax267:jobId>J0c6828cfj96f0j4363ja8lejd41e3782cff2</ax267:jobId>
<ax267:logElementList xsi:nil="true"/>
<ax267:name xsi:nil="true"/>
<ax267:owner>admin</ax267:owner>
<ax267:scheduleDescription>Carinst Report</ax267:scheduleDescription>
<ax267:startTime>2014-02-19T16:19:08.061-05:00</ax267:startTime>
<ax267:summary xsi:nil="true"/>
</ns:return>
<ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ax267:DsLog">
<ax267:IBFSObjectType>0</ax267:IBFSObjectType>
<ax267:description xsi:nil="true"/>
<ax267:endTime>2014-02-19T16:22:16.729-05:00</ax267:endTime>
<ax267:errorType>0</ax267:errorType>
<ax267:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax267:ibfsId>
<ax267:ibfsPath/>
<ax267:id>JD5ae6d5cj3283j4bc2ja36ejc29fd6895419</ax267:id>
<ax267:jobId>JD5ae6d5cj3283j4bc2ja36ejc29fd6895419</ax267:jobId>
<ax267:logElementList xsi:nil="true"/>
<ax267:name xsi:nil="true"/>
<ax267:owner>admin</ax267:owner>
<ax267:scheduleDescription>Carinst Report</ax267:scheduleDescription>
<ax267:summary xsi:nil="true"/>
</ns:return>
6. ReportCaster RESTful Web Service Requests
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<td>Running</td>
</tr>
<tr>
<td>7</td>
<td>Running With Error</td>
</tr>
</tbody>
</table>

Retrieving a List of Schedule Owners

This RESTful web service request can be used to retrieve a list of schedule owners.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/services/LogServiceREST/getOwnerList
where:

host

Is the name of the system where WebFOCUS is installed.

port

Is the port number used by WebFOCUS.

Example:

In the following example, a list of schedule owners is to be retrieved.

Request:

http://localhost:8080/ibi_apps/services/LogServiceREST/getOwnerList

Response:

<ns:getOwnerListResponse xmlns:ns="http://ws.api.broker.ibi"
schedule.data.api.broker.ibi/xsd">
  <ns:return>admin</ns:return>
  <ns:return>system</ns:return>
</ns:getOwnerListResponse>

The value within each <return> element indicates a schedule owner.

Console Functionality

This section describes the format and structure of RESTful web service requests that are used for a variety of ReportCaster Console functionality.

Changing Job Priority

This RESTful web service request can be used to change the priority of a job awaiting execution in the job queue.

HTTP Method: GET

REST URL Format:

http://host:port/ibi_apps/services/ConsoleServiceREST/changeJobPriority?
jobId=jobId&priority=priority

where:

host

Is the name of the system where WebFOCUS is installed.
**port**

Is the port number used by WebFOCUS.

**jobId**

Is a unique identifier for the ReportCaster job.

**priority**

The priority of a job awaiting execution in the job queue. A value of 1 is the highest and a value of 5 is the lowest.

**Example:**

In the following example, the priority for the ReportCaster job identified by job ID Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5 is changed to 1.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/changeJobPriority?jobId=Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5&priority=1

**Response:**

   <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true"/>
</ns:changeJobPriorityResponse>

**Retrieving Job Status**

This RESTful web service request can be used to retrieve the status of a current ReportCaster job in the queue.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/ConsoleServiceREST/getJobStatus?jobId=jobId

where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**jobId**

Is a unique identifier for the ReportCaster job.
Example:

In the following example, the status of the ReportCaster job identified by job ID Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5 is returned.

Request:

```
http://localhost:8080/ibi_apps/services/ConsoleServiceREST/getJobStatus?
jobId=Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5
```

Response:

```
<ns:getJobStatusResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return>1</ns:return>
</ns:getJobStatusResponse>
```

The following table lists and describes the ReportCaster job status return codes.

<table>
<thead>
<tr>
<th>getJobStatus Return Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1</td>
<td>The specified ReportCaster job identified by jobld does not exist.</td>
</tr>
<tr>
<td>0</td>
<td>The specified ReportCaster job identified by jobld exists, but the calling user is not authorized to view the status of this job.</td>
</tr>
<tr>
<td>1</td>
<td>The specified ReportCaster job identified by jobld is in the waiting queue.</td>
</tr>
<tr>
<td>2</td>
<td>The specified ReportCaster job identified by jobld is running.</td>
</tr>
<tr>
<td>3</td>
<td>The specified ReportCaster job identified by jobld has completed.</td>
</tr>
</tbody>
</table>

Listing Jobs in the Queue

This RESTful web service request can be used to list the ReportCaster jobs awaiting execution in the job queue.

HTTP Method: GET

REST URL Format:

```
http://host:port/ibi_apps/services/ConsoleServiceREST/getJobsInQueue
```
where:

**host**

Is the name of the system where WebFOCUS is installed.

**port**

Is the port number used by WebFOCUS.

**Example:**

In the following example, a list of ReportCaster jobs awaiting execution in the job queue is retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/getJobsInQueue

**Response:**
<ns:getJobsInQueueResponse xmlns:ns="http://ws.api.broker.ibi"
console.data.api.broker.ibi/xsd">
    <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ax226:Job">
        <ax226:distributionServerName xsi:nil="true"/>
        <ax226:fullyQualifiedServerName xsi:nil="true"/>
        <ax226:id>J6d1eb46fj9a2dj46e0jb532j711fa60ec7e1</ax226:id>
        <ax226:schedule xsi:type="ax224:Schedule">
            <ax224:IBFSObjectType>113</ax224:IBFSObjectType>
            <ax224:active>true</ax224:active>
            <ax224:compressedReport>false</ax224:compressedReport>
            <ax224:deleteJobAfterRun>false</ax224:deleteJobAfterRun>
            <ax224:description>Carinst Report 2</ax224:description>
        </ax226:schedule>
        <ax224:destination xsi:type="ax224:Destination">
            <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
                <ax224:password/>
                <ax224:procedureName/>
                <ax224:serverName/>
                <ax224:userN
<ax224:distributionList xsi:type="ax224:DistributionEmail">
  <ax224:description/>
  <ax224:id/>
  <ax224:type>EMAIL</ax224:type>
  <ax224:authEnabled>false</ax224:authEnabled>
  <ax224:authPassword/>
  <ax224:authUserId/>
  <ax224:destination xsi:type="ax224:Destination">
    <ax224:distributionFile/>
    <ax224:distributionList/>
    <ax224:distributionListFullPath/>
    <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
      <ax224:password/>
      <ax224:procedureName/>
      <ax224:serverName/>
      <ax224:userName/>
    </ax224:dynamicAddress>
    <ax224:singleAddress/>
    <ax224:type>DISTRIBUTION_LIST</ax224:type>
  </ax224:destination>
  <ax224:inlineMessage/>
  <ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
  <ax224:mailFrom/>
  <ax224:mailReplyAddress/>
  <ax224:mailServerName/>
  <ax224:mailSubject/>
  <ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
</ax224:distributionList>
6. ReportCaster RESTful Web Service Requests

```
<ax224:firstTask xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:procedureId/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:firstTask>
```

```xml
<ax224:ibfsId>6dff2b49182451463819e9f1c59009a9a12d5</ax224:ibfsId>
<ax224:id>S23f65030s728as482asa632s879fd9f6a727</ax224:id>
<ax224:lastModified>2014-03-11T18:26:05.912-04:00</ax224:lastModified>
<ax224:lastTimeExecuted>1970-01-01T00:00:00.000-05:00</ax224:lastTimeExecuted>
<ax224:notification xsi:type="ax224:Notification">
  <ax224:description/>
  <ax224:from/>
  <ax224:id/>
  <ax224:subject/>
  <ax224:type>INACTIVE</ax224:type>
</ax224:notification>
```
Listing Jobs in the Queue for an Owner

This RESTful web service request can be used to list the ReportCaster jobs awaiting execution in the job queue for a specific schedule owner.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/ConsoleServiceREST/getJobsInQueueByOwner?owner=owner

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **owner**
  
  Is the owner of the ReportCaster schedule.

**Example:**

In the following example, a list of ReportCaster jobs awaiting execution in the job queue for the owner named *admin* is retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/getJobsInQueueByOwner?owner=admin

**Response:**
<ax226:distributionServerName xsi:nil="true"/>
<ax226:fullyQualifiedServerName xsi:nil="true"/>
<ax226:id>Jc12bc4433b1f8j4c19j90aj7ba31ac4dbf5</ax226:id>
<ax226:schedule xsi:type="ax224:Schedule">
  <ax224:IBFSObjectType>113</ax224:IBFSObjectType>
  <ax224:active>true</ax224:active>
  <ax224:compressedReport>false</ax224:compressedReport>
  <ax224:deleteJobAfterRun>false</ax224:deleteJobAfterRun>
  <ax224:description>Carinst Report</ax224:description>
  <ax224:destination xsi:type="ax224:Destination">
    <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
      <ax224:password/>
      <ax224:procedureName/>
      <ax224:serverName/>
      <ax224:userName/>
    </ax224:dynamicAddress>
    <ax224:singleAddress/>
    <ax224:type>DISTRIBUTION_LIST</ax224:type>
  </ax224:destination>
</ax226:schedule>
</ns:return>
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distribution>
<ax224:distributionList xsi:type="ax224:DistributionEmail">
<ax224:description/>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:type>EMAIL</ax224:type>
<ax224:authEnabled>false</ax224:authEnabled>
<ax224:authPassword/>
<ax224:authUserId/>
<ax224:destination xsi:type="ax224:Destination">
<ax224:destination xsi:type="ax224:Destination">
<ax224:distributionFile/>
<ax224:distributionList/>
<ax224:distributionListFullPath/>
<ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
<ax224:password/>
<ax224:procedureName/>
<ax224:serverName/>
<ax224:userName/>
</ax224:dynamicAddress>
</ax224:destination>
<ax224:type>DISTRIBUTION_LIST</ax224:type>
</ax224:distributionList>
<ax224:inlineMessage/>
<ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
<ax224:mailFrom/>
<ax224:mailReplyAddress/>
<ax224:mailServerName/>
<ax224:mailSubject/>
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distributionList>
<ax224:firstTask xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:procedureId/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:type>0</ax224:type>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:firstPostProcessingProcedure/>
  <ax224:firstPreProcessingProcedure/>
  <ax224:formatInFex>false</ax224:formatInFex>
  <ax224:parameterList xsi:nil="true"/>
  <ax224:secondPostProcessingProcedure/>
  <ax224:secondPreProcessingProcedure/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:firstTask>
<ax224:ibfsId>Sca76e628s892as43a4sbddcs10875ff7f188</ax224:ibfsId>
<ax224:id>Sca76e628s892as43a4sbddcs10875ff7f188</ax224:id>
<ax224:lastModified>2014-02-24T14:25:09.581-05:00</ax224:lastModified>
<ax224:lastTimeExecuted>1970-01-01T00:00:00.000-05:00</ax224:lastTimeExecuted>
<ax224:name/>
<ax224:notification xsi:type="ax224:Notification">
  <ax224:addressForBriefNotification/>
  <ax224:addressForFullNotification/>
  <ax224:description/>
  <ax224:from/>
  <ax224:id/>
  <ax224:subject/>
  <ax224:type>INACTIVE</ax224:type>
</ax224:notification>
<ax224:owner>admin</ax224:owner>
<ax224:priority>3</ax224:priority>
<ax224:statusLastExecuted/>
<ax224:summary/>
<ax224:taskList xsi:type="ax224:TaskWFServerProcedure">
<ax224:description>WebFocus Server Procedure task</ax224:description>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:procedureId/>
<ax224:procedureName/>
<ax224:reportName/>
<ax224:taskRetry xsi:nil="true"/>
<ax224:type>0</ax224:type>
<ax224:allowFormatList xsi:nil="true"/>
<ax224:burst>false</ax224:burst>
<ax224:execId/>
<ax224:execPassword/>
<ax224:execPassword/>
<ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
<ax224:startTime>2014-02-24T14:25:09.581-05:00</ax224:startTime>
<ax224:type>0</ax224:type>
</ax224:timeInfo>
</ax224:taskList>
<ax224:timeInfoList xsi:type="ax224:TimeInfoOnce">
<ax224:description/>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:name/>
<ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
<ax224:startTime>2014-02-24T14:25:09.581-05:00</ax224:startTime>
<ax224:type>0</ax224:type>
</ax224:timeInfo>
</ax224:timeInfoList>
<ax224:serverName>EDASERVE</ax224:serverName>
Listing Running Jobs

This RESTful web service request can be used to list the ReportCaster jobs that are running.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/ConsoleServiceREST/getRunningJobs

where:

*host*

  Is the name of the system where WebFOCUS is installed.

*port*

  Is the port number used by WebFOCUS.

**Example:**

In the following example, a list of ReportCaster jobs that are running is retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/getRunningJobs

**Response:**
  <ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ax226:Job">
    <ax226:distributionServerName xsi:nil="true"/>
    <ax226:fullyQualifiedServerName xsi:nil="true"/>
    <ax226:id>J41d8861bj53f5j4a60j8568jedd39416a88</ax226:id>
    <ax226:schedule xsi:type="ax224:Schedule">
      <ax224:IBFSObjectType>113</ax224:IBFSObjectType>
      <ax224:active>true</ax224:active>
      <ax224:compressedReport>false</ax224:compressedReport>
      <ax224:deleteJobAfterRun>false</ax224:deleteJobAfterRun>
      <ax224:active>true</ax224:active>
      <ax224:compression>Carinest Report 2</ax224:compression>
      <ax224:destination xsi:type="ax224:Destination">
        <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
          <ax224:password/>
          <ax224:procedureName/>
          <ax224:serverName/>
          <ax224:userName/>
        </ax224:dynamicAddress>
      </ax224:destination>
      <ax224:inlineMessage/>
      <ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
      <ax224:mailFrom/>
      <ax224:mailReplyAddress/>
      <ax224:mailServerName/>
      <ax224:mailSubject/>
    </ax224:schedule>
  </ns:return>
</ns:getRunningJobsResponse>
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distribution>
<ax224:distributionList xsi:type="ax224:DistributionEmail">
<ax224:description/>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:type>EMAIL</ax224:type>
<ax224:authEnabled>false</ax224:authEnabled>
<ax224:authPassword/>
<ax224:authUserId/>
<ax224:destination xsi:type="ax224:Destination">
<ax224:distributionFile/>
<ax224:distributionList/>
<ax224:distributionListFullPath/>
<ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
<ax224:password/>
<ax224:procedureName/>
<ax224:serverName/>
<ax224:userName/>
</ax224:dynamicAddress>
<ax224:singleAddress/>
<ax224:type>DISTRIBUTION_LIST</ax224:type>
</ax224:destination>
<ax224:inlineMessage/>
<ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
<ax224:mailFrom/>
<ax224:mailReplyAddress/>
<ax224:mailServerName/>
<ax224:mailSubject/>
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distributionList>
6. ReportCaster RESTful Web Service Requests
<ax224:owner>admin</ax224:owner>
  <ax224:priority>3</ax224:priority>
  <ax224:statusLastExecuted/>
  <ax224:summary/>
  <ax224:taskList xsi:type="ax224:TaskWFServerProcedure">
    <ax224:description>WebFocus Server Procedure task</ax224:description>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:procedureId/>
    <ax224:procedureName/>
    <ax224:reportName/>
    <ax224:taskRetry xsi:nil="true"/>
    <ax224:type>0</ax224:type>
    <ax224:allowFormatList xsi:nil="true"/>
    <ax224:burst>false</ax224:burst>
    <ax224:execId/>
    <ax224:execPassword/>
    <ax224:parameterList xsi:nil="true"/>
    <ax224:sendFormat>HTML</ax224:sendFormat>
    <ax224:serverName>EDASERVE</ax224:serverName>
  </ax224:taskList>
  <ax224:timeInfo xsi:type="ax224:TimeInfoOnce">
    <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
    <ax224:startTime>2014-03-11T18:27:46.710-04:00</ax224:startTime>
  </ax224:timeInfo>
  <ax224:timeInfoList xsi:type="ax224:TimeInfoOnce">
    <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
    <ax224:startTime>2014-03-11T18:27:46.710-04:00</ax224:startTime>
  </ax224:timeInfoList>
6. ReportCaster RESTful Web Service Requests
<ax224:distributionList xsi:type="ax224:DistributionEmail">
  <ax224:description/>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:type>EMAIL</ax224:type>
  <ax224:authEnabled>false</ax224:authEnabled>
  <ax224:authPassword/>
  <ax224:authUserId/>
  <ax224:destination xsi:type="ax224:Destination">
    <ax224:distributionFile/>
    <ax224:distributionList/>
    <ax224:distributionListFullPath/>
    <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
      <ax224:password/>
      <ax224:procedureName/>
      <ax224:serverName/>
      <ax224:userName/>
    </ax224:dynamicAddress>
    <ax224:singleAddress/>
    <ax224:type>DISTRIBUTION_LIST</ax224:type>
  </ax224:destination>
</ax224:distributionList>
6. ReportCaster RESTful Web Service Requests

<ax224:firstTask xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:procedureId/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:type>0</ax224:type>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:formatInFex>false</ax224:formatInFex>
  <ax224:parameterList xsi:nil="true"/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:firstTask>

<ax224:ibfsId>6dff2b49182451463819e9f1c5900a9a12d5</ax224:ibfsId>

<ax224:ibfsPath/>
<ax224:id>S23f65030s728as482asa632s879fd9f6a727</ax224:id>
<ax224:lastModified>2014-03-11T18:27:46.710-04:00</ax224:lastModified>
<ax224:lastTimeExecuted>1970-01-01T00:00:00.000-05:00</ax224:lastTimeExecuted>

<ax224:notification xsi:type="ax224:Notification">
  <ax224:addressForBriefNotification/>
  <ax224:addressForFullNotification/>
  <ax224:description/>
  <ax224:from/>
  <ax224:subject/>
  <ax224:type>INACTIVE</ax224:type>
</ax224:notification>
<ax224:owner>admin</ax224:owner>
  <ax224:priority>3</ax224:priority>
  <ax224:statusLastExecuted/>
  <ax224:summary/>
  <ax224:taskList xsi:type="ax224:TaskWFServerProcedure">
    <ax224:description>WebFocus Server Procedure task</ax224:description>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:procedureId/>
    <ax224:procedureName/>
    <ax224:reportName/>
    <ax224:taskRetry xsi:nil="true"/>
    <ax224:type>0</ax224:type>
    <ax224:allowFormatList xsi:nil="true"/>
    <ax224:burst>false</ax224:burst>
    <ax224:execId/>
    <ax224:execPassword/>
    <ax224:firstPostProcessingProcedure/>
    <ax224:firstPreProcessingProcedure/>
    <ax224:formatInFex>false</ax224:formatInFex>
    <ax224:parameterList xsi:nil="true"/>
    <ax224:secondPostProcessingProcedure/>
    <ax224:secondPreProcessingProcedure/>
    <ax224:sendFormat>HTML</ax224:sendFormat>
    <ax224:serverName>EDASERVE</ax224:serverName>
  </ax224:taskList>
  <ax224:timeInfo xsi:type="ax224:TimeInfoOnce">
    <ax224:description/>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:name/>
    <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
    <ax224:startTIme>2014-03-11T18:27:46.710-04:00</ax224:startTIme>
    <ax224:type>0</ax224:type>
  </ax224:timeInfo>
  <ax224:timeInfoList xsi:type="ax224:TimeInfoOnce">
    <ax224:description/>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:name/>
    <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
    <ax224:startTIme>2014-03-11T18:27:46.710-04:00</ax224:startTIme>
    <ax224:type>0</ax224:type>
  </ax224:timeInfoList>
<ax224:traceType>0</ax224:traceType>
</ax226:startTime>
<ax226:status>1</ax226:status>
</ns:return>
<ns:return xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ax226:Job">
<ax226:distributionServerName xsi:nil="true"/>
<ax226:fullyQualifiedServerName xsi:nil="true"/>
<ax226:id>J07e3e5b8j0608j49bfj823ajc00d8768a7ba</ax226:id>
<ax226:schedule xsi:type="ax224:Schedule">
<ax224:IBFSObjectType>113</ax224:IBFSObjectType>
<ax224:active>true</ax224:active>
<ax224:compressedReport>false</ax224:compressedReport>
<ax224:deleteJobAfterRun>false</ax224:deleteJobAfterRun>
<ax224:description>Carinst Report 2</ax224:description>
<ax224:distribution xsi:type="ax224:DistributionEmail">
<ax224:description/>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:type>EMAIL</ax224:type>
<ax224:authEnabled>false</ax224:authEnabled>
<ax224:authPassword/>
<ax224:authUserId/>
<ax224:destination xsi:type="ax224:Destination">
<ax224:distributionFile/>
<ax224:distributionList/>
<ax224:distributionListFullPath/>
<ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
<ax224:password/>
<ax224:procedureName/>
<ax224:serverName/>
<ax224:userName/>
</ax224:dynamicAddress>
<ax224:singleAddress/>
<ax224:type>DISTRIBUTION_LIST</ax224:type>
</ax224:destination>
6. ReportCaster RESTful Web Service Requests

<ax224:firstTask xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:procedureId/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:type>0</ax224:type>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:firstPostProcessingProcedure/>
  <ax224:firstPreProcessingProcedure/>
  <ax224:formatInFex>false</ax224:formatInFex>
  <ax224:parameterList xsi:nil="true"/>
  <ax224:secondPostProcessingProcedure/>
  <ax224:secondPreProcessingProcedure/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:firstTask>

<ax224:ibfsId>6dff2b49182451463819e9f1c5900a9a12d5</ax224:ibfsId>
<ax224:ibfsPath/>
<ax224:id>S23f65030s728as482asa632s879fd9f6a727</ax224:id>
<ax224:lastModified>2014-03-11T18:27:46.710-04:00</ax224:lastModified>
<ax224:lastTimeExecuted>1970-01-01T00:00:00.000-05:00</ax224:lastTimeExecuted>
<ax224:name/>
<ax224:notification xsi:type="ax224:Notification">
  <ax224:addressForBriefNotification/>
  <ax224:addressForFullNotification/>
  <ax224:description/>
  <ax224:from/>
  <ax224:id/>
  <ax224:subject/>
  <ax224:type>INACTIVE</ax224:type>
</ax224:notification>
Listing Running Jobs for an Owner

This RESTful web service request can be used to list the ReportCaster jobs that are running for a specific schedule owner.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/ConsoleServiceREST/getRunningJobsByOwner?owner=owner

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **owner**
  
  Is the owner of the ReportCaster schedule.

**Example:**

In the following example, a list of ReportCaster jobs that are running for the owner named admin is retrieved.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/getRunningJobsByOwner?owner=admin

**Response:**
6. ReportCaster RESTful Web Service Requests

```
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distribution>
<ax224:distributionList xsi:type="ax224:DistributionEmail">
<ax224:description/>
<ax224:disabled>false</ax224:disabled>
<ax224:id/>
<ax224:type>EMAIL</ax224:type>
<ax224:authEnabled>false</ax224:authEnabled>
<ax224:authPassword/>
<ax224:authUserId/>
<ax224:destination xsi:type="ax224:Destination">
<ax224:distributionFile/>
<ax224:distributionList/>
<ax224:distributionListFullPath/>
<ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
<ax224:password/>
<ax224:procedureName/>
<ax224:serverName/>
<ax224:userName/>
</ax224:dynamicAddress>
<ax224:singleAddress/>
<ax224:type>DISTRIBUTION_LIST</ax224:type>
</ax224:destination>
<ax224:inlineMessage/>
<ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
<ax224:mailFrom/>
<ax224:mailReplyAddress/>
<ax224:mailServerName/>
<ax224:mailSubject/>
<ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
<ax224:sslEnabled>false</ax224:sslEnabled>
<ax224:tlsEnabled>false</ax224:tlsEnabled>
<ax224:zipFileName/>
<ax224:zipResult>false</ax224:zipResult>
</ax224:distributionList>
```
6. ReportCaster RESTful Web Service Requests

```xml
<ax224:taskList xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:procedureId/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:type>0</ax224:type>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:firstPostProcessingProcedure/>
  <ax224:firstPreProcessingProcedure/>
  <ax224:formatInFex>false</ax224:formatInFex>
  <ax224:parameterList xsi:nil="true"/>
  <ax224:secondPostProcessingProcedure/>
  <ax224:secondPreProcessingProcedure/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:taskList>

<ax224:timeInfo xsi:type="ax224:TimeInfoOnce">
  <ax224:description/>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:name/>
  <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
  <ax224:startTime>2014-02-24T14:42:43.031-05:00</ax224:startTime>
</ax224:timeInfo>

<ax224:timeInfoList xsi:type="ax224:TimeInfoOnce">
  <ax224:description/>
  <ax224:disabled>false</ax224:disabled>
  <ax224:id/>
  <ax224:name/>
  <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
  <ax224:startTime>2014-02-24T14:42:43.031-05:00</ax224:startTime>
</ax224:timeInfoList>
</ax224:schedule>
```
6. ReportCaster RESTful Web Service Requests

```xml
<ax224:distributionList xsi:type="ax224:DistributionEmail">
    <ax224:description/>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:type>EMAIL</ax224:type>
    <ax224:authEnabled>false</ax224:authEnabled>
    <ax224:authPassword/>
    <ax224:authUserId/>
    <ax224:destination xsi:type="ax224:Destination">
        <ax224:distributionFile/>
        <ax224:distributionList/>
        <ax224:distributionListFullPath/>
        <ax224:dynamicAddress xsi:type="ax224:DynamicAddress">
            <ax224:password/>
            <ax224:procedureName/>
            <ax224:serverName/>
            <ax224:userName/>
        </ax224:dynamicAddress>
        <ax224:singleAddress/>
        <ax224:type>DISTRIBUTION_LIST</ax224:type>
    </ax224:destination>
    <ax224:inlineMessage/>
    <ax224:inlineTaskIndex>0</ax224:inlineTaskIndex>
    <ax224:mailFrom/>
    <ax224:mailReplyAddress/>
    <ax224:mailServerName/>
    <ax224:mailSubject/>
    <ax224:sendingReportAsAttachment>true</ax224:sendingReportAsAttachment>
    <ax224:sslEnabled>false</ax224:sslEnabled>
    <ax224:tlsEnabled>false</ax224:tlsEnabled>
    <ax224:zipFileName/>
    <ax224:zipResult>false</ax224:zipResult>
</ax224:distributionList>
```
<ax224:firstTask xsi:type="ax224:TaskWFServerProcedure">
    <ax224:description>WebFocus Server Procedure task</ax224:description>
    <ax224:disabled>false</ax224:disabled>
    <ax224:id/>
    <ax224:procedureId/>
    <ax224:procedureName/>
    <ax224:reportName/>
    <ax224:taskRetry xsi:nil="true"/>
    <ax224:type>0</ax224:type>
    <ax224:allowFormatList xsi:nil="true"/>
    <ax224:burst>false</ax224:burst>
    <ax224:execId/>
    <ax224:execPassword/>
    <ax224:firstPostProcessingProcedure/>
    <ax224:firstPreProcessingProcedure/>
    <ax224:formatInFex>false</ax224:formatInFex>
    <ax224:parameterList xsi:nil="true"/>
    <ax224:secondPostProcessingProcedure/>
    <ax224:secondPreProcessingProcedure/>
    <ax224:sendFormat>HTML</ax224:sendFormat>
    <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:firstTask>
<ax224:ibfsId>6df2b49182451463819e9f1c5900a9a12d5</ax224:ibfsId>
<ax224:ibfsPath/>
<ax224:id>S23f65030s728as482asa632s879fd9f6a727</ax224:id>
<ax224:lastModified>2014-02-24T14:42:43.032-05:00</ax224:lastModified>
<ax224:lastTimeExecuted>1970-01-01T00:00:00.000-05:00</ax224:lastTimeExecuted>
<ax224:name/>
<ax224:notification xsi:type="ax224:Notification">
    <ax224:addressForBriefNotification/>
    <ax224:addressForFullNotification/>
    <ax224:from/>
    <ax224:id/>
    <ax224:subject/>
    <ax224:type>INACTIVE</ax224:type>
</ax224:notification>
<ax224:owner>admin</ax224:owner>
<ax224:priority>3</ax224:priority>
<ax224:statusLastExecuted/>
<ax224:summary/>
6. ReportCaster RESTful Web Service Requests

```xml
<ax224:taskList xsi:type="ax224:TaskWFServerProcedure">
  <ax224:description>WebFocus Server Procedure task</ax224:description>
  <ax224:id/>
  <ax224:procedureName/>
  <ax224:reportName/>
  <ax224:taskRetry xsi:nil="true"/>
  <ax224:type>0</ax224:type>
  <ax224:allowFormatList xsi:nil="true"/>
  <ax224:burst>false</ax224:burst>
  <ax224:execId/>
  <ax224:execPassword/>
  <ax224:firstPostProcessingProcedure/>
  <ax224:firstPreProcessingProcedure/>
  <ax224:formatInFex>false</ax224:formatInFex>
  <ax224:parameterList xsi:nil="true"/>
  <ax224:secondPostProcessingProcedure/>
  <ax224:secondPreProcessingProcedure/>
  <ax224:sendFormat>HTML</ax224:sendFormat>
  <ax224:serverName>EDASERVE</ax224:serverName>
</ax224:taskList>

<ax224:timeInfo xsi:type="ax224:TimeInfoOnce">
  <ax224:description/>
  <ax224:id/>
  <ax224:name/>
  <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
  <ax224:startTime>2014-02-24T14:42:43.031-05:00</ax224:startTime>
</ax224:timeInfo>

<ax224:timeInfoList xsi:type="ax224:TimeInfoOnce">
  <ax224:description/>
  <ax224:id/>
  <ax224:name/>
  <ax224:nextRunTime>1970-01-01T00:00:00.000-05:00</ax224:nextRunTime>
  <ax224:startTime>2014-02-24T14:42:43.031-05:00</ax224:startTime>
</ax224:timeInfoList>

<ax224:traceType>0</ax224:traceType>
</ax224:schedule>
```
Removing a Job From the Job Queue

This RESTful web service request can be used to remove a specific ReportCaster job from the job queue.

**HTTP Method:** GET

**REST URL Format:**

http://host:port/ibi_apps/services/ConsoleServiceREST/removeJobFromQueue?jobId=jobId
where:

*host*

Is the name of the system where WebFOCUS is installed.

*port*

Is the port number used by WebFOCUS.

*jobId*

Is a unique identifier for the ReportCaster job.

**Example:**

In the following example, the ReportCaster job with a job ID of Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5 is removed from the job queue.

**Request:**

http://localhost:8080/ibi_apps/services/ConsoleServiceREST/removeJobFromQueue?jobId=Jc12b4443jb1f8j4c19j90aaj7ba31ac4dbf5

**Response:**

```xml
<ns:removeJobFromQueueResponse xmlns:ns="http://ws.api.broker.ibi">
  <ns:return>1</ns:return>
</ns:removeJobFromQueueResponse>
```
This appendix describes how to use the Test page to test and debug the functionality of RESTful web services.

**In this chapter:**
- Accessing the Test Page
- Using the Test Page

**Accessing the Test Page**

Enter the following URL in your browser to access the Test page:

```
http://host:port/ibi_apps/rs?IBIRS_action=TEST
```

where:
- **host**
  
  Is the name of the system where WebFOCUS is installed.
- **port**
  
  Is the port number used by WebFOCUS.

The Test page opens in your browser, as shown in the following image.
Using the Test Page

Four buttons (ibfs, impex, templates, and utils) are available at the top of the Test page. Clicking a specific button will display a list of RESTful web services functionality that can be tested.

- **ibfs.** The majority of the RESTful web services functionality is included in this category. Change Management and Template functionality are excluded.

- **impex.** Functions that support Change Management are included in this category. Change Management Export and Import are included.

- **templates.** Functions that support Templates are included in this category. Creating and Running a Template are included.

- **utils.** Functions that support Utilities are included in this category. Expanding and Compacting a Policy are included.

Within each category of RESTful web services, each of the RESTful web services functionality tests are based on the IBIRS_action parameter value. Every RESTful web service includes this parameter. The label of the button on each test within the Test page represents the parameter value for the IBIRS_action parameter. To display the form for a specific test based on IBIRS_action, click the appropriate link at the top of the Test page (for example, put). Note that the parameter name is displayed above each field or drop-down list that is required to test the particular functionality.

When a particular parameter requires a path, the URL from the Test page, excluding IBIRS_action=TEST along with the category name is assumed in making the REST request. In Example 1 from *Listing Folders and Subfolders* on page 47, the path can be represented in the field from the Test page test as /WFC/Repository.

In order for any of the tests to work successfully, you must be authenticated to WebFOCUS. This can be done by logging on to the WebFOCUS Business Intelligence Portal or by entering the credentials in the signOn section of the Test page and clicking the signOn button.
Example:

In the following example, a test is performed to add a Group based on the example from *Adding and Updating a Group* on page 141.
This appendix describes an alternative method that can be used to call WebFOCUS RESTful web service requests.

**In this chapter:**

- Calling WebFOCUS RESTful Web Service Requests

### Calling WebFOCUS RESTful Web Service Requests

For each WebFOCUS RESTful web service request, the portion of the URL path following `rs` can be represented as a parameter. `IBIRS_service` represents the parameter for the category and `IBIRS_path` represents the path to the specific functionality that is being performed.

**Example:**

In the following example, the REST URL for Example 1 from *Listing Folders and Subfolders* on page 47 shows the REST URL as:

```
http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository?IBIRS_action=get
```

This request can also be sent as follows:

```
http://localhost:8080/ibi_apps/rs?IBIRS_action=get&IBIRS_path=/WFC/Repository&IBIRS_service=ibfs
```
This appendix provides Visual Basic .NET, Java, HTML and jQuery code examples on how to create WebFOCUS RESTful web service requests.

**In this chapter:**

- Signing In to WebFOCUS
- Listing Folders From WebFOCUS
- Running a WebFOCUS Report
- Handling Drill-downs, Active Cache, and On-Demand Paging Reports
- Parsing the XML Response of a SignOn Request to Obtain the CSRF Name and Value
- Embedding Charts to be Responsive

**Signing In to WebFOCUS**

This section provides code examples that demonstrate how to sign in to WebFOCUS.
Visual Basic .NET Example

Imports System.Net
Imports System.IO
Imports System.Text
Dim cookies As New CookieContainer
Dim webStream As Stream
Dim webResponse As String = ""
Dim request As HttpWebRequest
Dim response As HttpWebResponse
Dim postData As String
request = WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs")
request.Method = "POST"
postData = "IBIRS_action=signOn&IBIRS_userName=admin&IBIRS_password=admin"
request.CookieContainer = cookies
Dim byteArray As Byte() = Encoding.UTF8.GetBytes(postData)
request.ContentType = "application/x-www-form-urlencoded"
request.ContentLength = byteArray.Length
Dim dataStream As Stream = request.GetRequestStream()
dataStream.Write(byteArray, 0, byteArray.Length)
dataStream.Close()
response = request.GetResponse()
webStream = response.GetResponseStream()
Dim webStreamReader As New StreamReader(webStream)
While webStreamReader.Peek >= 0
    webResponse = webStreamReader.ReadToEnd()
End While
Java Example

import java.awt.Frame;
import java.io.BufferedReader;
import java.io.InputStream;
import java.io.InputStreamReader;
import org.apache.commons.httpclient.*;
import org.apache.commons.httpclient.methods.*;
String request = "http://localhost:8080/ibi_apps/rs/ibfs";
HttpClient client = new HttpClient();
PostMethod method = new PostMethod(request);
method.addParameter("IBIRS_action","signOn");
method.addParameter("IBIRS_userName","admin");
method.addParameter("IBIRS_password","admin");
int statusCode = client.executeMethod(method);
Header[] cookies = null;
InputStream rstream = null;
rstream = method.getResponseBodyAsStream();
cookies = method.getResponseHeaders("Set-Cookie");
BufferedReader br = new BufferedReader(new InputStreamReader(rstream));
String line;
while ((line = br.readLine()) != null) {
    System.out.println(line);
}
br.close();
HTML and jQuery Example

```html
<!DOCTYPE html>
<html>
<head>
  <title></title>
  <meta charset="utf-8" />
  <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
  <script type="text/javascript" src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>

  <script type="text/javascript">
    var csrf_name;
    var csrf_value;
    $(document).ready(function (IBIRS_action, IBIRS_userName, IBIRS_password) {
      var contentType = "application/x-www-form-urlencoded; charset=utf-8";
      if (window.XDomainRequest)
        contentType = "text/plain";
      var divToBeWorkedOn = "#AjaxPlaceHolder";
      var webMethod = "http://machine:port/ibi_apps/rs/ibfs";
      var IBIRS_action = "signOn";
      var IBIRS_userName = "admin";
      var IBIRS_password = "admin";
      var parameters = 'IBIRS_action=' + IBIRS_action + '&IBIRS_userName=' + IBIRS_userName + '&IBIRS_password=' + IBIRS_password;
      $.ajax(
        type: "POST",
        url: webMethod,
        data: parameters,
        dataType: "xml",
        contentType: contentType,
        success: function(xhr, status) {
          alert(xhr.responseText);
          alert(xhr.getAllResponseHeaders());
        },
        error:function(jqXHR, textStatus, errorThrown)
        {
          alert("You can not send Cross Domain AJAX requests: " + errorThrown);
        }
      });
    });
  </script>
</head>
</html>
```
9. Visual Basic .NET, Java, HTML and jQuery Code Examples

</script>
</head>
<body>
<div id="AjaxPlaceHolder">
<div align="center"><img src="logo_webfocus.png" id="load" width="140"
height="60" align="middle" /></div>
</div>
<div></div>
</body>
</html>

Listing Folders From WebFOCUS
This section provides code examples that demonstrate how to retrieve a list of the top-level
folders from WebFOCUS. A successful sign-on request is a prerequisite for running this
example, including retrieving the HTTP Header cookies from its response.

Visual Basic .NET Example
Imports System.Net
Imports System.IO
Imports System.Text
Dim request3 As HttpWebRequest
Dim response3 As HttpWebResponse
Dim webStream3 As Stream
Dim webResponse3 As String = ""
Dim tempfile As String
request3 = WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs/WFC/
Repository?IBIRS_action=get")
request3.Method = "GET"
'cookies is defined as CookieContainer in the Signing-On to WebFOCUS example
request3.CookieContainer = cookies
response3 = request3.GetResponse()
webStream3 = response3.GetResponseStream()
Dim webStreamReader3 As New StreamReader(webStream3)
tempfile = "c:\temp\Folders.xml"
FileOpen(1, tempfile, OpenMode.Output)
While webStreamReader3.Peek >= 0
webResponse3 = webStreamReader3.ReadToEnd()
PrintLine(1, webResponse3)
End While
FileClose(1)
Dim xmlElem = XElement.Parse(webResponse3)

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Java Example

```java
import java.awt.Frame;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import org.apache.commons.httpclient.*;
import org.apache.commons.httpclient.methods.*;
String request3 = "http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository?IBIRS_action=get";
GetMethod method_getFolders = new GetMethod(request3);
// cookies is defined as Header[] in the Signing-On to WebFOCUS example
for(int h=0; h<cookies.length; h++){
    method_getFolders.addRequestHeader(cookies[h].getName(), cookies[h].getValue());
}
// client is defined as HttpClient in the Signing-On to WebFOCUS example
int statusCode3 = client.executeMethod(method_getFolders);
InputStream rstream3 = null;
rstream3 = method_getFolders.getResponseBodyAsStream();
File tempfile = new File("c:\temp\Folders.xml");
FileOutputStream fos = new FileOutputStream(tempfile);
PrintWriter out=new PrintWriter(fos);
BufferedReader br3 = new BufferedReader(new InputStreamReader(rstream3));
String line3;
String newOutput = null;
while ((line3 = br3.readLine()) != null) {
    newOutput = line3;
    out.println(newOutput);
    System.out.println(line3);
}
br3.close();
out.close();
```
HTML and jQuery Example

```html
<!DOCTYPE html>
<html>
<head>
    <title></title>
    <meta charset="utf-8" />
    <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
    <script type=©text/javascript© src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>
    <script type="text/javascript">
        var csrf_name;
        var csrf_value;
        var frameToBeWorkedOn = "#AjaxPlaceHolder";
        var contentType = "application/x-www-form-urlencoded; charset=utf-8";
        $(document).ready(function (IBIRS_action, IBIRS_userName, IBIRS_password) {
            if (window.XDomainRequest) {
                contentType = "text/plain";
            }
            var webMethod = "http://machine:port/ibi_apps/rs/ibfs";
            var IBIRS_action = "signOn";
            var IBIRS_userName = "admin";
            var IBIRS_password = "admin";
            var parameters = 'IBIRS_action=' + IBIRS_action + '&IBIRS_userName=' + IBIRS_userName + '&IBIRS_password=' + IBIRS_password;
            $.ajax({
                type: "POST",
                url: webMethod,
                data: parameters,
                dataType: "xml",
                xhrFields: {
                    withCredentials: true
                },
                crossDomain: true,
                contentType: contentType,
                success: listFolders,
                error:function(jqXHR,textStatus,errorThrown)
                {
                    alert("You can not send Cross Domain AJAX requests: " + errorThrown);
                }
            });
        });
        function listFolders() {
            if (window.XDomainRequest) {
                contentType = "text";
            }
        }
    });
```
Running a WebFOCUS Report

This section provides code examples that demonstrate how to run the Sales_for_a_Specific_Country WebFOCUS report, which resides in the RESTful_Web_Services/Car_Reports folder. A successful sign-on request is a prerequisite for running this example, including retrieving the HTTP Header cookies from its response.
9. Visual Basic .NET, Java, HTML and jQuery Code Examples

Visual Basic .NET Example
Imports System.Net
Imports System.IO
Imports System.Text
Dim request2 As HttpWebRequest
Dim response2 As HttpWebResponse
Dim webStream2 As Stream
Dim webResponse2 As String = ""
request2 =
WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/
RESTful_Web_Services/Car_Reports/Sales_for_a_Specific_Country.fex")
request2.Method = "POST"
'cookies is defined as CookieContainer in the Signing-On to WebFOCUS example
request2.CookieContainer = cookies
postData = "IBIRS_action=run&COUNTRY=ENGLAND"
Dim byteArray2 As Byte() = Encoding.UTF8.GetBytes(postData)
request2.ContentType = "application/x-www-form-urlencoded"
request2.ContentLength = byteArray2.Length
Dim dataStream2 As Stream = request2.GetRequestStream()
dataStream2.Write(byteArray2, 0, byteArray2.Length)
dataStream2.Close()
response2 = request2.GetResponse()
webStream2 = response2.GetResponseStream()
Dim webStreamReader2 As New StreamReader(webStream2)
While webStreamReader2.Peek >= 0
webResponse2 = webStreamReader2.ReadToEnd()
End While
WebBrowser1.DocumentText = webResponse2

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import java.awt.Frame;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import org.apache.commons.httpclient.*;
import org.apache.commons.httpclient.methods.*;
String request2 = "http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/RESTful_Web_Services/Car_Reports/Sales_for_a_Specific_Country.fex";

PostMethod method_report = new PostMethod(request2);

method_report.addParameter("IBIRS_action","run");
method_report.addParameter("COUNTRY","ENGLAND");
// cookies is defined as Header[] in the Signing-On to WebFOCUS example
for(int h=0; h<cookies.length; h++){
    System.out.println(cookies[h]);
    method_report.addRequestHeader(cookies[h].getName(), cookies[h].getValue());
}

// client is defined as HttpClient in the Signing-On to WebFOCUS example
int statusCode2 = client.executeMethod(method_report);
InputStream rstream2 = null;
rstream2 = method_report.getResponseBodyAsStream();

File tempfile = new File("c:\temp\Report.htm");
FileOutputStream fos = new FileOutputStream(tempfile);
PrintWriter out=new PrintWriter(fos);
BufferedReader br2 = new BufferedReader(new InputStreamReader(rstream2));
String line2;
String newOutput = null;

while ((line2 = br2.readLine()) != null) {
    newOutput = line2;
    out.println(newOutput);
    System.out.println(line2);
}
br2.close();
out.close();
HTML and jQuery Example

```html
<!DOCTYPE html>
<html>
<head>
  <title></title>
  <meta charset="utf-8" />
  <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
  <script type="text/javascript" src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>
  <script type="text/javascript">
    var csrf_name;
    var csrf_value;
    var frameToBeWorkedOn = "#AjaxPlaceHolder";
    var contentType = "application/x-www-form-urlencoded; charset=utf-8";
    $(document).ready(function (IBIRS_action, IBIRS_userName, IBIRS_password) {
      if (window.XDomainRequest) {
        contentType = "text/plain";
      }
      var webMethod = "http://machine:port/ibi_apps/rs";
      var IBIRS_action = "signOn";
      var IBIRS_userName = "admin";
      var IBIRS_password = "admin";
      var parameters = 'IBIRS_action=' + IBIRS_action + '&IBIRS_userName=' + IBIRS_userName + '&IBIRS_password=' + IBIRS_password;
      $.ajax({
        type: "POST",
        url: webMethod,
        data: parameters,
        dataType: "xml",
        xhrFields: {
          withCredentials: true
        },
        crossDomain: true,
        contentType: contentType,
        success: xmlParser,
        error: function(jqXHR, textStatus, errorThrown) {
          alert("You can not send Cross Domain AJAX requests: " + errorThrown);
        }
      });
      function xmlParser(xml) {
```
function runReport() {
    if (window.XMLHttpRequest)
        contentType = "text/plain";
    var IBIRS_action = "run";
    var BUSINESS_REGION = "North America";
    var BUSINESS_SUB_REGION = "MidWest";
    var parameters = 'IBIRS_action=' + IBIRS_action + 'BUSINESS_REGION=' + BUSINESS_REGION + 'BUSINESS_SUB_REGION=' + BUSINESS_SUB_REGION + 'csrf_name=' + csrfs_value + 'csrf_value=' + csrfs_value;
    $.ajax({
        type: "POST",
        url: webMethod,
        data: parameters,
        dataType: "html",
        xhrFields: {
            withCredentials: true
        },
        crossDomain: true,
        contentType: contentType,
        /*
        success: alert("success"), */
        complete: function(xhr, status) {
            /*
            alert(xhr.responseText); */
            /*
            $("AjaxPlaceHolder".html(xhr.responseText)); */
            document.AjaxPlaceHolder.document.body.innerHTML = xhr.responseText;
        },
        error: function(jqXHR, textStatus, errorThrown) {
            alert("You can not send Cross Domain AJAX requests: " + errorThrown);
        }
    });
}
</script>
</head>
<body>
    <iframe id="AjaxPlaceHolder" name="AjaxPlaceHolder" height="600" width="900" align="middle" style="position:absolute; top: 5px; left: 5px"></iframe>
</body>
</html>
Handling Drill-downs, Active Cache, and On-Demand Paging Reports

This section provides code examples that demonstrate how to run an On-Demand Paging report called ODP_Report.fex, which resides in the RESTful_Web_Services/Car_Reports folder.

The examples include:

- A signOn page, which is used to run the initial request.
- A WebForm2 page, which is used to make the additional RESTful Web Services requests required for the paging within the WebFOCUS report.

The WebForm2 page can also be used as is to handle Drill-down and Active Cache paging requests.

The signOn page contains the RESTful Web Service request to run the initial WebFOCUS report. The IBIRS_clientPath parameter is set so that all additional RESTful Web Services requests needed, whether paging, image retrieval, or paging will be routed through the client application. For example:

IBIRS_clientPath=http://localhost:51970/WebForm2.aspx

Visual Basic .NET Example (signOn.aspx and WebForm2.aspx)

signOn.aspx

Imports System.Net
Imports System.IO
Public Class signOn
    Inherits System.Web.UI.Page
    Dim cookies As New CookieContainer
    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
        Handles Me.Load
        Dim webStream As Stream
        Dim webResponse As String = ""
        Dim request As HttpWebRequest
        Dim response1 As HttpWebResponse
        Dim postData As String
        request = WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs")
        request.Method = "POST"
        postData = "IBIRS_action=signOn&IBIRS_userName=admin&IBIRS_password=admin"
        request.CookieContainer = cookies
        request.Method = "POST"
        postData = "IBIRS_action=signOn&IBIRS_userName=admin&IBIRS_password=admin"
        request.CookieContainer = cookies
    End Sub
End Class
Dim byteArray As Byte() = Encoding.UTF8.GetBytes(postData)
request.ContentType = "application/x-www-form-urlencoded"
request.ContentLength = byteArray.Length
Dim dataStream As Stream = request.GetRequestStream()
dataStream.Write(byteArray, 0, byteArray.Length)
dataStream.Close()
response1 = request.GetResponse()
webStream = response1.GetResponseStream()
Dim request2 As HttpWebRequest
Dim response2 As HttpWebResponse
Dim dataStream2 As Stream
Dim webResponse2 As String = ""
dim uri As New System.Uri("http://localhost:8080/ibi_apps/rs")
request2 = WebRequest.Create(uri)
request2.Method = "POST"
request2.CookieContainer = cookies
postData = "IBIRS_action=run" + 
    "&IBIRS_clientPath=/WebForm2.aspx" + 
    "&IBIRS_path=/WFC/Repository/RESTful_Web_Services/Car_Reports/ODP_Report.fex" + 
    "&IBIRS_service=ibfs" + 
    "&IBIRS_htmlPath=http://localhost:8080/ibi_apps/ibi_html"
Dim byteArray2 As Byte() = Encoding.UTF8.GetBytes(postData)
request2.ContentType = "application/x-www-form-urlencoded"
request2.ContentLength = byteArray2.Length
Dim dataStream2 As Stream = request2.GetRequestStream()
dataStream2.Write(byteArray2, 0, byteArray2.Length)
dataStream2.Close()
response2 = request2.GetResponse()

Dim cookieArray As New CookieCollection
cookieArray = cookies.GetCookies(uri)
For i = 0 To cookies.Count - 1
    Dim aCookie As New HttpCookie(cookieArray(i).Name)
    aCookie.Value = cookieArray(i).Value
    Response.Cookies.Add(aCookie)
Next i
webStream2 = response2.GetResponseStream()
Dim webStreamReader2 As New StreamReader(webStream2)
While webStreamReader2.Peek >= 0
    webResponse2 = webStreamReader2.ReadToEnd()
End While
Response.Output.Write(webResponse2)
End Sub
End Class

WebForm2.aspx
Imports System.Net
Imports System.IO
Public Class WebForm2
    Inherits System.Web.UI.Page
    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
        Handles Me.Load
        Dim tDrillURL As String = Request.ServerVariables("QUERY_STRING")
        Dim i As Integer
        Dim qParm As String
        Dim qValue As String
        Dim IBIRS_path As String = ""
        Dim Clicked_On As String = ""
        Dim cookies As New CookieContainer
        Dim request3 As HttpWebRequest
        Dim response3 As HttpWebResponse
        Dim webStream3 As Stream
        Dim webResponse3 As String = ""
        Dim getData As String
        Dim uris As String = "http://localhost.:8080/ibi_apps/rs"
        Dim uri As New System.Uri(uris)
        getData = "http://localhost.:8080/ibi_apps/rs?" + _
            tDrillURL + _
            "&IBIRS_clientPath=/WebForm2.aspx" + _
            "&IBIRS_htmlPath=http://localhost:8080/ibi_apps/ibi_html"
        request3 = WebRequest.Create(getData)
        request3.Method = "GET"
        Dim j As Integer
        For j = 0 To Request.Cookies.Count - 1
            Dim rCookie As New System.Net.Cookie
            rCookie.Name = Request.Cookies(j).Name
            rCookie.Value = Request.Cookies(j).Value
            cookies.Add(uri, rCookie)
            Dim aCookie As New HttpCookie(Request.Cookies(j).Name)
            aCookie.Value = Request.Cookies(j).Value
            Response.Cookies.Add(aCookie)
        Next j
        request3.CookieContainer = cookies
        response3 = request3.GetResponse()
        webStream3 = response3.GetResponseStream()
        Dim binaryReader3 As New BinaryReader(webStream3)
        Dim readData() As Byte = Nothing
        Dim byteArray() As Byte = Nothing
        Dim byteStart As Integer = 0
        Dim byteLength As Integer
While (True)
    readData = binaryReader3.ReadBytes(4096)
    If (readData.Length = 0) Then
        Exit While
    End If
    byteLength = readData.Length
    ReDim Preserve byteArray(byteLength + byteStart - 1)
    Array.Copy(readData, 0, byteArray, byteStart, byteLength)
    byteStart = byteStart + byteLength
End While
Response.OutputStream.Write(byteArray, 0, byteArray.Length)

End Sub
End Class

Java Example (signOn.jsp and WebForm2.jsp)

signOn.jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1" pageEncoding="ISO-8859-1" session="true" import="
java.io.BufferedReader,
java.io.IOException,
java.io.InputStream,
java.io.InputStreamReader,
java.io.File,
java.io.FileOutputStream,
java.io.PrintWriter,
java.net.URI,
java.net.URISyntaxException,
org.apache.commons.httpclient.*,
org.apache.commons.httpclient.methods.*, sax.xml.parser.SaxHandler,
javax.xml.parsers.ParserConfigurationException,
javax.xml.parsers.SAXParser,
javax.xml.parsers.SAXParserFactory,
org.xml.sax.SAXException
"%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<%
String request1 = "http://localhost:8080/ibi_apps/rs/ibfs";
HttpClient client = new HttpClient();
PostMethod method = new PostMethod(request1);
method.addParameter("IBIRS_action", "signOn");
method.addParameter("IBIRS_userName", "admin");
method.addParameter("IBIRS_password", "admin");

client.executeMethod(method);
Header[] cookies = null;
InputStream response1 = null;
response1 = method.getResponseBodyAsStream();
cookies = method.getResponseHeaders("Set-Cookie");
SAXParserFactory factory = SAXParserFactory.newInstance();
SAXParser parser = factory.newSAXParser();
SaxHandler handler   = new SaxHandler();
parser.parse(response1, handler);
String csrfName = handler.getResults()[0].toString();
String csrfValue = handler.getResults()[1].toString();
//    System.out.println("csrfName = " + csrfName);
//    System.out.println("csrfValue = " + csrfValue);
}
String request2 = "http://localhost:8080/ibi_apps/rs";
PostMethod method_report = new PostMethod(request2);
method_report.addParameter("IBIRS_action","run");
method_report.addParameter("IBIRS_clientPath","/drillDownJSP/WebForm2.jsp");
method_report.addParameter("IBIRS_path","/EDA/EDASERVE/ibisamp/carinst.fex");
method_report.addParameter("IBIRS_service","ibfs");
method_report.addParameter("IBIRS_htmlPath","http://localhost:8080/ibi_apps/ibi_html");
method_report.addParameter(csrfName,csrfValue);

// cookies is defined as Header[] in the Signing-On to WebFOCUS example
for(int h=0; h<cookies.length; h++){
    // System.out.println(cookies[h]);
    method_report.addRequestHeader(cookies[h].getName(), cookies[h].getValue());
    String str = cookies[h].getName() + cookies[h].getValue();
    //write cookie to a disk file and then read it back in the next JSP
    String nameOfTextFile = "c:/temp/jsessionId.txt";
    try {
        PrintWriter pw = new PrintWriter(new FileOutputStream(nameOfTextFile));
        pw.println(str);
        //clean up
        pw.close();
    } catch(IOException e) {
        out.println(e.getMessage());
    }
}

method_report.setRequestHeader("Content-type", "application/x-www-form-urlencoded");
// client is defined as HttpClient in the Signing-On to WebFOCUS example
client.executeMethod(method_report);
InputStream response2 = null;
response2 = method_report.getResponseBodyAsStream();
BufferedReader br2 = new BufferedReader(new InputStreamReader(response2));
String line2;
String newOutput = null;
while ((line2 = br2.readLine()) != null) {
    newOutput = line2;
    out.println(newOutput);
    // System.out.println(line2);
}

 %>
String tDrillURL = "";
int i;
String qParm;
String qValue;
String IBIRS_path = "";
String Clicked_On = "";
Header[] cookies = null;
HttpClient client = new HttpClient();
tDrillURL = request.getQueryString();
//read saved cookie from text file
String txtFilePath = "c:/temp/jsessionid.txt";
BufferedReader reader = new BufferedReader(new FileReader(txtFilePath));
StringBuilder sb = new StringBuilder();
String line;
while((line = reader.readLine())!= null){
    sb.append(line);
}
//System.out.println(sb.toString());
reader.close();
String request3 = "http://localhost:8080/ibi_apps/rs";

GetMethod method_report2 = new GetMethod(request3);
method_report2.setQueryString(tDrillURL);
method_report2.getParams().setParameter("IBIRS_clientPath", "/drillDownJSP/WebForm2.jsp");
String cookie = sb.toString();
//    System.out.println("webform2 cookie before replace " + cookie);
//    cookie = cookie.replace("Set-Cookie ", "");
//    System.out.println("webform2 cookie after replace " + cookie);
method_report2.setRequestHeader("Cookie", cookie);

    }  
method_report2.setRequestHeader("Content-type", "application/x-www-form-urlencoded");

    int statusCode = client.executeMethod(method_report2);
    System.out.println(statusCode);
    InputStream response3 = null;
    response3 = method_report2.getResponseBodyAsStream();
    BufferedReader br2 = new BufferedReader(new InputStreamReader(response3));
    String line3;
    String newOutput = null;
    while ((line3 = br2.readLine()) != null) {
        newOutput = line3;
        out.println(newOutput);
    }
%

**HTML and jQuery Example (drillOne.html and drillTwo.html)**

**drillOne.html**
<!DOCTYPE html>
<html>
  <head>
    <title></title>
    <meta charset="utf-8" />
    <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
    <script type='text/javascript' src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>
    <script type="text/javascript">
      var csrf_name;
      var csrf_value;
      var frameToBeWorkedOn = "#AjaxPlaceHolder";
      var contentType = "application/x-www-form-urlencoded; charset=utf-8";
      $(document).ready(function (IBIRS_action, IBIRS_userName, IBIRS_password) {
        if (window.XDomainRequest) {
          contentType = "text/plain";
        }
        var webMethod = "http://machine:port/ibi_apps/rs";
        var IBIRS_action = "signOn";
        var IBIRS_userName = "admin";
        var IBIRS_password = "admin";
        var parameters = 'IBIRS_action=' + IBIRS_action + '&IBIRS_userName=' + IBIRS_userName + '&IBIRS_password=' + IBIRS_password;
        $.ajax({
          type: "POST",
          url: webMethod,
          data: parameters,
          dataType: "xml",
          xhrFields: {
            withCredentials: true
          },
          crossDomain: true,
          contentType: contentType,
          success: xmlParser,
          error: function (jqXHR, textStatus, errorThrown) {
            alert("You can not send Cross Domain AJAX requests: ") + errorThrown);
          }
        });
        function xmlParser(xml) {
          $(xml).find("entry").each(function () {
if ($(this).attr("key") == "IBI_CSRF_Token_Name") {
    csrf_name = $(this).attr("value");
}
if ($(this).attr("key") == "IBI_CSRF_Token_Value") {
    csrf_value = $(this).attr("value");
}
});
runReport();

function runReport() {
    if (window.XDomainRequest)
        contentType = "text/plain";
    var webMethod = "http://machine:port/ibi_apps/rs";
    var IBIRS_action = "run";
    var IBIRS_clientPath = "/src/drillTwo.html";
    var IBIRS_path = "/EDA/EDASERVE/ibisamp/carinst.fex";
    var IBIRS_service = "ibfs";
    var IBIRS_htmlPath = "http://machine:port/ibi_apps/ibi_html";
    var parameters = "IBIRS_action=run\&IBIRS_clientPath=ibi\&IBIRS_path=carinst.fex\&IBIRS_service=ibfs\&IBIRS_htmlPath=ibi_html\&csrf_name=csrf\&csrf_value=";
    $.ajax({
        type: "POST",
        url: webMethod,
        data: parameters,
        dataType: "html",
        xhrFields: {
            withCredentials: true
        },
        crossDomain: true,
        contentType: contentType,
        success: function(xhr, status) {
        alert(xhr.responseText);
        document.AjaxPlaceHolder.document.body.innerHTML = xhr.responseText;
        },
        error: function (jqXHR, textStatus, errorThrown) {
            alert("You can not send Cross Domain AJAX requests: ");
        }
    });
}</script>
</head>
<body>
<iframe id="AjaxPlaceHolder" name="AjaxPlaceHolder" height="600" width="900" align="middle" style="position:absolute; top: 5px; left: 5px"></iframe>
</body>
</html>

drillTwo.html
<html>
<head>
  <title></title>
  <meta charset="utf-8" />
  <script type="text/javascript" src="http://code.jquery.com/jquery-3.1.0.js"></script>
  <script type='text/javascript' src="http://cdnjs.cloudflare.com/ajax/libs/jquery-ajaxtransport-xdomainrequest/1.0.1/jquery.xdomainrequest.min.js"></script>
  <script type="text/javascript">
    var frameToBeWorkedOn = "#AjaxPlaceHolder";
    var contentType = "application/x-www-form-urlencoded; charset=utf-8";
    var tDrillURLx = window.location.search;
    var tDrillURL = tDrillURLx.slice(1);
    $(document).ready(function () {
      if (window.XDomainRequest)
        contentType = "text/plain";
      var webMethod = "http://machine:port/ibi_apps/rs";
      var IBIRS_action = "get";
      var IBIRS_clientPath = "/src/drillTwo.html";
      var IBIRS_htmlPath = "http://machine:port/ibi_apps/ibi_html";
      var parameters = tDrillURL + '&IBIRS_clientPath=' + IBIRS_clientPath + 
                      '&IBIRS_htmlPath=' + IBIRS_htmlPath;
      $.ajax({
        type: "GET",
        url: webMethod,
        data: parameters,
        dataType: "html",
        xhrFields: {
          withCredentials: true
        },
        crossDomain: true,
        contentType: contentType,
        success: function() {
          complete: function(xhr, status) {
          };
        },
      });
    });
  </script>
</head>
</html>
Parsing the XML Response of a SignOn Request to Obtain the CSRF Name and Value

This section provides code examples that demonstrate how to parse the XML response of a SignOn request to obtain the Cross-Site Request Forgery (CSRF) name and value. The CSRF name and value can then be sent to subsequent POST requests.
Java Example

```java
import java.awt.Desktop;
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.File;
import java.io.FileOutputStream;
import java.io.PrintWriter;
import java.net.URI;
import java.net.URISyntaxException;
import javax.xml.parsers.ParserConfigurationException;
import javax.xml.parsers.SAXParser;
import javax.xml.parsers.SAXParserFactory;
import org.apache.commons.httpclient.Header;
import org.apache.commons.httpclient.HttpClient;
import org.apache.commons.httpclient.HttpException;
import org.apache.commons.httpclient.methods.PostMethod;
import org.xml.sax.SAXException;
/**
 * @author
 *
 */
public class runReport {
    /**
     * @param args
     * @throws IOException
     * @throws HttpException
     * @throws SAXException
     * @throws ParserConfigurationException
     * @throws URISyntaxException
     */
    public static void main(String[] args) throws HttpException, IOException,
            ParserConfigurationException, SAXException, URISyntaxException {
        String request = "http://localhost:8080/ibi_apps/rs/ibfs";
        HttpClient client = new HttpClient();
        PostMethod method = new PostMethod(request);
        method.addParameter("IBIRS_action", "signOn");
        method.addParameter("IBIRS_userName", "admin");
        method.addParameter("IBIRS_password", "admin");
    }
}
```
client.executeMethod(method);
Header[] cookies = null;
InputStream rstream = null;
rstream = method.getResponseBodyAsStream();
cookies = method.getResponseHeaders("Set-Cookie");
/* parse rstream XML for csrf token */
SAXParserFactory factory = SAXParserFactory.newInstance();
SAXParser parser = factory.newSAXParser();
SaxHandler handler = new SaxHandler();
parser.parse(rstream, handler);
String csrfName = SaxHandler.results[0];
String csrfValue = SaxHandler.results[1];
System.out.println("csrfName = " + csrfName);
System.out.println("csrfValue = " + csrfValue);
String request2 = "http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Tests/car_param.fex";
PostMethod method_report = new PostMethod(request2);
method_report.addParameter("IBIRS_action","run");
method_report.addParameter("COUNTRY","ENGLAND");
method_report.addParameter("CAR","JAGUAR");
method_report.addParameter("MODEL","XJ12L AUTO");
method_report.addParameter(csrfName, csrfValue);
// cookies is defined as Header[] in the Signing-On to WebFOCUS example
for(int h=0; h<cookies.length; h++){
  System.out.println(cookies[h]);
  method_report.addRequestHeader(cookies[h].getName(), cookies[h].getValue());
}
// client is defined as HttpClient in the Signing-On to WebFOCUS example
int statusCode2 = client.executeMethod(method_report);
InputStream rstream2 = null;
rstream2 = method_report.getResponseBodyAsStream();
File tempfile = new File("c:\temp\Report.htm");
FileOutputStream fos = new FileOutputStream(tempfile);
PrintWriter out=new PrintWriter(fos);
BufferedReader br2 = new BufferedReader(new InputStreamReader(rstream2));
String line2;
String newOutput = null;
while ((line2 = br2.readLine()) != null) {
  newOutput = line2;
  out.println(newOutput);
  System.out.println(line2);
}
// bring up the HTML report in the default browser
URI xtempfile = new URI("file:/c:/temp/Report.htm");
Desktop.getDesktop().browse(xtempfile);
br2.close();
out.close();
}

XML Parser Class

The XML Parser class is called SaxHandler and is in a separate class file
import org.xml.sax.Attributes;
import org.xml.sax.SAXException;
import org.xml.sax.helpers.DefaultHandler;
public class SaxHandler extends DefaultHandler {
    static String[] results = new String[2];

    public void startElement(String uri, String localName, String qName,
        Attributes attributes) throws SAXException {
        if (qName.equals("entry")) {
            String keyName = attributes.getValue("key");
            if (keyName.equals("IBI_CSRF_Token_Name")) {
                String tokenNameKeyValue = attributes.getValue("value");
                System.out.println("key value is " +
                    tokenNameKeyValue);
                results[0] = tokenNameKeyValue;
            }
            if (keyName.equals("IBI_CSRF_Token_Value")) {
                String tokenValueKeyValue = attributes.getValue("value");
                System.out.println("key value is " +
                    tokenValueKeyValue);
                results[1] = tokenValueKeyValue;
            }
        }
    }
}

Imports System.Net
Imports System.Text
Imports System.IO
Module Module1
    Sub Main()
        Dim cookies As New CookieContainer
        Dim webStream As Stream
        Dim webResponse As String = ""
        Dim request As HttpWebRequest
        Dim response As HttpWebResponse
        Dim postData As String
        Dim csrf(2) As String
        request = WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs")
        request.Method = "POST"
        postData = "IBIRS_action=signOn&IBIRS_userName=admin&IBIRS_password=admin"
        request.CookieContainer = cookies
        Dim byteArray As Byte() = Encoding.UTF8.GetBytes(postData)
        request.ContentType = "application/x-www-form-urlencoded"
        request.ContentLength = byteArray.Length
        Dim dataStream As Stream = request.GetRequestStream()
        dataStream.Write(byteArray, 0, byteArray.Length)
        dataStream.Close()
        response = request.GetResponse()
        webStream = response.GetResponseStream()
        Dim webStreamReader As New StreamReader(webStream)
        While webStreamReader.Peek >= 0
            webResponse = webStreamReader.ReadToEnd()
        End While
        csrf = XMLParse.XMLParseCSRF.doParseXML(webResponse)
        Console.WriteLine("csrf token name is " + csrf(0))
        Console.WriteLine("csrf key value is " + csrf(1))
        Console.ReadKey()
        Dim request2 As HttpWebRequest
        Dim response2 As HttpWebResponse
        Dim webStream2 As Stream
        Dim webResponse2 As String = ""
        request2 = WebRequest.Create("http://localhost:8080/ibi_apps/rs/ibfs/WFC/Repository/Tests/car_param.fex")
        request2.Method = "POST"
        'cookies is defined as CookieContainer in the Signing-On to WebFOCUS example
        request2.CookieContainer = cookies
        postData = "IBIRS_action=run&COUNTRY=ENGLAND&CAR=JAGUAR&MODEL=XJ12L%20AUTO" + 
                   "&" + csrf(0) + "=" + csrf(1)
        Dim byteArray2 As Byte() = Encoding.UTF8.GetBytes(postData)
        request2.ContentType = "application/x-www-form-urlencoded"
        request2.ContentLength = byteArray2.Length
Dim dataStream2 As Stream = request2.GetRequestStream()
dataStream2.Write(byteArray2, 0, byteArray2.Length)
dataStream2.Close()
response2 = request2.GetResponse()
webStream2 = response2.GetResponseStream()
'Write to disk
Dim fs As New FileStream("c:\temp\output.htm", FileMode.Create)
Dim read As Byte() = New Byte(255) {}
Dim count As Integer = webStream2.Read(read, 0, read.Length)
While count > 0
    fs.Write(Integer = webStream2.Read(read, 0, read.Length)
End While
'Close everything
fs.Close()
webStream2.Close()
Process.Start("c:\temp\output.htm")
End Sub
End Module

XML Parser Function

The XML Parser function is called doParseXML and is located in a separate class file named XMLParseCSRF.vb, which is located in a separate project for reusability.
Imports System.IO
Imports System.Xml
Public Class XMLParseCSRF
  Public Shared Function doParseXML(inResponse As String) As String()
    Dim results(2) As String
    Dim m_xmlr As XmlTextReader = New XmlTextReader(New StringReader(inResponse))
    While m_xmlr.Read()
      If (m_xmlr.NodeType = XmlNodeType.Element) Then
        If m_xmlr.Name = "entry" Then
          Dim keyName As String = m_xmlr.GetAttribute("key")
          If (keyName = "IBI_CSRF_Token_Name") Then
            Dim tokenKeyNameValue As String = m_xmlr.GetAttribute("value")
            Console.WriteLine("tokenKeyName value is " + tokenKeyNameValue)
            results(0) = tokenKeyNameValue
          End If
          If (keyName = "IBI_CSRF_Token_Value") Then
            Dim tokenValueKeyValue As String = m_xmlr.GetAttribute("value")
            Console.WriteLine("tokenValueKey value is " + tokenValueKeyValue)
            results(1) = tokenValueKeyValue
          End If
        End If
      End If
    End While
' close the reader
m_xmlr.Close()
Return results
End Function
End Class

Embedding Charts to be Responsive

There are two methods you can use for embedding charts to be responsive:

With jQuery:

<script type="text/javascript" src="/jquery/js/jquery.min.js"></script>
<script type="text/javascript" src="/ibi_apps/tdg/jschart/distribution/tdgchart-min.js"></script>

$(function () {
  $('#test_chart').tdgchart(
    {remoteDataUrl: serverUrl + '/ibfs/WFC/Repository/OPM/test_autofit_chart.fex?COUNTRY=ENGLAND' }
  );
  window.onresize = function()

  { $('#test_chart>div')[0].chart.width = $('#test_chart').width();
  $('#test_chart>div')[0].chart.height = $('#test_chart').height();
  $('#test_chart>div')[0].chart.redraw(); } ));
Without jQuery:

```javascript
<script type="text/javascript" src="/ibi_apps/tdg/jschart/distribution/tdgchart-min.js"></script>
var chart = new tdgchart();
chart.width = container.clientWidth;
chart.height = container.clientHeight;
chart.loadRemoteProperties('some_url_that_resolves_to_a_jschart_request', 'jschart',
{onLoad: 'redraw'});
window.onresize = function()
{
    chart.width = container.clientWidth;
    chart.height = container.clientHeight;
    chart.redraw();
}
```
This section describes the format and structure of URL calls that can be used to directly access WebFOCUS InfoAssist.

**In this chapter:**

- Starting InfoAssist

---

**Starting InfoAssist**

This URL call can be used to start InfoAssist externally.

**URL Format:**

```
http://host:port/ibi_apps/ia?tool=<tool_value>&is508=<true/false>&master=<master_name>&item=<item_ibfs_path>
```

where:

- **host**
  
  Is the name of the system where WebFOCUS is installed.

- **port**
  
  Is the port number used by WebFOCUS.

- **item (required)**
  
  Is the IBFS path to one of the following:

  - Folder
  - Chart
  - Table
  - InfoDiscovery Fex
  - Link to a Folder
  - Link to a Chart
  - Link to a Table
  - Link to an InfoDiscovery Fex
Link to a Reporting Object

When a link to a reporting object is specified, InfoAssist will open with the specified reporting object pre-loaded, allowing the user to create a My Report.

Note: The specified value for the item parameter must be encoded using UTF-8.

tool (optional)

If the item parameter is set to a folder or a link to a folder, then this specified value is the tool (mode) to start when InfoAssist is launched:

- report (default)
  Starts in Report mode.

- chart
  Starts in Chart mode.

- idis
  Starts in DataVisualization mode.

- document
  Starts in Compose mode.

- dashboard
  Starts in DashBoard mode.

- sample
  Used to create samples. In this case, the item parameter must be set to a folder and a specific Master File must be specified for the master parameter.

is508 (Optional)

Determines whether to start InfoAssist in 508-compliance mode. Specify true or false.

master (Optional)

If the item parameter is set to a folder or a link to a folder, then this specified value is the Master File to use.

Example:

http://host:port/ibi_apps/ia?tool=chart&master=CAR&item=IBFS%3A%2FWFC%2FRepository%2FPublic%2Fibig14%2FChart1.fex
In this example, InfoAssist is started in Chart mode using the CAR Master File. Since this is a secure URL, the WebFOCUS Sign In page is initially displayed, as shown in the following image. The user must specify a valid user name and password before proceeding.

**Note:** The WebFOCUS Sign In page only displays if the user is not already signed in. If the user is already signed in to WebFOCUS, then this page is not displayed.

To bypass the WebFOCUS Sign In page, the developer of the application can use an alternate sign on procedure, such as a web service signOn call, or any SSO option. For more information, see the *WebFOCUS Security and Administration* content.
WebFOCUS Open Portal Services

WebFOCUS Open Portal Services provides seamless integration to Enterprise Information Portals (EIPs) through a single sign-on (SSO) so that users can consume and interact with WebFOCUS content in an easy and secure way.

Information Builders offers a way to leverage your EIP investment by extending access to your enterprise data. With WebFOCUS Open Portal Services, you can deploy WebFOCUS business intelligence across the enterprise by incorporating reporting structures and structured content within supported third-party EIPs.

This section describes how to install and use WebFOCUS Open Portal Services and its portal components in Microsoft® SharePoint 2016 and 2013, IBM® WebSphere® version 8.5, and Apache Jetspeed version 2.3.1, portal server environments. It is intended for administrators who are installing and configuring the WebFOCUS Portal components on a specific EIP to enable the usage and delivery of WebFOCUS business intelligence content in third-party applications.
Introducing WebFOCUS Open Portal Services

WebFOCUS Open Portal Services for WebFOCUS 8 provides seamless integration to Enterprise Information Portals (EIPs) through a Single Sign On so that users can consume and interact with WebFOCUS content in an easy and secure way.

Information Builders offers a way to leverage your EIP investment by extending access to your enterprise data. With WebFOCUS Open Portal Services, you can deploy WebFOCUS business intelligence across the enterprise by incorporating reporting structures and structured content within supported third-party EIPs.

Information Builders WebFOCUS business intelligence technology is the most usable, deployable, and scalable business intelligence software solution for accessing more than 90+ data sources, including legacy, data warehouse, enterprise resource planning (ERP), and customer relationship management (CRM), on over 35 platforms, including S/390 mainframe. Because it can access and integrate data from any source, it reduces the complexity of a given data environment.

The following section provides an overview of the features and benefits of WebFOCUS Open Portal Services.

In this chapter:

- WebFOCUS Open Portal Services
- Benefits of Using WebFOCUS Open Portal Services
- Java Portlet Specification 2.0 (JSR 286) Support

WebFOCUS Open Portal Services enables you to extend WebFOCUS business intelligence capabilities to end users within an existing EIP framework. Users can:

- Personalize the way they view, store, and retrieve business intelligence content for optimum job efficiency.

- Decide what content to include in each content window and how that content is displayed and organized.

- Combine graphics and reports in the same portal page.
Employ analytic tools for all types of reporting and query, including ad hoc and OLAP.

The following diagram illustrates WebFOCUS content being displayed inside an EIP:

Benefits of Using WebFOCUS Open Portal Services

WebFOCUS Open Portal Services offer many benefits to the users within the enterprise by:

- Providing immediate access to critical enterprise-wide data through a personalized portal page.
- Incorporating comprehensive reporting and analysis capabilities within the portal and enhancing the user experience by delivering relevant, real-time information.
- Enabling users to display, locate, share, visualize, and analyze business intelligence information based on their roles within the enterprise.
- Supporting internal and external security for delivering timely and accurate business reports to authorized users.

Java Portlet Specification 2.0 (JSR 286) Support

Java Portlet Specification 2.0 (JSR 286) establishes a standard API for creating portlets, the integration component between applications and portals that enables delivery of an application through a portal.
Released in June 2008, JSR 286 is the successor to the Java Portlet Specification 1.0 (JSR 168), which was originally released in October 2003. JSR 286 provides new features and improvements and fills any gaps that were identified with JSR 168.

As of WebFOCUS Release 8.2 Version 01, WebFOCUS portlets are available for JSR 286 compliant portal environments, such as IBM WebSphere Portal Server.
Chapter 12

Using WebFOCUS Portal Components

This section describes the types of WebFOCUS components that are provided by WebFOCUS Open Portal Services (OPS). In addition, information on using WebFOCUS components is provided.

In this chapter:

- WebFOCUS Open Portal Services Components Overview
- Using WebFOCUS Open Portal Services Components
- Usage Considerations

WebFOCUS Open Portal Services Components Overview

WebFOCUS Open Portal Services (OPS) provides the following set of WebFOCUS components:

- Report
- Deferred Status
- Resource Tree
- Portal
- Portal Tree

These components enable integration between existing Enterprise Information Portals (EIPs) and the WebFOCUS business intelligence platform using Single Sign-On (SSO) functionality. As a result, users are automatically authenticated with WebFOCUS once they log on to their EIP. After receiving the user ID from the EIP through a secure channel, WebFOCUS OPS initiates a trusted Managed Reporting logon on behalf of the user to avoid the subsequent Managed Reporting logon prompt.

For more information about the trusted Managed Reporting logon feature, see the WebFOCUS Security and Administration content.
WebFOCUS Report Component

The WebFOCUS Report component allows portal users to access WebFOCUS content items that include reports, charts, dashboards, documents, and URLs. Depending on security privileges, a user has the following options:

- Select their own WebFOCUS content items to be displayed.
- Select the specific WebFOCUS content items to be displayed to other users.
- View only WebFOCUS content items already selected by another user.

The following image shows an example of the WebFOCUS Report component.

WebFOCUS Deferred Status Component

The WebFOCUS Deferred Status component allows users to check the status of any report submitted for deferred execution. The following image shows an example of the WebFOCUS Deferred Status component.
WebFOCUS Resource Tree Component

The WebFOCUS Resource Tree component is a modified version of the standard WebFOCUS Resource Tree located in the WebFOCUS Business Intelligence (BI) Portal. It allows EIP users to run, build, and modify WebFOCUS content items. In addition, functionality such as scheduling reports, enabling content to be viewed on an iPad is provided. If WebFOCUS ReportCaster is installed, then links to the ReportCaster Library and additional ReportCaster resources are available.

The following image shows an example of the WebFOCUS Resource Tree component.
WebFOCUS Portal Component

The WebFOCUS Portal component allows users to access their WebFOCUS Business Intelligence (BI) portal content in a portal environment (for example, IBM WebSphere Portal Server). The portal launches in the WebFOCUS Portal component so the portal is open and ready to be used.

WebFOCUS Portal Tree Component

The WebFOCUS Portal Tree component shows any basic WebFOCUS portals in a portal environment (for example, IBM WebSphere Portal Server).

Using WebFOCUS Open Portal Services Components

This section describes how to configure and use the WebFOCUS Report, Deferred Status, and Resource Tree components once the Source URL parameter is set.

For more information on how to add WebFOCUS Open Portal Services (OPS) components to a portal page and access its properties, see Installing WebFOCUS Web Parts for Microsoft SharePoint 2013 on page 409.
Setting the Source URL Parameter

After you add a component to the portal page, the first common step that is required for all three WebFOCUS components is to set the Source URL parameter for the component to the URL of the WebFOCUS Client to be used. Once this URL is set, the component is able to communicate with WebFOCUS and respond with the initial screen of the component.

Using the WebFOCUS Report Component

Once the WebFOCUS Report component is added to a portal page and the WebFOCUS Client is selected as described in Setting the Source URL Parameter on page 383, the component content must be defined. This is done by a user who has permission to select WebFOCUS Report component content items in one of the following display modes:

- Launch
- Folder
- List

For more information on configuring WebFOCUS Report component security, see WebFOCUS Report Component Configurations on page 393.

For more information on adding the WebFOCUS Report component to a portal page, see Installing WebFOCUS Web Parts for Microsoft SharePoint 2013 on page 409.

Launch Mode

In this mode, you can set a WebFOCUS content item to be displayed by default each time a user visits the portal page containing the WebFOCUS Report component.

Procedure: How to Configure Launch Mode for the WebFOCUS Report Component

1. Click Select Reports from the Component menu bar, as shown in the following image.
2. Select the *launch* option from the display mode options in the upper-right corner, as shown in the following image.

3. Select a content item (report) to be displayed from the Content node on the left pane and then click *save*, as shown in the following image.
Subsequent visits to the WebFOCUS Report component will display the selected report by default, as shown in the following image.

**Folder Mode**

In this mode, you can set a specific WebFOCUS folder to be displayed by default each time a user visits the portal page containing the WebFOCUS Report component. Users can then select the WebFOCUS content item they want to run by expanding the displayed folder.

**Procedure: How to Configure Folder Mode for the WebFOCUS Report Component**

1. Click Select Reports from the Component menu bar, as shown in the following image.
2. Select the *folder* option from the display mode options in the upper-right corner, as shown in the following image.

![Folder Option](image1.png)

3. Select one or more folders from the Content node on the left pane and click save, as shown in the following image.

![Select Folders](image2.png)
Subsequent visits to the WebFOCUS Report component will display the selected folders and respective content items by default, as shown in the following image.

4. Double-click a content item to run it or right-click a content item to select different options (such as Run, Edit, and Schedule), as shown in the following image.

List Mode

In this mode, you can set a list of WebFOCUS content items to be displayed by default each time a user visits the portal page containing the WebFOCUS Report component. Users can then select one of the content items to run.
Procedure: How to Configure List Mode for the WebFOCUS Report Component

1. Click Select Reports from the Component menu bar, as shown in the following image.

2. Select the list option from the display mode options in the upper-right corner, as shown in the following image.

3. Select one or more nodes from the Content node on the left pane, and click save.
Subsequent visits to the WebFOCUS Report component will display the selected content items by default, as shown in the following image.

4. Double-click a content item to run it or right-click a content item to select different options (such as Run, Edit, and Schedule), as shown in the following image.

### WebFOCUS Report Component Parameters

The following table lists and describes the available WebFOCUS Report component parameters.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WebFOCUS Connection</strong></td>
<td></td>
</tr>
<tr>
<td>Source URL</td>
<td>URL and port number to the WebFOCUS client used to retrieve WebFOCUS content items.</td>
</tr>
<tr>
<td>Parameters</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| User run only | Used to control whether or not a user is allowed to change the content displayed in the Report component. If the User run only check box is not selected, then the user will be able to select a WebFOCUS content item and its display mode. This is the default setting. If the User run only check box is selected, then the Report Component will display a default content item, such as a report, to any user that does not have Managed Reporting administrator privileges, and the Select Report menu option will not be available, preventing the user from changing the content item selected by default. Note: The User run only parameter works in conjunction with the following Open Portal Services security privileges:  
- Edit OPS Portlet  
- Save OPS Portlet Customization  
For more information, see WebFOCUS Report Component Configurations on page 393. |
<p>| Show Refresh | If the Show Refresh check box is not selected, then the Refresh option will not be available on the Report Component menu and the user will not be able to manually trigger the content item to refresh. If Show Refresh is selected, then the Refresh option will be displayed on the Report Component menu and the user can manually trigger the content item to refresh. This is the default setting. |</p>
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use scroll bars</td>
<td>If the <em>Use scroll bars</em> check box is not selected, then the Report Component will not display scrollbars for the content item displayed.</td>
</tr>
<tr>
<td></td>
<td>If the <em>Use scroll bars</em> check box is selected, then the Report Component will display scrollbars for the content item displayed. This is the default setting.</td>
</tr>
<tr>
<td></td>
<td>This is particularly useful for content items that are larger than the component width and height, such as reports with several rows.</td>
</tr>
<tr>
<td>Show time stamp</td>
<td>If the <em>Show time stamp</em> check box is not selected, then the Report Component will not display the time stamp. This is the default setting.</td>
</tr>
<tr>
<td></td>
<td>If the <em>Show time stamp</em> check box is selected, then the Report Component will display the time stamp.</td>
</tr>
<tr>
<td>Gn</td>
<td>The <em>gn</em> parameter is used to distinguish between multiple instances of the WebFOCUS Report component and retain its attributes (for example, width, height, and refresh rate).</td>
</tr>
<tr>
<td></td>
<td>If you add three Report components to your portal page, then you must specify a unique <em>gn</em> value for each instance of that Report component.</td>
</tr>
<tr>
<td>Number of columns</td>
<td>Represents the number columns displayed inside the content mode box. For example, if a user is selecting reports to be placed in a list and the <em>Number of columns</em> parameter is set to 2, then items will be organized into two columns.</td>
</tr>
<tr>
<td></td>
<td>The default value is 1.</td>
</tr>
<tr>
<td>Refresh</td>
<td>The amount of time in seconds before the content in the WebFOCUS component is refreshed.</td>
</tr>
<tr>
<td></td>
<td>If nothing is specified, the default value is 0, meaning the component will not automatically refresh itself.</td>
</tr>
<tr>
<td>Parameters</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Scale</td>
<td>The time scale used to determine the refresh rate. Specify ( m ) for minutes (default), ( s ) for seconds, or ( h ) for hours.</td>
</tr>
<tr>
<td>Content</td>
<td></td>
</tr>
<tr>
<td>Context path</td>
<td>The application context path. For example: /ibi_apps</td>
</tr>
<tr>
<td>Prefix fba usernames</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>Displays debugging information.</td>
</tr>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>The title for the Report Component to appear on the top left of the component box.</td>
</tr>
<tr>
<td>Height</td>
<td>Represents the height of the component. Select either Yes and provide the fixed height of the Web Part, or No. Adjust height to fit zone.</td>
</tr>
<tr>
<td>Width</td>
<td>Represents the width of the component. Select either Yes and provide the fixed width of the Web Part, or No. Adjust width to fit zone.</td>
</tr>
<tr>
<td>Chrome State</td>
<td>It can be set to Minimized, meaning the component will be minimized on the page, or Normal, meaning the component will be displayed with the set dimensions.</td>
</tr>
</tbody>
</table>
WebFOCUS Report Component Configurations

There is one WebFOCUS Report component parameter and two Open Portal Service security privileges that control the ability of the user to set and access content in the WebFOCUS Report component, as indicated in the following table.

<table>
<thead>
<tr>
<th>UseRunOnly (Parameter)</th>
<th>OPS Customize (Privilege)</th>
<th>OPS Edit (Privilege)</th>
<th>Access Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Select Report is not displayed. Access Denied.</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Select Report is not displayed. Access Denied.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Select Report is displayed for customization. The user can customize, select, and add tree items. OPS Customize has precedence over OPS Edit.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Select Report is displayed for customization. The user can customize, select, and add tree items. OPS Customize has precedence over OPS edit.</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Select Report is not displayed. The user sees Fixed Report configured by a user with OPS Edit.</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Select Report is displayed for global configuration. The user sees Fixed Report configured globally by a user with OPS Edit.</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Select Report is NOT Displayed. The user sees Fixed Report configured by a user with OPS Edit.</td>
</tr>
<tr>
<td>UseRunOnly (Parameter)</td>
<td>OPS Customize (Privilege)</td>
<td>OPS Edit (Privilege)</td>
<td>Access Type</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------</td>
<td>----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Select Report is displayed for global configuration. The user sees Fixed Report configured globally by a user with OPS Edit.</td>
</tr>
</tbody>
</table>

For more information on how to configure the WebFOCUS component privileges, see the *WebFOCUS Security and Administration* content.

**Using the WebFOCUS Deferred Status Component**

The WebFOCUS Deferred Status component allows users to check the status of any report submitted for deferred execution. An example of the WebFOCUS Deferred Status component is shown in the following image.

![WebFOCUS Deferred Status](image)

**Using the WebFOCUS Resource Tree Component**

Once the WebFOCUS Resource Tree Component is added to the portal page, users can navigate through the tree nodes and perform different operations as described in the following sections.
Content Node

The Content node allows users to interact with WebFOCUS content items based on the security privileges of the user by either double-clicking on the item to run it or by right-clicking on the item and selecting an option from the menu that appears, as shown in the following image.
Favorites Node

The Favorites node allows users to interact with WebFOCUS content items based on the security privileges of the user by either double-clicking on an item to run it or by right-clicking an item and selecting an option from the menu that appears, as shown in the following image.
Mobile Favorites Node

The Mobile Favorites node includes items that will be displayed in the Mobile Favorites application. It also allows users to interact with WebFOCUS content items based on the security privileges of the user by either double-clicking on the item to run it or by right-clicking on the item and selecting an option from the menu that appears, as shown in the following image.

![WebFOCUS Resource Tree](image)

For more information about Mobile Favorites, see the WebFOCUS Business Intelligence Portal content.
Recent Items Node

The Recent Items node displays recently run content items. It also allows users to interact with WebFOCUS content items based on the security privileges of the user by either double-clicking on the item to run it or by right-clicking on the item and selecting an option from the menu that appears, as shown in the following image.

WebFOCUS Resource Tree Component Parameters

The following table lists and describes the available WebFOCUS Resource Tree component parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WebFOCUS Connection</strong></td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Source URL</td>
<td>The URL and port number to the WebFOCUS client used to retrieve WebFOCUS content items.</td>
</tr>
<tr>
<td>Proxy URL</td>
<td>The Proxy URL and port number to the WebFOCUS client.</td>
</tr>
<tr>
<td>User run only</td>
<td>Used to control whether or not a user is allowed to change the content displayed in the Report Component.</td>
</tr>
<tr>
<td></td>
<td>If the User run only check box is not selected, then the user will be able to select a WebFOCUS content item and its display mode. This is the default setting.</td>
</tr>
<tr>
<td></td>
<td>If the User run only check box is selected, then the Report Component will display a default content item, such as a report, to any user that does not have Managed Reporting administrator privileges, and the Select Report menu option will not be available, preventing the user from changing the content item selected by default.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The User run only parameter works in conjunction with the following Open Portal Services security privileges:</td>
</tr>
<tr>
<td></td>
<td>☐ Edit OPS Portlet</td>
</tr>
<tr>
<td></td>
<td>☐ Save OPS Portlet Customization</td>
</tr>
<tr>
<td></td>
<td>For more information, see WebFOCUS Report Component Configurations on page 393.</td>
</tr>
<tr>
<td>Show Refresh</td>
<td>If the Show Refresh check box is not selected, then the Refresh option will not be available on the Report Component menu and the user will not be able to manually trigger the content item to refresh.</td>
</tr>
<tr>
<td></td>
<td>If Show Refresh is selected, then the Refresh option will be displayed on the Report Component menu and the user can manually trigger the content item to refresh. This is the default setting.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Use scroll bars</td>
<td>If the <em>Use scroll bars</em> check box is not selected, then the Report Component will not display scrollbars for the content item displayed.</td>
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<tr>
<td></td>
<td>If the <em>Use scroll bars</em> check box is selected, then the Report Component will display scrollbars for the content item displayed. This is the default setting.</td>
</tr>
<tr>
<td></td>
<td>This is particularly useful for content items that are larger than the component width and height, such as reports with several rows.</td>
</tr>
<tr>
<td>Show time stamp</td>
<td>If the <em>Show time stamp</em> check box is not selected, then the Report Component will not display the time stamp. This is the default setting.</td>
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<tr>
<td></td>
<td>If the <em>Show time stamp</em> check box is selected, then the Report Component will display the time stamp.</td>
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<tr>
<td>Gn</td>
<td>The $gn$ parameter is used to distinguish between multiple instances of the WebFOCUS Report component and retain its attributes (for example, width, height, and refresh rate).</td>
</tr>
<tr>
<td></td>
<td>If you add three Report components to your portal page, specify a unique $gn$ value for each instance of that Report component.</td>
</tr>
<tr>
<td>Number of columns</td>
<td>Represents the number of columns displayed inside the content mode box. For example, if a user is selecting reports to be placed in a list and the <em>Number of columns</em> parameter is set to 2, then items will be organized into two columns.</td>
</tr>
<tr>
<td></td>
<td>The default value is 1.</td>
</tr>
<tr>
<td>Refresh</td>
<td>The amount of time in seconds before the content in the WebFOCUS component is refreshed.</td>
</tr>
<tr>
<td></td>
<td>If nothing is specified, the default value is 0, meaning the component will not automatically refresh itself.</td>
</tr>
<tr>
<td>Scale</td>
<td>The time scale used to determine the refresh rate. Specify $m$ for minutes (default), $s$ for seconds, or $h$ for hours.</td>
</tr>
</tbody>
</table>
## Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td></td>
</tr>
<tr>
<td>Context path</td>
<td>The application context path. For example: [/ibi_apps]</td>
</tr>
<tr>
<td>Prefix fba usernames</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>Displays debugging information.</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>The title for the Report Component that appears on the top left of the component pane.</td>
</tr>
<tr>
<td>Height</td>
<td>Represents the height of the component. Select either Yes and provide the fixed height of the Web Part, or No. Adjust height to fit zone.</td>
</tr>
<tr>
<td>Width</td>
<td>Represents the width of the component. Select either Yes and provide the fixed width of the Web Part, or No. Adjust width to fit zone.</td>
</tr>
<tr>
<td>Chrome State</td>
<td>This can be set to Minimized, meaning that the component will be minimized on the page, or Normal, meaning the component will be displayed with the set dimensions.</td>
</tr>
</tbody>
</table>

### Usage Considerations

This section describes several considerations when using and configuring WebFOCUS Open Portal Services.

**Right-Click Context Menu Persists When Working in Another Portlet**

When working between two or more portlets, a right-click context menu that appears in one portlet can also appear in another portlet. For example, if you right-click on a folder in the Resource Tree portlet to perform an action (for example, to run a procedure), you can also do the same in the Report portlet. Context menus in both portlets are displayed/enabled. The context menus do not disappear unless you click anywhere within the respective portlet where a context menu is displayed.
Portlet Menu Options to Avoid

When embedding a WebFOCUS portal, developers should avoid using the Sign In, Sign Out, and Close menu options in their WebFOCUS portlets. Including these menu options may leave the portlet in an unstable state.
Chapter 13
Installing WebFOCUS App Parts for Microsoft SharePoint 2016

This section describes how administrators can install the WebFOCUS App Parts for the Microsoft SharePoint Portal Server 2016.

In this chapter:
- On-Premise SharePoint Server
- Using Apps (Add-ins) With a Developer Site and Other Site Types Through the App Catalog.
- Using SharePoint on Microsoft Office 365 and Azure (In the Cloud)

On-Premise SharePoint Server

This section describes how to configure the On-Premise SharePoint Server.

As of Microsoft SharePoint Portal Server 2016, the WebFOCUS App Parts are packaged as a SharePoint Add-in (WfApp.app), which is located in the following directory of your WebFOCUS installation:

`drive:\ibi\WebFOCUS82\utilities\ops\sharepoint-addin`

where:

`drive:`
Is the drive letter corresponding to the location where WebFOCUS is installed.

In terms of security, ensure that the same security paradigm is used on both environments (WebFOCUS and SharePoint).

1. Add the domain user ID you intend to use for apps (Add-ins) as a Windows administrator.
2. Use Central Administration to ensure that the Application Management Service and User Profile Service Application are configured, by selecting Manage Service Applications under Application Management.
3. Verify that your domain user ID has a user profile in Central Administration. If it does not, then create a new user profile for it by clicking the User Profile Service link under Manage Service Applications.
4. Under People, select Manage User Profiles, and search for the specific name.
5. Add the domain user ID to SQL Server as a login with the sysadmin role and User Mapping of db_owner, and Sharepoint_shell_access for the SharePoint_config database.
6. Open SharePoint Management Shell using the Run as Administrator option.
7. Load the PowerShell snap-ins for the session/script using the following command:

   Add-PSSnapin Microsoft.Sharepoint.Powershell

8. Add user(s) as spshell administrators using the following command:

   Add-SPShellAdmin -UserName domain\username

9. Set the Add-ins subdomain using the following command:

   Set-SPAppDomain "wfapp.ibi.com"

10. Set the account to run Add-ins using the following command:

    $account = New-SPManagedAccount

11. Set the account, app pool, and database settings using the following commands:

    a. $account = Get-SPManagedAccount "domain\user"
    b. $appPoolSubSvc = New-SPServiceApplicationPool -Name SettingsServiceAppPool -Account $account
    c. $appPoolAppSvc = New-SPServiceApplicationPool -Name AppServiceAppPool -Account $account
    d. $appSubSvc = New-SPSubscriptionSettingsServiceApplication -ApplicationPool $appPoolSubSvc -Name SettingsServiceApp -DatabaseName SettingsServiceDB
       (Note: The user ID must be sysadmin or dbcreator for this command.)
    e. $proxySubSvc = New-SPSubscriptionSettingsServiceApplicationProxy -ServiceApplication $appSubSvc
    f. $appSvc = New-SPAppManagementServiceApplication -ApplicationPool $appPoolAppSvc -Name AppServiceApp -DatabaseName AppServiceDB
    g. $proxyAppSvc = New-SPAppManagementServiceApplicationProxy -ServiceApplication $appSvc

12. Set the Add-in prefix using the following command:

    Set-SPAppSiteSubscriptionName -Name "add-in" -Confirm:$false

    The full app (Add-in) name will appear as shown in the following example:

    http://add-in-61844c031b3e0d.wfapp.ibi.com/sites/WFapp/

    Note: Providing the support for wfapp.ibi.com (or other) domain is the responsibility of the SharePoint administrator.

    The SharePoint Server is now configured to support apps (Add-ins).
Using Apps (Add-ins) With a Developer Site and Other Site Types Through the App Catalog.

This section describes how to use apps (Add-ins) with a developer site and other site types through the app catalog.

Procedure: How to Use Apps (Add-ins) With a Developer Site

To use apps (Add-ins) with a developer site:

1. Using Central Administration, create a Developer site with Create Site Collections.
2. From another machine, use your browser to go to the following new developer website:
   
   \[ \text{http://sharepointServer/sites/developerSite} \]

3. Pre-register the WebFOCUS App using the following:
   
   \[ \text{http://sharepointServer/sites/developerSite/_layouts/15/appregnew.aspx} \]

4. For Client ID, enter the following:
   
   \[ 40f398ee-1f96-4e4e-96dd-9f7218a3b880 \]

5. Next to Client Secret, click Generate.

6. Provide a title in the Title field.

7. In the App Domain field, enter a non-existent host, for example:
   
   \[ \text{http://www.webfocusdavid.com} \]

8. In the Redirect URL field, enter the following:
   
   \[ \text{http://www.webfocusdavid.com/default.aspx} \]

9. Click Create.

10. In the left pane, select Apps in Testing.

11. Click the New app to deploy link.

12. From the dialog that appears, click Upload and navigate to WFApplp.app to upload it.

13. Click Deploy, and then when you are prompted, click Trust it.

14. Refresh your browser until the Installing message disappears, which indicates that the app is ready for use.

15. Create a page in the site.

16. From the Insert tab at the top of the page, select App Parts so that the WebFOCUS App Parts will be available for use.

    When you insert the first app part, the frame will get an error which shows you the host that needs to be added to the Windows Hosts file in order to access the Add-ins.
17. Use the real IP address of the SharePoint Server machines in the hosts file.

18. Refresh the browser.
   The frame may show a 403 - Access Denied message which means you need to log on to WebFOCUS in another browser tab.

**Procedure: How to Use Apps (Add-ins) With Other Site Types Through the App Catalog**

To use apps (Add-ins) with other site types through the app catalog:

1. Using the Central Administration with a Farm Administrators account, click Apps from the left side of the pane, then under App Management, click Manage App Catalog.

2. Select the Create a new app catalog site radio button, and click Ok.

3. On the Create App Catalog page, enter a title for the App Catalog site and an optional description.

4. In the URL field, enter the URL to use for this site, for example:
   ```
   http://sharepointServer/sites/mycatalog
   ```

5. In the Primary Site Collection Administrator section, type the name of the user who will manage the catalog, and then click check names to validate it.

6. In the End Users section, type of the names of the users or groups that you wish to be able to browse the catalog, and then click check names to validate them.

7. Select an optional quota that is needed, and then click Ok to create the catalog.
   Once the catalog is created, the Manage App Catalog page displays the App Catalog site URL.

8. Using your browser, go to the App Catalog website and click Apps for SharePoint on the left side of the page.

9. Click New and in the Add a document dialog that appears, click Choose files and navigate to the folder that has the app file and select it for upload.

10. Click Ok.

11. Use the Central Administration to create a non-Developer site with Create Site Collections.

12. Using your browser in another machine, go to the following new website:
    ```
    http://sharepointServer/sites/testSite
    ```

13. Pre-register the WebFOCUS App using the following:
    ```
    http://sharepointServer/sites/testSite/_layouts/15/appregnew.aspx
    ```

14. In the Client ID field, enter the following:
    ```
    40f398ee-1f96-4e4e-96dd-9f7218a3b880
    ```
15. Next to Client Secret, click Generate.

16. Enter a title in the Title field.

17. In the App Domain field, enter a non-existent host, for example:

   http://www.webfocusdavid.com

18. In the Redirect URL field, enter the following:

   http://www.webfocusdavid.com/default.aspx

19. Click Create, and then click Ok.

20. From the gear menu at the top right of the pane, click Add an App to display the Your Apps page.

21. Click Information Builders WebFOCUS applets.

22. In the Do you trust WebFOCUS? dialog that appears, click the Trust it button.

   This will add the app to your site.

23. Create a page in the site.

24. From the Insert tab at the top of the page, select App Parts and you will see the WebFOCUS App Parts available for use.

   When you insert the first app part, the frame will get an error which shows you the host that needs to be added to the Windows Hosts file in order to access the Add-ins. You can use the real IP address of the SharePoint Server machines in the hosts file.

25. Refresh the browser.

   The frame may show a 403 - Access Denied message, indicating that you must log on to WebFOCUS in another browser tab.

**Using SharePoint on Microsoft Office 365 and Azure (In the Cloud)**

Secure Sockets Layer (SSL) must be configured for WebFOCUS in order to use SharePoint in the cloud.

*Note:* The following procedure uses Microsoft Office 365 as an example, but the general steps would also apply in a Microsoft Azure environment.

1. Sign in to Office 365 with your SharePoint online account.

2. From the SharePoint Admin Center (the tile with A and Admin on it), select Apps from the left pane, and then click App Catalog.

3. Select Create a new app catalog site and then click Ok.

4. On the Create App Catalog Site Collection page, enter the required information, and then click Ok.
5. Navigate to the App Catalog site within the Admin Center, click Apps, and then click App Catalog.

6. On the home page of the App Catalog site, select the tile labeled Distribute apps for SharePoint, and click new app.

7. Navigate and select the folder that contains the app you wish to upload, and then click Open.

8. In the Add a document dialog box, add any optional comments about this version of the app, and then click Ok.

9. Ensure that the Enabled check box is selected so that users are able to add this app to their sites.

10. Click Save.

11. On the App Catalog site, pre-register the WebFOCUS app using:

   http://sharepointServer/sites/testSite/_layouts/15/appregnew.aspx

12. On the App Catalog site, click Settings and then click Add an App.

13. Select the app you want to add, and when you are prompted, select Trust it.

14. Create your new site collection.

15. Using your browser, go to the URL of the new site collection and select Add an App from the Settings menu.

16. Select the WebFOCUS app to add it to the new site.

   Once it is installed, you can create pages and use App Part on the ribbon to add the WebFOCUS App Parts.

17. In the Edit web part pane, ensure to specify an HTTPS URL to WebFOCUS and that your WebFOCUS environment is configured for SSL.
Installing WebFOCUS Web Parts for Microsoft SharePoint 2013

This section describes how administrators can install the WebFOCUS Web Parts for the Microsoft SharePoint Portal Server 2013.

In this chapter:

- **Microsoft SharePoint Portal Server 2013**

Microsoft SharePoint Portal Server 2013

The WebFOCUS Web Parts for Microsoft SharePoint Portal Server 2013 are included as a WebFOCUS Solution Package (webfocus.wsp).

The webfocus.wsp solution package for Microsoft SharePoint and script files are located in the following directory where WebFOCUS is installed:

```
drive:\ibi\WebFOCUS80\utilities\ops\sharepoint
```

where:

```
drive:
```

Is the drive letter corresponding to the location where WebFOCUS is installed.

Procedure: How to Install and Verify the WebFOCUS Solution Package for Microsoft SharePoint

1. Navigate to the following Microsoft SharePoint directory where WebFOCUS is installed:

```
drive:\ibi\WebFOCUS80\utilities\ops\sharepoint
```

2. Copy the `sharepoint` directory to the system where Microsoft SharePoint Portal Server 2013 is being hosted.

3. Launch the SharePoint Management Shell as an Administrator.

4. Navigate to the location of the WebFOCUS files in the `sharepoint` directory that was copied. For example:
5. Enter the following command from the Power Shell command prompt:

```
PS c:\ops\sharepoint> .\Add.ps1
```

The following prompt is displayed:
6. Specify the web application where the webfocus.wsp solution package for Microsoft SharePoint is to be deployed (or use the default localhost) and press Enter.

The webfocus.wsp solution package for Microsoft SharePoint is deployed and the Web Parts are enabled.

7. To verify if the webfocus.wsp solution package for Microsoft SharePoint is successfully deployed, access the Central Administration page.

8. Click System Settings in the left pane.
The System Settings page opens, as shown in the following image.

9. Click Manage farm solutions.
The Solution Management page opens, as shown in the following image.

![Solution Management](image)

Notice that the webfocus.wsp solution package for Microsoft SharePoint is listed with a status of Deployed.

**Procedure:** How to Uninstall the WebFOCUS Solution Package for Microsoft SharePoint

To uninstall the WebFOCUS Solution Package for Microsoft SharePoint (webfocus.wsp) and the Web Parts from the configuration, enter the following command from the Power Shell command prompt as an Administrator:

```
PS c:\ops\sharepoint> .\Remove.ps1
```

**Procedure:** How to Add and Configure WebFOCUS Web Parts

To add WebFOCUS Web Parts to the Microsoft SharePoint Portal Server:

1. Log on to the Microsoft SharePoint Portal Server 2013.
2. Navigate to the page where you want to add WebFOCUS Web Parts.
3. Edit the page.
4. From the Tools menu, click **Insert**.

5. Click **Web Part** in the menu bar.

6. From the Categories area in the left pane, click the WebFOCUS Web Parts category (for example, Information Builders).

7. From the Parts area, select the specific WebFOCUS Web Part and click **Add**.

8. To display properties for the Web Part, move your cursor over the right corner of the Web Part to display a drop-down menu.

9. Click **Edit Web Part**.

10. In the WebFOCUS Connection category, edit the Source URL by entering the machine name and port number that points to the WebFOCUS Client.

11. Expand the **Content** category.

12. Edit the context path based on your WebFOCUS Client installation.

13. Click **Apply** and then **OK**.

    Repeat steps 8 through 13 for each WebFOCUS Web Part that you added to a page.
This section describes how to install and configure WebFOCUS portlets for the IBM®
WebSphere® Portal Server version 8.5.

In this chapter:

- Prerequisites
- Installation and Configuration Overview
- Configuring the WebFOCUS Open Portal Services Gateway
- Configuring Security and Authentication Settings
- Installing and Configuring the WebFOCUS Portlets on IBM WebSphere Portal Server
  Version 8.5

Prerequisites

Prior to installing the WebFOCUS portlets, ensure that the following components are installed
and available.

- IBM WebSphere Portal Server Version 8.5, which is a JSR 286-compliant portal
  environment.
- WebFOCUS Release 8.2 Version 01 and higher.
  For more information on installing WebFOCUS, see the WebFOCUS and ReportCaster
  Installation and Configuration for Windows documentation.
- The ops286.war file, which contains the set of WebFOCUS portlets that are provided with
  WebFOCUS Open Portal Services and are compatible with JSR 286.
- The opsgw.war file, which contains the WebFOCUS Open Portal Services Gateway.
  
  **Note:** The opsgw.war file is only required if the WebFOCUS environment and the IBM
  WebSphere Portal Server are on separate machines, which requires you to deploy the
  WebFOCUS Open Portal Services Gateway.

The ops286.war and opsgw.war files are located in the following folder of your WebFOCUS
installation:

<drive>:\ibi\WebFOCUS82\webapps
Installation and Configuration Overview

This section provides a general overview of the installation process and guidelines for deploying WebFOCUS portlets to a JSR 286-compliant portal environment.

1. Using the administration console (or similar user interface) for the portal environment, deploy the ops286.war file, which is included with your WebFOCUS installation.

   The ops286.war file is located in the following folder of your WebFOCUS installation:

   `<drive>:\ibi\WebFOCUS82\webapps`

   For more information, see the corresponding administration documentation for the portal environment.

2. If the WebFOCUS environment and the portal environment are installed on separate machines, then you will need to deploy the deploy the WebFOCUS Open Portal Services Gateway to the application server that is hosting the portal environment.

   For example, in the case of the IBM WebSphere Portal environment, the WebFOCUS Open Portal Services Gateway must be deployed to the IBM WebSphere Application Server.

   For more information, see Configuring the WebFOCUS Open Portal Services Gateway.

3. Create a new portal page in your portal environment using the page design utilities that are available from the console or similar user interface. Once a portal page is available, you can add one or more WebFOCUS portlets to this page as required.

   For more information, see the corresponding user documentation for the portal environment.

Configuring the WebFOCUS Open Portal Services Gateway

This section describes how to configure the WebFOCUS Open Portal Services Gateway on an application server that is hosting a JSR 286-compliant portal environment.

Note: The use of a gateway is required when the WebFOCUS environment and the portal environment are residing on two separate machines.

Procedure: How to Configure the WebFOCUS Open Portal Services Gateway

1. Locate the opsgw.war file in the following directory:

   `<drive>:\ibi\WebFOCUS82\webapps`

2. Extract this archive to a temporary directory, for example:

   `c:\gw_temp`

3. Locate the web.xml file in the following directory:
4. Open the web.xml file using a text editor and locate the following section:

```xml
<context-param>
    <param-name>target_server_url</param-name>
    <param-value>{protocol}://{servername}:{port}</param-value>
</context-param>
```

where:

- **protocol**
  Is the communication protocol being used (for example, HTTP or HTTPS).

- **servername**
  Is the name of the application server where WebFOCUS is installed.

- **port**
  Is the port number on which the server listens.

5. Provide the appropriate values that correspond to your WebFOCUS environment, for example:

```xml
<context-param>
    <param-name>target_server_url</param-name>
    <param-value>http://hostname:8080</param-value>
</context-param>
```

6. Save the web.xml file with your changes and rewar (repackage) the archive using the following naming convention:

```text
contextpath.war
```

where:

- **contextpath**
  Is the context path of the WebFOCUS installation (for example, ibi_apps.war).

![Command prompt window showing the jar command execution](image-url)
7. Make a copy of the repackaged .war file and rename it to \textit{ibi\_html\_war}.
   \textbf{Note:} Ensure to use the context path naming convention in this instance.

8. Deploy the two .war files (\textit{ibi\_apps\_war} and \textit{ibi\_html\_war}) on the application server where the JSR 286-compliant portal environment is deployed.

   For example, in the case of the IBM WebSphere Portal environment, these .war files must be deployed to the IBM WebSphere Application Server.

   For more information on deploying .war files in an application server, see the corresponding administration or user documentation for your application server.

\textbf{Configuring Security and Authentication Settings}

WebFOCUS enables you to configure security and authentication settings for WebFOCUS Open Portal Services through the WebFOCUS Administration Console.

The \textit{ops286\_war} and \textit{opsgw\_war} files are located in the following folder of your WebFOCUS installation:

\begin{verbatim}
<drive>:\ibi\WebFOCUS82\webapps
\end{verbatim}

\textbf{Note:} Security and authentication configuration settings for WebFOCUS Open Portal Services are stored in the \textit{securitysettings-portlet.xml} file, which is located in the following folder of your WebFOCUS installation:

\begin{verbatim}
<drive>:\ibi\WebFOCUS82\config\securitysettings-portlet.xml
\end{verbatim}
Procedure: How to Enable IP Address Access

To enable IP address access using the WebFOCUS Administration Console:

1. Access the WebFOCUS Administration Console from the WebFOCUS Home page, as shown in the following image.

![Administration Console Access](image-url)
The WebFOCUS Administration Console opens, as shown in the following image.

2. Click the Security tab, as shown in the following image.
3. In the left pane, expand Security Zones, Portlet, and then select Authentication, as shown in the following image.

4. Double-click Form Based Authentication, as shown in the following image.
The Edit Form Based Authentication Settings dialog opens, as shown in the following image.

Perform the following steps:

a. Select the Enable IP Address access checkbox.

b. In the IP Address Patterns field, specify the IP address or addresses for which you want to allow access (validated connections).
   
   Use a comma character (,) if you are specifying multiple IP addresses.

b. Click OK.
5. Click Save in the right pane, as shown in the following image.

![Actions and Security Zones](image)

A message dialog displays indicating that the configuration was saved successfully, as shown in the following image.

![Information Builders WebFOCUS](image)

6. Click OK.
A message dialog displays indicating that you must reload your web application to implement your new changes, as shown in the following image.

![Information Builders WebFOCUS](image)

7. Click OK.
8. Reload (restart) your web application.

**Procedure:** How to Strip the Domain Prefix and Suffix From a User ID

If you are using Windows authentication to connect to your portal environment (for example, as user IBI\john_smith), then you can enable the setting described in this procedure to strip the domain prefix and suffix from a user ID.

**Note:** You must define your Managed Reporting user ID (mr_user_id) in the basedir directory as WINDOWS_DOMAIN\mr_user_id.

**Trimming a Prefix**

When enabled, this setting strips the Windows ID, and the portal user is logged in to Managed Reporting as mr_user_id. When disabled (default), the Windows ID is not stripped, and the portal user is logged in as WINDOWS_DOMAIN\mr_user_id.

**Trimming a Suffix**

If the portal environment you are accessing uses an authentication provider that separates a user ID (prefix) from a domain (suffix) with the “@” character (for example, mr_user_id@abc.com), then you must enable the setting described in this procedure. In this case, the suffix after the “@” character is trimmed, and the portal user is logged in as mr_user_id.

To strip the domain prefix and suffix from a user ID using the WebFOCUS Administration Console:

1. Access the Security tab in the WebFOCUS Administration Console as described in Steps 1 to 3 in *Enable IP Address Access*. 
2. Double-click *JEE Container Based Authentication*, as shown in the following image.

![Authentication Image]

The Edit JEE Container Based Authentication Settings dialog opens, as shown in the following image.

![Edit JEE Container Based Authentication Settings Image]

3. Select the *Strip the domain name from JEE user principal name* checkbox.
4. Click *OK*. 
5. Click Save in the right pane, as shown in the following image.

![Actions menu]

A message dialog displays indicating that the configuration was saved successfully, as shown in the following image.

![Configuration saved successfully]

6. Click OK.
A message dialog displays indicating that you must reload your web application to implement your new changes, as shown in the following image.

7. Click OK.
8. Reload (restart) your web application.

Installing and Configuring the WebFOCUS Portlets on IBM WebSphere Portal Server Version 8.5

To install WebFOCUS portlets on IBM WebSphere Portal Server Version 8.5, an administrator must have Manage permissions. If Manage permissions on the portal exists, then the administrator uploads the ops286.war file. This file includes descriptive information about each WebFOCUS portlet, which is placed in a database that can be queried by other portal components. During installation, the application server unpacks the ops286.war file and places the portlet classes and resources into a file system.

The state of each WebFOCUS portlet is set to active during installation. A new rule is automatically added to Access Control that defines the user who installed the WebFOCUS portlet as the owner, granting management access for that portlet. The user must assign portlet access rights to other groups and users to make that WebFOCUS portlet accessible and usable. For information about authorization rights and assigning access permissions, see the corresponding administration (access control) documentation for the IBM WebSphere Portal Server Version 8.5.

**Note:** You cannot install a WebFOCUS portlet more than once in your IBM WebSphere Portal environment. If you require two instances of a WebFOCUS portlet, you must copy the portlet to create a second instance. For more information, see *Copy a WebFOCUS Portlet*.

This section contains the following topics:

- Install the WebFOCUS Portlets on IBM WebSphere Portal Server Version 8.5
- Modify WebFOCUS Portlet Parameters and Values
- Copy a WebFOCUS Portlet
Procedure: How to Install the WebFOCUS Portlets on IBM WebSphere Portal Server Version 8.5

To install the WebFOCUS portlets on IBM WebSphere Portal Server Version 8.5:

1. Access the IBM WebSphere Portal Server administration console using a browser and click Log In, as shown in the following image.
The Log in with your Portal account dialog opens, as shown in the following image.

2. Enter a user ID and password that has administrator privileges and click Log in.

3. From the administration menu (tool wrench icon), which is located on the top pane of the console, click Portlet Management, as shown in the following image.
The Portlet Management page opens, as shown in the following image.

4. Click Web Modules from the left pane or the center pane.

The Manage Web Modules dialog opens, as shown in the following image.

```
430  Information Builders
```
5. Click **Install**.

The Installing a Web module, Step 1: Select WAR file dialog is displayed, as shown in the following image.

![Manage Web Modules dialog](image)

6. Click **Choose File**.

7. Browse to the following folder of your WebFOCUS installation and select the **ops286.war** file.

   `<drive>:\ibi\WebFOCUS82\webapps\ops286.war`

![Browse folder](image)

8. Click **Open**.
The Manage Web Modules dialog is refreshed and now shows the *ops286.war* file selected, as shown in the following image.

9. Click Next.

The Installing a Web module, Step 2: View WAR file contents dialog is displayed, as shown in the following image.
The contents of the ops286.war file that you selected are displayed, including a list of the WebFOCUS portlets that will be installed.

10. Click Finish to install the WebFOCUS portlets.

When installation is complete, a message confirming success or failure appears. A successful installation indicates that the WebFOCUS portlet has been added to the portlet catalogue and activated. To allow other users to use this portlet, you must set the access rights for it.

For information about authorization rights and assigning access permissions, see the corresponding administration (access control) documentation for the IBM WebSphere Portal Server Version 8.5.

11. To verify and confirm that the ops286.war file was installed, click the right arrow icon in the Manage Web Modules dialog to browse through the pages that list all of the web modules that are currently installed on IBM WebSphere Portal Server Version 8.5.

Notice that the ops286.war file is listed, as shown in the following image.
12. Click *Portlets* in the left pane, as shown in the following image.

![Portlets Menu](image)

13. Click the *right arrow* icon in the Manage Portlets dialog to browse through the pages that list all of the available portlets that are currently deployed to IBM WebSphere Portal Server Version 8.5.
Navigate to the last page where the WebFOCUS portlets are listed, as shown in the following image.

![Manage Portlets](image)

**Notes and Additional Steps:**

- If you need to modify any of the parameters for a WebFOCUS portlet, click Portlets from the list of available configuration options in the Portlet Management page. Click the Configure portlet icon that corresponds to the WebFOCUS portlet you want to configure.

  For more information, see *Modify WebFOCUS Portlet Parameters and Values*.

- If the WebFOCUS environment and the IBM WebSphere Portal Server are installed on separate machines, then you will need to deploy the WebFOCUS Open Portal Services Gateway to the application server that is hosting the IBM WebSphere Portal.

  For more information, see *Configuring the WebFOCUS Open Portal Services Gateway*.

- Create a new portal page in your IBM WebSphere Portal environment using the page design utilities that are available from user interface. Once a portal page is available, you can add one or more WebFOCUS portlets to this page as required.

  For more information on how to create portal pages in your IBM WebSphere Portal and add portlets to your pages, see the corresponding user documentation for the IBM WebSphere Portal Server Version 8.5.
Procedure: How to Modify WebFOCUS Portlet Parameters and Values

To modify WebFOCUS portlet parameters and values:

1. Click Portlets (under Portlet Management) in the left pane, as shown in the following image.
The Manage Portlets dialog opens, as shown in the following image.

2. Click the Last page icon to navigate to the last page where the WebFOCUS portlets are listed, as shown in the following image.

3. Click the `Configure` portlet icon that corresponds to the WebFOCUS portlet you want to configure.
For example, in the following image the *Configure* portlet icon is being selected for the WebFOCUS Report portlet.
The configuration dialog for the WebFOCUS Report portlet opens, as shown in the following image.

The available configuration parameters (referred to as preferences in IBM WebSphere Portal Server) for the WebFOCUS Report portlet are listed in a table format.

For more information on the available WebFOCUS portlet parameters that can be modified in a JSR 286-compliant portal environment, see WebFOCUS Portlet Parameters Reference.

a. To modify a value, click the **Edit value** icon (pencil) that corresponds to the parameter that you want to modify.
An Edit preference dialog opens for the parameter that you have selected. For example, in the following image the Edit preference dialog for the *height* parameter is shown.

b. Click **OK** after you have finished modifying the parameter value as required.

4. In the configuration dialog for the WebFOCUS portlet (for example, WebFOCUS Report), click the *I want to set titles and descriptions* link to modify the title and description for this portlet.
The Set Locale-specific titles and descriptions dialog opens for the selected WebFOCUS portlet, as shown in the following image.

5. Click the *Edit* icon (pencil) next to English to modify the portlet title and description.
The Set title and description for English dialog opens, as shown in the following image.

6. Enter a title and a brief description for the WebFOCUS portlet and then click OK. You are returned to the Set Locale-specific titles and descriptions dialog.

7. Click OK. You are returned to the main configuration dialog for the WebFOCUS portlet.

8. Click OK.
You are returned to the main Manage Portlets dialog, where a message indicates that changes to the portlet have been saved, as shown in the following image.
Procedure: How to Copy a WebFOCUS Portlet

To copy an existing WebFOCUS portlet in your IBM WebSphere Portal environment:

1. Click Portlets (under Portlet Management) in the left pane, as shown in the following image.
The Manage Portlets dialog opens, as shown in the following image.

2. Click the *Last page* icon to navigate to the last page where the WebFOCUS portlets are listed, as shown in the following image.

3. Click the *Copy portlet* icon that corresponds to the WebFOCUS portlet you want to copy.
For example, in the following image the Copy portlet icon is being selected for the WebFOCUS Report portlet.

The Copy portlet dialog opens, as shown in the following image.

4. Specify a name for the WebFOCUS portlet you want to copy.
5. Click OK.
A copy of the WebFOCUS portlet is now listed and available in the main Manage Portlets dialog, as shown in the following image.

![Manage Portlets Image](image)

**Reference:** WebFOCUS Portlet Parameters Reference

This section provides a reference for the WebFOCUS portlet parameters that can be modified in a JSR 286-compliant portal environment.

**WebFOCUS Report Portlet**

The following table lists and describes the configuration parameters that are available for the WebFOCUS Report portlet.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description and Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>contextpath</td>
<td>By default, the WebFOCUS context path is set to: /ibi_apps</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description and Value</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>gn</td>
<td>The gn parameter is used to distinguish between multiple instances of the WebFOCUS Report portlet and retain its attributes (for example, width and height). For example, if you add three WebFOCUS Report portlets to your portal page, specify a unique gn value for each instance of that Report portlet. The default value is set to 1.</td>
</tr>
<tr>
<td>height</td>
<td>The height of the frame in pixels. The default height is set to 500 pixels.</td>
</tr>
<tr>
<td>portletKey</td>
<td>The default value of the portletKey parameter for the WebFOCUS Report portlet is set to 2.</td>
</tr>
<tr>
<td>showrefresh</td>
<td>Enter yes or no to enable or disable the showrefresh option. The default value is set to yes.</td>
</tr>
<tr>
<td>userrunonly</td>
<td>Specifies the mode that can be set for the WebFOCUS Report portlet. If set to no, which is the default value, then the user is able to select and view their own block type. If set to yes, then the WebFOCUS Report portlet is used as a fixed report and any user that does not have Managed Reporting administrator privileges can only view this block, but not change it.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the frame in pixels. The default width is set to 500 pixels.</td>
</tr>
</tbody>
</table>

**WebFOCUS Deferred Status**
The following table lists and describes the configuration parameters that are available for the WebFOCUS Deferred Status portlet.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description and Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>contextpath</td>
<td>By default, the WebFOCUS context path is set to: /ibi_apps</td>
</tr>
<tr>
<td>height</td>
<td>The height of the frame in pixels. The default height is set to 600 pixels.</td>
</tr>
<tr>
<td>portletKey</td>
<td>The default value of the portletKey parameter for the WebFOCUS Deferred Status portlet is set to 3.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the frame in pixels. The default width is set to 380 pixels.</td>
</tr>
</tbody>
</table>

**WebFOCUS Resource Tree**

The following table lists and describes the configuration parameters that are available for the WebFOCUS Resource Tree portlet.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description and Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>contextpath</td>
<td>By default, the WebFOCUS context path is set to: /ibi_apps</td>
</tr>
<tr>
<td>height</td>
<td>The height of the frame in pixels. The default height is set to 600 pixels.</td>
</tr>
<tr>
<td>portletKey</td>
<td>The default value of the portletKey parameter for the WebFOCUS Resource Tree portlet is set to 1.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the frame in pixels. The default width is set to 400 pixels.</td>
</tr>
</tbody>
</table>
**WebFOCUS Portal**

The following table lists and describes the configuration parameters that are available for the WebFOCUS Portal portlet.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description and Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>contextpath</strong></td>
<td>By default, the WebFOCUS context path is set to: /ibi_apps</td>
</tr>
<tr>
<td><strong>height</strong></td>
<td>The height of the frame in pixels. The default height is set to 600 pixels.</td>
</tr>
<tr>
<td><strong>portletKey</strong></td>
<td>The default value of the portletKey parameter for the WebFOCUS Portal portlet is set to 4.</td>
</tr>
<tr>
<td><strong>portalName</strong></td>
<td>The default value of the portalName parameter for the WebFOCUS Portal portlet is set to /.</td>
</tr>
<tr>
<td><strong>width</strong></td>
<td>The width of the frame in pixels. The default width is set to 1000 pixels.</td>
</tr>
</tbody>
</table>

**WebFOCUS Portal Tree**

The following table lists and describes the configuration parameters that are available for the WebFOCUS Portal Tree portlet.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description and Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>contextpath</strong></td>
<td>By default, the WebFOCUS context path is set to: /ibi_apps</td>
</tr>
<tr>
<td><strong>height</strong></td>
<td>The height of the frame in pixels. The default height is set to 600 pixels.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description and Value</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>portletKey</td>
<td>The default value of the portletKey parameter for the WebFOCUS Portal Tree portlet is set to 5.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the frame in pixels. The default width is set to 400 pixels.</td>
</tr>
</tbody>
</table>
Chapter 16  Installing WebFOCUS Portlets for the Apache Jetspeed Portal

This section describes how to install and configure WebFOCUS portlets for the Apache Jetspeed Portal.

In this chapter:

- Prerequisites
- Installation and Configuration Overview
- Configuring the WebFOCUS Open Portal Services Gateway
- Configuring Security and Authentication Settings
- Configuring the WebFOCUS Portlets
- Configuring the GN Parameter

Prerequisites

Prior to installing the WebFOCUS portlets, ensure that the following components are installed and available.

- Apache Jetspeed Portal Version 2.3.1, which is a JSR 286-compliant portal environment.
- WebFOCUS Release 8.2 Version 01 and higher.
  
  For more information on installing WebFOCUS, see the WebFOCUS and ReportCaster Installation and Configuration for Windows documentation.

- The ops286.war file, which contains the set of WebFOCUS portlets that are provided with WebFOCUS Open Portal Services and are compatible with JSR 286.

- The opsgw.war file, which contains the WebFOCUS Open Portal Services Gateway.
  
  Note: The opsgw.war file is only required if the WebFOCUS environment and the Apache Jetspeed Portal are on separate machines, which requires you to deploy the WebFOCUS Open Portal Services Gateway.

The ops286.war and opsgw.war files are located in the following folder of your WebFOCUS installation:

<drive>:\ibi\WebFOCUS82\webapps
Installation and Configuration Overview

This section provides a general overview of the installation process and guidelines for deploying WebFOCUS portlets to a JSR 286-compliant portal environment.

1. Using the administration console (or similar user interface) for the portal environment, deploy the `ops286.war` file, which is included with your WebFOCUS installation.

   The `ops286.war` file is located in the following folder of your WebFOCUS installation:

   `<drive>:\ibi\WebFOCUS82\webapps`

   For more information, see the corresponding administration documentation for the portal environment.

2. If the WebFOCUS environment and the portal environment are installed on separate machines, then you will need to deploy the WebFOCUS Open Portal Services Gateway to the application server that is hosting the portal environment.

   For example, in the case of the Apache Jetspeed Portal environment, the WebFOCUS Open Portal Services Gateway must be deployed to the Apache Tomcat Application Server.

   For more information, see Configuring the WebFOCUS Open Portal Services Gateway.

3. Create a new portal page in your portal environment using the page design utilities that are available from the console or similar user interface. Once a portal page is available, you can add one or more WebFOCUS portlets to this page as required.

   For more information, see the corresponding user documentation for the portal environment.

Configuring the WebFOCUS Open Portal Services Gateway

This section describes how to configure the WebFOCUS Open Portal Services Gateway on an application server that is hosting a JSR 286-compliant portal environment.

**Note:** The use of a gateway is required when the WebFOCUS environment and the portal environment are residing on two separate machines.

**Procedure:** How to Configure the WebFOCUS Open Portal Services Gateway

1. Locate the `opsgw.war` file in the following directory:

   `<drive>:\ibi\WebFOCUS82\webapps`

2. Extract this archive to a temporary directory, for example:

   `c:\gw_temp`

3. Locate the `web.xml` file in the following directory:
4. Open the `web.xml` file using a text editor and locate the following section:

```xml
<context-param>
  <param-name>target_server_url</param-name>
  <param-value>{ protocol }://{ servername }{: port }</param-value>
</context-param>
```

where:

- **protocol** is the communication protocol being used (for example, HTTP or HTTPS).
- **servername** is the name of the application server where WebFOCUS is installed.
- **port** is the port number on which the server listens.

5. Provide the appropriate values that correspond to your WebFOCUS environment, for example:

```xml
<context-param>
  <param-name>target_server_url</param-name>
  <param-value>http://hostname:8080</param-value>
</context-param>
```

6. Save the `web.xml` file with your changes and rewar (repackage) the archive using the following naming convention:

```xml
contextpath.war
```

where:

- **contextpath** is the context path of the WebFOCUS installation (for example, `ibi_apps.war`).
7. Make a copy of the repackaged .war file and rename it to *ibi_html.war*.

   **Note:** Ensure to use the context path naming convention in this instance.

8. Deploy the two .war files (*ibi_apps.war* and *ibi_html.war*) on the application server where the JSR 286-compliant portal environment is deployed.

   For example, in the case of the Apache Jetspeed Portal environment, these .war files must be deployed to the Apache Tomcat Application Server.

   For more information on deploying .war files in an application server, see the corresponding administration or user documentation for your application server.

**Configuring Security and Authentication Settings**

WebFOCUS enables you to configure security and authentication settings for WebFOCUS Open Portal Services through the WebFOCUS Administration Console. For more information, see *Configuring Security and Authentication Settings*.

**Configuring the WebFOCUS Portlets**

You can use the Jetspeed Portal to configure the WebFOCUS portlets on the Apache Jetspeed 2.3.1 Portal Server.

**Procedure:** *How to Configure the WebFOCUS Portlets*

To configure the WebFOCUS Portlets:

1. Logon to the Jetspeed Portal as an administrator.

2. Click *Jetspeed Administration* in the left pane and then the *Portlet Application Manager* tab.
The Registry Applications List pane opens, as shown in the following image.

3. Under the Applications section, click ops286.

   A list of available WebFOCUS portlets that are available on the Jetspeed 2.3.1 Portal are displayed.

4. To configure a specific WebFOCUS portlet, click on the corresponding hyperlink in the Portlets / Clones section. For example, click the Resource Tree hyperlink.
The PortletDetailsManager pane opens and displays the available properties for the selected WebFOCUS Resource Tree portlet.

5. Click the Preferences tab.

6. Modify the values (if required) for the following parameters:

   - **portletKey** (default value is set to 1)
   - **width** (default value is set to 400)
   - **contextpath** (default value is set to /ibi_apps)
   - **height** (default value is set to 600)

7. Click Save to save and apply your changes.

8. Repeat this procedure for the following WebFOCUS portlets:

   - Report
   - Deferred Status
   - Portal
Portal Tree

For more information on the available parameters for each WebFOCUS portlet, see WebFOCUS Portlet Parameters Reference.

**Procedure: How to Add a Page for the WebFOCUS Portlets**

To add a page for the WebFOCUS portlets in Jetspeed:

1. Logon to the Jetspeed Portal as an administrator.
   
The Jetspeed Portal opens and displays the Welcome page by default.

2. Click the Edit button, which is located in the upper-right corner, as shown in the following image.
3. Under the Page Configuration section, enter a name for your new page (for example, WebFOCUS), and then click Create Page.

A new page named WebFOCUS is created and appears as a tab, as shown in the following image.
4. Click the WebFOCUS tab and then click the Edit button located in the upper-right corner, as shown in the following image.

You are returned to the Page/Folder Customizer pane.

5. Click the Add Portlet button located in the upper-right corner of the Page/Folder Customizer pane, as shown in the following image.

The Portlet Selector pane opens and displays a list of available portlets that you can add to your new page, as shown in the following image.
6. Browse through the list and locate the WebFOCUS portlets that you would like to add to your new page.

The following image provides a reference of how each WebFOCUS portlet appears in this list.

![WebFOCUS Portlets](image)

7. Click the corresponding **Add** hyperlink for the WebFOCUS portlet(s) that you would like to add to your new page.

8. Close the Portlet Selector pane by clicking the green left (back) arrow or the **GoBack** hyperlink, as shown in the following image.

![Portlet Selector](image)

You are returned to the Page/Folder Customizer pane.

9. Click the **View** button, which is located in the upper-right corner.
The selected WebFOCUS portlets appear accordingly based on the page layout you specified. In the following example, the WebFOCUS Report and Resource Tree portlets are displayed and running in the new WebFOCUS page.

Configuring the GN Parameter

The $gn$ parameter is used to distinguish between multiple instances of a WebFOCUS Report component and retain its attributes (for example, width, height, and refresh rate).
If you add three Report components to your portal page, specify a unique gn value for each instance of that Report component. The following diagram illustrates this functionality using three WebFOCUS reports.

The attributes you specify for each instance of the Report component are retained. If all three Report components had the same gn value and you changed the width or height of one component, then the remaining instances would reflect your change and the end result may be unsatisfactory. For example:

```
http://hostname:port/context/report.ops?gn=number
```

where:

- **hostname**
  - Is the machine where the WebFOCUS client is installed and hosted.

- **port**
  - Is the assigned port number for the WebFOCUS client.

- **number**
  - Is a unique numerical value representing the component report number.
This appendix describes the format and structure of URL calls that can be used to directly access WebFOCUS components (for example, in an application or outside of a third-party portal environment).

In this chapter:

- Report Component
- Deferred Status Component
- Resource Tree Component
- Portal Component
- Portal Tree Component

Report Component

Use the following URL to directly access the WebFOCUS Report component:

```
http://hostname:port/context/report.ops?userrunonly=yes|no&showrefresh=yes|no&gn=n&usescrollbars=yes|no&showtimestamp=yes|no
```

The following table lists and describes the parameters for the WebFOCUS Report component:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>Host name (or IP address) of the machine that is hosting the WebFOCUS client.</td>
</tr>
<tr>
<td>port</td>
<td>Port number to the WebFOCUS client.</td>
</tr>
<tr>
<td>context</td>
<td>The application context path. For example: /ibi_apps</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>userrunonly</td>
<td>Used to control whether or not a user is allowed to change the content displayed in the Report component.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is set to no, which is the default, then the user will be able to select a WebFOCUS content item and its display mode.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is set to yes, then the Report component will display a default content item, such as a report, to any user that does not have Managed Reporting administrator privileges, and the Select Report menu option will not be available, preventing the user from changing the content item selected by default.</td>
</tr>
<tr>
<td>showrefresh</td>
<td>If this parameter is set to no, then the Refresh option will not be available on the Report component menu and the user will not be able to manually trigger the content item to refresh.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is set to yes, which is the default, then the Refresh option will be displayed on the Report component menu and the user can manually trigger the content item to refresh.</td>
</tr>
<tr>
<td>gn</td>
<td>This parameter is used to distinguish between multiple instances of the WebFOCUS Report component and retain its attributes (for example, width, height, and refresh rate).</td>
</tr>
<tr>
<td></td>
<td>If you add three Report components to your portal page, then you must specify a unique gn value for each instance of that Report component.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>usescrollbars</td>
<td>If this parameter is set to no, then the Report component will not display scrollbars for the content item displayed.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is set to yes, which is the default, then the Report component will display scrollbars for the content item displayed.</td>
</tr>
<tr>
<td></td>
<td>This is particularly useful for content items that are larger than the component width and height, such as reports with several rows.</td>
</tr>
<tr>
<td>showtimestamp</td>
<td>If this parameter is set to no, which is the default, then the Report component will not display the time stamp.</td>
</tr>
<tr>
<td></td>
<td>If this parameter is set to yes, then the Report component will display the time stamp.</td>
</tr>
</tbody>
</table>

**Deferred Status Component**

Use the following URL to directly access the WebFOCUS Deferred Status component:

```
http://hostname:port/context/deferstatus.ops
```

The following table lists and describes the parameters for the WebFOCUS Deferred Status component:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>Host name (or IP address) of the machine that is hosting the WebFOCUS client.</td>
</tr>
<tr>
<td>port</td>
<td>Port number to the WebFOCUS client.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>context</td>
<td>The application context path. For example: <code>/ibi_apps</code></td>
</tr>
</tbody>
</table>

**Resource Tree Component**

Use the following URL to directly access the WebFOCUS Resource Tree component:

`http://hostname:port/context/domain.ops`

The following table lists and describes the parameters for the WebFOCUS Resource Tree component:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>Host name (or IP address) of the machine that is hosting the WebFOCUS client.</td>
</tr>
<tr>
<td>port</td>
<td>Port number to the WebFOCUS client.</td>
</tr>
<tr>
<td>context</td>
<td>The application context path. For example: <code>/ibi_apps</code></td>
</tr>
</tbody>
</table>

**Portal Component**

Use the following URL to directly access the WebFOCUS Portal component:

`http://hostname:port/context/portal.ops?portalPath=`

The following table lists and describes the parameters for the WebFOCUS Portal component:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>Host name (or IP address) of the machine that is hosting the WebFOCUS client.</td>
</tr>
<tr>
<td>port</td>
<td>Port number to the WebFOCUS client.</td>
</tr>
</tbody>
</table>
### Portal Tree Component

Use the following URL to directly access the WebFOCUS Portal Tree component:

```
http://hostname:port/context/portaltree.ops
```

The following table lists and describes the parameters for the WebFOCUS Portal Tree component:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostname</td>
<td>Host name (or IP address) of the machine that is hosting the WebFOCUS client.</td>
</tr>
<tr>
<td>port</td>
<td>Port number to the WebFOCUS client.</td>
</tr>
<tr>
<td>context</td>
<td>The application context path. For example: /ibi_apps</td>
</tr>
</tbody>
</table>
Embedding WebFOCUS Business Intelligence Content Into Salesforce.com

Salesforce.com is a cloud computing company, which develops a leading Customer Relationship Management (CRM) platform with cloud-based applications for sales, service, and marketing. This section describes how to embed WebFOCUS Business Intelligence (BI) content into Salesforce.com.
This section describes how to embed WebFOCUS Business Intelligence (BI) content into Salesforce.com.

In this chapter:

- Embedding a URL to Run a WebFOCUS Report
- Configuring SAML Authentication
- Programming Solutions
- Drill-back Support for WebFOCUS Content Embedded in Salesforce.com

Embedding a URL to Run a WebFOCUS Report

This section describes a simple example of embedding a URL into Salesforce.com (SFDC) that runs a WebFOCUS report.

For example:


1. Ensure that your WebFOCUS environment is configured for Secure Sockets Layer (SSL).
2. Login to Salesforce.com.
3. Click the gear icon to access the Setup menu, as shown in the following image.
4. In the left pane under PLATFORM TOOLS, expand User Interface and then click Tabs, as shown in the following image.

5. Under Web Tabs, click New, as shown in the following image.
The New Web Tab dialog opens showing the Step 1. Choose Tab Layout pane, as shown in the following image.

6. Ensure the Full page width layout is selected and then click Next.

The Step 2. Define Content and Display Properties pane opens, as shown in the following image.

7. In the Display Properties area, enter a value in the Tab Label field and select a Tab Style from the drop-down list.
8. Change the default value (600) in the Content Frame Height (pixels) field if needed, and then click Next.

The Step 3. Enter the URL Details pane opens, as shown in the following image.

9. Enter a URL that runs a WebFOCUS report in the bottom area of the screen.

For example:

```
```

10. Click Next.

11. Do not make any changes for the Add to Profiles and Add to Custom Apps steps that follow.

12. Click Save.

The new tab you created (for example, Test Tab) is now listed under the Web Tabs area, as shown in the following image.
13. Click the Tiles menu, as shown in the following image.

![Tiles menu image]

14. Open a Salesforce.com application by clicking the corresponding tile, as shown in the following image.

![App Launcher image]

15. Select the tab you created (for example, Test Tab) to run the WebFOCUS report you specified in the URL and display its output, as shown in the following image.

![Salesforce tab image]

**Configuring SAML Authentication**

This section describes how to configure Security Assertion Markup Language (SAML) authentication as a single sign-on (SSO) login between Salesforce.com and WebFOCUS. Doing so prevents you from having to log on to Salesforce.com and WebFOCUS separately.
Enabling the Identity Provider

1. Log on to Salesforce.com.
2. Click the gear icon to access the Setup menu, as shown in the following image.

3. In the left pane under SETTINGS, expand Company Settings and then click My Domain, as shown in the following image.
The My Domain pane opens, as shown in the following image.

4. Specify your domain name, and then click **Check Availability**.
5. Once your domain has been verified, click **Register Domain**.
6. Once your domain has been registered, log in to the domain by clicking **Log in**, as shown in the following image.
7. In the left pane, expand Security Controls and select Identity Provider, as shown in the following image.

8. Click Enable Identity Provider.

The following screen is displayed.

9. Click Save.
The following screen is displayed, which provides details regarding the Identity Provider, metadata, and the certificate.

![Screen Displaying Identity Provider Details]

10. Click **Download Metadata**.

Copy the metadata into the following WebFOCUS directory:

```
\ibi\WebFOCUS82\config\was\saml
```

This metadata will be used to configure WebFOCUS for the XML file that is used by the Identity Provider.

The specific names of the files are not important, but configuration values in the `securitysettings.xml` file must reference the correct metadata file.

![Metadata Files]

### Configuring WebFOCUS and Generating the `wfspMetadata.xml` File

At a high level, this process consists of the following steps:

- Creating a key pair to be used for WebFOCUS signing and encrypting (`keytool` command).
- Importing a Salesforce.com certificate (`keytool` command).
- Generating the `wfspMetadata.xml` file.
Configuring WebFOCUS to utilize the `wfspMetadata.xml` and `SalesforceMetadata.xml` files.

To configure WebFOCUS and generate the `wfspMetadata.xml` file:

1. Navigate to the WebFOCUS Administration Console and click the Security tab.
2. In the left pane, expand Security Zones, Default, and then click Authentication.
3. In the right pane, click Key Management.
   The Key Management dialog opens.
4. Specify the password for the Keystore.
5. Click Add.
   The Certificate Alias and Password dialog opens, as shown in the following image.

![Certificate Alias and Password dialog](image)

6. Specify the alias and password for the certificate in the corresponding fields, and then click the Default Certificate Alias check box.
   The password for the Keystore, alias of the certificate, and password for the certificate, are all in the keytool step for generating the key.
7. Click OK to save your changes and close the Certificate Alias and Password dialog.
8. Click OK to save your changes and close the Key Management dialog.
9. From the Authentication pane, right-click SAML Authentication and select Edit from the context menu, as shown in the following image.
The Edit SAML Authentication Settings dialog opens, as shown in the following image.

10. Specify values for the following parameters:

- Entity Alias
- Signing Certificate Alias
- Encryption Certificate Alias


   If this option remains selected, logging out from WebFOCUS will automatically log you out from Salesforce.com.

12. Leave the default values for all of the remaining parameters.

   **Note:** The same signing and encryption certificates are used in this example, but two different certificates could also be used, if configured originally using the keytool command.

13. Click Generate Metadata.
The Service Provider (SP) Metadata Generation dialog opens, as shown in the following image.

14. Click **Generate**.

**Note:** If there were any issues with the passwords for the Keystore or certificate, a JSON file is returned and not the `wfspMetadata.xml` file.

15. Copy the `wfspMetadata.xml` file to the following WebFOCUS directory:
Provide this file to your ADFS administrator for their use in the configuration of ADFS.

16. Enable the Alternate Authentication Zone to allow you to sign in to WebFOCUS from the local machine using forms-based authentication and not SAML. Doing so will allow you to fix any configuration issues.

17. In the Default Authentication Zone, disable Form Based Authentication, Anonymous Authentication, and enable SAML Authentication, as shown in the following image.

18. Click Save.

19. Restart your application server so these changes can take effect.

However, do not attempt to sign in until completing the steps described in the next section.

Configuring WebFOCUS as a Service Provider for Salesforce.com

To configure WebFOCUS as a service provider for Salesforce.com:

1. Log on to the new domain you created for Salesforce.com.
2. In the left pane under Administer, expand Security Controls and select Identity Provider.
3. Click **Service Providers are now created via Connected Apps. Click here**, as shown in the following image.

![Identity Provider Setup](image-url)

<table>
<thead>
<tr>
<th>Identity Provider Setup</th>
<th>Full</th>
<th>Enable</th>
<th>Download Certificate</th>
<th>Download Metadata</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Details</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issuer</td>
<td><a href="https://biginn-dev-ed.salesforce.com">https://biginn-dev-ed.salesforce.com</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Currently chosen certificate details</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Label</td>
<td>SelfSignedCert_14F0279_145541</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Created Date</td>
<td>1/20/2017 6:54 AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issuer Name</td>
<td>SelfSignedCert_14F0279_145541</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expired Date</td>
<td>12/03/2017 8:03 AM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Size</td>
<td>2048</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SAML Metadata Discovery Endpoints</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salesforce Identity</td>
<td><a href="https://biginn-dev-ed.salesforce.com/web-innovate/samlp.xml">https://biginn-dev-ed.salesforce.com/web-innovate/samlp.xml</a></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Service Providers</strong></th>
<th>Service Providers are now created via Connected Apps. Click here</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Created Date</td>
</tr>
<tr>
<td>No Service Providers</td>
<td></td>
</tr>
</tbody>
</table>
The New Connected App dialog opens, as shown in the following image.

New Connected App

**Basic Information**

- Connected App Name: WebFOCUS
- API Name: WebFOCUS
- Contact Email: WebFOCUS@ibi.com
- Contact Phone: 212-736-4433
- Logo image URL: [Upload logo image or Choose one of our sample logos](#)
- Icon URL: [Choose one of our sample logos](#)
- Info URL: [Choose one of our sample logos](#)
- Description: WebFOCUS 8202

**API (Enable OAuth Settings)**

- Enable OAuth Settings: [ ]

**Web App Settings**

- Start URL: [https://bmn-8202.ibi.com/ibi_apps8/](https://bmn-8202.ibi.com/ibi_apps8/)
- Enable SAML
- Entity ID: [https://bmn-8202.ibi.com/ibi_apps8/sp](https://bmn-8202.ibi.com/ibi_apps8/sp)
- ACS URL: [https://bmn-8202.ibi.com/ibi_apps8/saml/SSO/alias/bmn8202](https://bmn-8202.ibi.com/ibi_apps8/saml/SSO/alias/bmn8202)
- Enable Single Logout
- Subject Type: Username
- Issuer: [https://bigbnm-dev-ed.my.salesforce.com](https://bigbnm-dev-ed.my.salesforce.com)
- IdP Certificate: [SelfSignedCert_07Dec2017_145541](#)
- Verify Request Signature: [ ]
- Encrypt SAML Response: [ ]

**Note:** If you select the *Enable SAML* check box in the Web App Settings section of this dialog, then the SAML information that must be entered is displayed. You should copy this information from the `wfspMetadata.xml` file, as Salesforce.com does not provide the ability to upload WebFOCUS metadata as some other Identity Providers.

4. Values for the Assertion Consumer Service (ACS) URL and Entity ID should be copied from the `wfspMetadata.xml` file.
You can search for `entityID` within the `wfspMetadata.xml` file.

5. Click Save to save these configuration settings.

6. Click the gear icon to access the Setup menu, as shown in the following image.

7. In the left pane under PLATFORM TOOLS, expand Apps, Connected Apps, and then Manage Connected Apps.

8. Select the Label of the Connected App that was created (for example, WebFOCUS).

The configuration pane for the Connected App (WebFOCUS) is displayed, as shown in the following image.

To allow users to be able to access WebFOCUS as a Service Provider, you must add profiles to this Connected App.
9. Scroll down and select *Manage Profiles*, as shown in the following image.
The Application Profile Assignment dialog opens, as shown in the following image.

10. Select the user(s) that will access WebFOCUS using Salesforce.com as a SAML authentication provider, and then click Save.

11. Return to the configuration pane for the Connected App (WebFOCUS), as shown in step 8.
The profiles you assigned to the Connected App (WebFOCUS) are now listed under the Profiles section, as shown in the following image.

12. You can test logging on to WebFOCUS by using the URL you configured.

https://server.ibi.com/ibi_apps/

Redirect to your Salesforce.com login page.

13. Enter your Salesforce.com user credentials.

You are redirected to WebFOCUS. This is a Service Provider initiated login (login from WebFOCUS).

14. If you log on to Salesforce.com using its URL, then any WebFOCUS content will also be logged on from the back-end.

This is an Identity Provider initiated login.

Programming Solutions

Embedding a URL in Salesforce.com (SFDC) to run a WebFOCUS report is a simple example of embedding WebFOCUS BI content. To accomplish more advanced embedding techniques in SFDC (for example, calling multiple web services, checking cookies, and so on), some programming will be required.
SFDC provides a plug-in for Eclipse called Force.com IDE, which is an integrated development environment for creating, modifying, and deploying SFDC applications.

Force.com IDE allows the development of Apex classes and Visualforce pages, and maintains synchronization with the SFDC environment.
The Security Token is generated on the SFDC website and is required for any API program to access SFDC, such as Force.com IDE.

Apex classes are similar to Java classes, but have special codes for SFDC. Likewise, Visualforce pages are similar to Java Server Pages (JSPs).

If you do not want to integrate SAML, and would prefer to do something like a web service signOn or have a need to run multiple web services, then you need to use what SFDC calls Chained Callouts.

A Callout is the term used by SFDC for calling an external web service.

Chained Callouts means that one Callout will need the response from the previous instance as in a signOn and then an execution of a procedure, schedule, and so on.

For example:
public with sharing class ChainedContinuationController {
    // Unique label for the initial callout request
    public String requestLabel1;
    // Unique label for the chained callout request
    public String requestLabel2;
    // Result of initial callout
    public String result1 {get;set;}
    // Result of chained callout
    public String result2 {get;set;}
    // Endpoint of long-running service
    private static final String LONG_RUNNING_SERVICE_URL1 = 'http://pmdev.ibi.com/ibi_apps/rs/ibfs';
    // Action method
    public Object invokeInitialRequest() {
        // Create continuation with a timeout
        Continuation con = new Continuation(60);
        // Set callback method
        con.continuationMethod='processInitialResponse';
        // Create first callout request
        String body1 = 'IBIRS_action=signOn&IBIRS_userName=david&IBIRS_password=david';
        HttpRequest req = new HttpRequest();
        req.setMethod('POST');
        req.setBody(body1);
        req.setHeader('Content-Type', 'application/x-www-form-urlencoded');
        req.setEndpoint(LONG_RUNNING_SERVICE_URL1);
        // Add initial callout request to continuation
        this.requestLabel1 = con.addHttpRequest(req);
        // Return the continuation
// Callback method for initial request
public Object processInitialResponse() {
    // Get the response by using the unique label
    HttpResponse response = Continuation.getResponse(this.requestLabel1);
    // Set the result variable that is displayed on the Visualforce page
    this.result1 = response.getBody();
    String cookie = response.getHeader('Set-Cookie');
    Continuation chainedContinuation = null;
    // Chain continuation if some condition is met
    if (response.getBody().toLowerCase().contains('expired')) {
        // Create a second continuation
        chainedContinuation = new Continuation(60);
        // Set callback method
        chainedContinuation.continuationMethod='processChainedResponse';
        // Create callout request
        HttpRequest req = new HttpRequest();
        req.setMethod('GET');
        req.setHeader('Content-Type', 'application/x-www-form-urlencoded');
        req.setHeader('Cookie', cookie);
        req.setEndpoint(LONG_RUNNING_SERVICE_URL2 + '?IBIRS_action=run');
        // Add callout request to continuation
        this.requestLabel2 = chainedContinuation.addHttpRequest(req);
    }
    // Start another continuation
    return chainedContinuation;
}

// Callback method for chained request
public Object processChainedResponse() {
    // Get the response for the chained request
    HttpResponse response = Continuation.getResponse(this.requestLabel2);
    // Set the result variable that is displayed on the Visualforce page
    this.result2 = response.getBody();
    // Return null to re-render the original Visualforce page
    return null;
}

The following is an example of the syntax used to define a Visualforce page.
You can access the Developer Console, as shown in the following image.
The Developer Console is where you define and configure a Visualforce page, as shown in the following image.
The following image shows sample output that is generated using the Developer Console.

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>MODEL</th>
<th>DEALER_COST</th>
<th>RETAIL_COST</th>
<th>SALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLAND</td>
<td>JAGUAR V12XE AUTO</td>
<td>7,427</td>
<td>8,878</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>XJ12L AUTO</td>
<td>11,194</td>
<td>13,491</td>
<td>12000</td>
</tr>
<tr>
<td>JENSEN</td>
<td>INTERCEPTOR III</td>
<td>14,940</td>
<td>17,850</td>
<td>0</td>
</tr>
<tr>
<td>TRUMPH</td>
<td>TR7</td>
<td>4,292</td>
<td>5,100</td>
<td>0</td>
</tr>
<tr>
<td>FRANCE</td>
<td>PEUGEOT 504 4 DOOR</td>
<td>4,631</td>
<td>5,610</td>
<td>0</td>
</tr>
<tr>
<td>ITALY</td>
<td>ALFA ROMEO 2000 4 DOOR BERLINA</td>
<td>4,915</td>
<td>5,925</td>
<td>4800</td>
</tr>
<tr>
<td></td>
<td>2000 GT VELOCE</td>
<td>5,660</td>
<td>6,820</td>
<td>12400</td>
</tr>
<tr>
<td></td>
<td>2000 SPIDER VELOCE</td>
<td>5,660</td>
<td>6,820</td>
<td>13000</td>
</tr>
<tr>
<td>MASERATI</td>
<td>DORA 2 DOOR</td>
<td>25,000</td>
<td>31,500</td>
<td>0</td>
</tr>
<tr>
<td>JAPAN</td>
<td>DATSUN B210 2 DOOR AUTO</td>
<td>2,626</td>
<td>3,139</td>
<td>4300</td>
</tr>
<tr>
<td></td>
<td>TOYOTA COROLLA 4 DOOR DIX AUTO</td>
<td>2,886</td>
<td>3,339</td>
<td>35030</td>
</tr>
<tr>
<td>W GERMANY</td>
<td>AUDI 100 LS 2 DOOR AUTO</td>
<td>5,063</td>
<td>5,970</td>
<td>7800</td>
</tr>
<tr>
<td>BMW</td>
<td>2002 2 DOOR</td>
<td>5,800</td>
<td>5,940</td>
<td>8950</td>
</tr>
<tr>
<td></td>
<td>2002 2 DOOR AUTO</td>
<td>6,000</td>
<td>6,355</td>
<td>8900</td>
</tr>
<tr>
<td></td>
<td>3.0 SI 4 DOOR</td>
<td>10,000</td>
<td>13,752</td>
<td>14000</td>
</tr>
<tr>
<td></td>
<td>3.0 SI 4 DOOR AUTO</td>
<td>11,000</td>
<td>14,123</td>
<td>18940</td>
</tr>
<tr>
<td></td>
<td>530i 4 DOOR</td>
<td>8,300</td>
<td>9,097</td>
<td>14000</td>
</tr>
<tr>
<td></td>
<td>530i 4 DOOR AUTO</td>
<td>8,400</td>
<td>9,495</td>
<td>15600</td>
</tr>
</tbody>
</table>
Adding a Visualforce page to your SFDC dashboard is simple:

1. In the left pane under PLATFORM TOOLS, expand User Interface and then click Tabs, as shown in the following image.
The Tabs pane opens, as shown in the following image.

2. On the right side, under the Visualforce Tabs section, click New.
3. Select the name of your Visualforce page from the Visualforce Page drop-down list.
4. In the Display Properties area, enter a value in the Tab Label field, Tab Name field, and then select a Tab Style from the drop-down list.
5. Click Next.
6. Do not make any changes for the Add to Profiles and Add to Custom Apps steps that follow.
7. Click Save.
8. You can now select this new tab containing your Visualforce page when you open a SFDC application in the dashboard, as shown in the following image.
Note: A Visualforce page may also contain HTML and JavaScript. For example:
Drill-back Support for WebFOCUS Content Embedded in Salesforce.com

WebFOCUS Embedded Business Intelligence (BI) solutions currently support integration between WebFOCUS and Salesforce.com (SFDC) with:

- SFDC tabs that contain WebFOCUS content within HTML iframes.
- SFDC Visualforce pages containing WebFOCUS content.
- The SFDC adapter for the WebFOCUS Reporting Server to generate and display WebFOCUS reports using SFDC data.

This section describes additional integration functionality that allows WebFOCUS content to drill-back into SFDC portal tabs, passing in values those tabs use to display specific Opportunities, and so on. The user interface for this feature is a SFDC portal application that contains a Visualforce tab, which displays a Visualforce page.

Configuring the Visualforce Page

The Visualforce page should be coded, as shown in the following example:

```html
<apex:page controller="PageReferenceController">
    <html>
        <head/>
    </head>
    <body>
        <apex:form>
            <apex:actionFunction name="redirect" action="{!redirectToOppsPage}" rerender="msgs">
                <apex:param name="opps_url_param" value="" assignTo="{!opps_url}"/>
            </apex:actionFunction>
        </apex:form>

        <script type="text/javascript">
            window.addEventListener("message", receiveMessage, false);
            function receiveMessage(event)
            {
                if(typeof event.data === 'string')
                {
                    if(event.data.indexOf('NAVIGATE') >= 0)
                    {
                        var params = event.data.split(';');
                        var action_tokens = params[0].split('=');
                        var url_tokens = params[1].split('=');
                        redirect(url_tokens[1]);
                    }
                }
            }
        </script>
    </body>
</apex:page>
```
The following section in this Visualforce page states the name of the Apex class that will get called from this page (PageReferenceController).

<apex:page controller="PageReferenceController">

The following section defines a function named redirect and states the action, which is to call another function named redirectToOppsPage.

<apex:actionFunction name="redirect" action="{!redirectToOppsPage}" rerender="msgs">

The following section defines a parameter for this Visualforce page named opps_url_param with an initial value of null, and it should be assigned to the value of opps_url, which is defined in the Apex class.

<apex:param name="opps_url_param" value="" assignTo="{!opps_url}"/>

The following section starts the definition of a JavaScript block.

<script type="text/javascript">

The following section adds an event listener to listen for messages from embedded iframes that contain content from a different origin (specifically, WebFOCUS content in this example) and executes the function receiveMessage when a message is received.
window.addEventListener("message", receiveMessage, false);

The following section starts the `receiveMessage` function, which has one parameter, `event`.

```javascript
function receiveMessage(event)
```

The following section checks the `data` of the `event` to make sure it is a `string`.

```javascript
if(typeof event.data === 'string')
```

The following section looks at that string to check if it contains the string `NAVIGATE`.

```javascript
if(event.data.indexOf('NAVIGATE') >= 0)
```

The following section is the code that parses the message text. The message originates from the WebFOCUS procedure that will perform the drill-back. In the example provided, it is `ACTION=NAVIGATE;URL=SF_URL;`.

```javascript
var params = event.data.split(';');
    var action_tokens = params[0].split('=');
    var url_tokens = params[1].split('=');
    redirect(url_tokens[1]);
```

The following section executes the redirect action defined in `<apex:actionFunction name="redirect"` and passes the URL to drill-back.

```html
    redirect(url_tokens[1]);
```

This calls the `redirectToOppsPage` function defined in the Apex class described in *Configuring the Apex Class* on page 507.

The following section defines the iframe ID and source that should run to populate the iframe.

```html
<iframe id="wf_dashboard" src="https://server:port/ibi_apps/run.bip?BIP_REQUEST_TYPE=BIP_LAUNCH&BIP_folder=IBFS%253A%252FWFC%252FRepository%252FRetail_Samples%252F&BIP_item=sfdc_page_for_drillback" style="width:100%;">
```

The following section defines another JavaScript function used to resize the iframe based on the WebFOCUS contents `innerHeight`.
Configuring the Apex Class

The following Apex class is called by the Visualforce page and defines the `opps_url` method and the `redirectToOppsPage` function.

```java
public class PageReferenceController {

    public String opps_url {get; set;}

    public PageReference redirectToOppsPage() {
        PageReference pageRef;
        pageRef = new PageReference(opps_url);
        pageRef.setRedirect(true);
        return pageRef;
    }
}
```

The function performs the drill-back to the URL that was set in `opps_url`. Specifically, it defines a page reference using the value of `opps_url` and returns that page reference to the Visualforce page, which is the caller of the function.

Configuring the WebFOCUS Procedure

This section provides an example of a WebFOCUS procedure that you can use as a model.
DEFINE FILE retail_samples/wf_retail_lite ADD
OPP_ID/A255V=IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Accessories' THEN '0064C0000031IA6QAM'
ELSE IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Camcorder' THEN '0064C0000031IBCQA2'
ELSE IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Computers' THEN '0064C0000031IBHQA2'
ELSE IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Media Player' THEN '0064C0000031IBbQAM'
ELSE IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Stereo Systems' THEN '0064C0000031IBgQAM'
ELSE IF WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY EQ 'Televisions' THEN '0064C0000031IBlQAM' ELSE '0064C0000031IBqQAM' ELSE '0064C0000031IBqQAM' END;
SF_POSTMESSAGE/A1024V = 'ACTION=NAVIGATE;URL='||SF_URL;
END

ENGINE INT CACHE SET ON
SET PAGE-NUM=NOLEAD
-DEFAULTH &WF_HTMLENCODE=OFF;
SET HTMLENCODE=&WF_HTMLENCODE

SET ARGGRAPHENGINE=JSCHART
SET EMBEDHEADING=ON
SET GRAPHDEFAULT=OFF
-DEFAULTH &WF_STYLE_UNITS='PIXELS';
-DEFAULTH &WF_STYLE_HEIGHT='405.0';
-DEFAULTH &WF_STYLE_WIDTH='770.0';
-DEFAULTH &WF_TITLE='WebFOCUS Report';
GRAPH FILE retail_samples/wf_retail_lite
SUM WF_RETAIL_LITE.WF_RETAIL_SALES.REVENUE_US
FST.SF_POSTMESSAGE AS 'SF_URL' NOPRINT
BY WF_RETAIL_LITE.WF_RETAIL_PRODUCT.PRODUCT_CATEGORY
ON GRAPH PCHOLD FORMAT JSCHART
ON GRAPH SET AUTOFIT ON
ON GRAPH SET GRWIDTH 1
ON GRAPH SET UNITS &WF_STYLE_UNITS
ON GRAPH SET HAXIS &WF_STYLE_WIDTH
ON GRAPH SET VAXIS &WF_STYLE_HEIGHT
ON GRAPH SET LOOKGRAPH PIE
ON GRAPH SET AUTOFIT ON
ON GRAPH SET STYLE *
*GRAPH_SCRIPT
setPieDepth(0);
setPieTilt(0);
setDepthRadius(0);
setPlace(true);
setPieFeelerTextDisplay(1);
setCurveFitEquationDisplay(false);
The following section in this WebFOCUS procedure defines a variable named $SF\_URL$, which specifies the URL format used by SFDC to display an Opportunity.

```
```

The following section defines a variable called $SF\_POSTMESSAGE$, which is the message that will be passed to the Visualforce page event listener.

```
$SF\_POSTMESSAGE/A1024V = 'ACTION=NAVIGATE;URL='||SF\_URL;
```

The following section defines the drill-down, which is a JavaScript drill-down.

```
JAVASCRIPT=parent.parent.postMessage( \ 
    FST.SF\_POSTMESSAGE \ 
    'https://ibi--wfdboard--c.cs61.visual.force.com' \ 
),
```

You must use $parent.parent$ to access the parent container of the WebFOCUS content, and then the parent container of that container, which will be the topmost content.

This drill-down then calls $postMessage$ and passes the $SF\_POSTMESSAGE$ variable content and the URL that is the originator of the Visualforce page execution.
WebFOCUS Embedded Business Intelligence Demonstration Application

In WebFOCUS Release 8.2 Version 03, a demonstration ("demo") application is available for
deployment that allows you to embed WebFOCUS Business Intelligence (BI) content, analytics, and
functionality (features) as an external application. This embedded BI demo application that is packaged
with WebFOCUS enables you to explore the iframe and web services embedding options.

During the configuration process, you will also learn how the Trusted Ticket Authentication feature in
WebFOCUS Release 8.2 Version 03 can be used to implement single sign-on (SSO), which is an
important developer consideration for embedded BI applications.
This section serves as a getting started guide, which describes how to install, configure, and use the embedded Business Intelligence (BI) demonstration (“demo”) application that is packaged with WebFOCUS Release 8.2 Version 03.

In this chapter:

- Installing the Embedded Business Intelligence Demonstration Application
- Configuring the Embedded Business Intelligence Demonstration Application
- Using the Embedded Business Intelligence Demonstration Application (Fintoso Financial)
- Additional Considerations for Embedded Business Intelligence
- Customizing the Embedded Business Intelligence Demonstration Application (Fintoso Financial)
- Troubleshooting
- Appendix: Detailed Request/Response Flow for the Embedded Business Intelligence Demonstration Application

## Installing the Embedded Business Intelligence Demonstration Application

This section describes how to install the sample embedded content, sample user (ffadv), and the embedded business intelligence (BI) demo application (Fintoso Financial).

In WebFOCUS Release 8.2 Version 03, the Fintoso Financial embedded BI demo is automatically installed for you into the following directory:

```
<drive>:\ibi\WebFOCUS82\samples\embedded_demo
```

Here you will find the following components that are referenced and used by the embedded BI demo:

- **embeddemo.war.** A redesigned application .war file that you must deploy to your application server (for example, Apache Tomcat).

- **fintoso_domain_CM_v01.zip.** A new Change Management package that deploys the Fintoso Financial domain into your WebFOCUS environment along with sample financial data.
- **fintoso_users.csv.** A CSV file containing the predefined sample user ID (ffadv), which is used to log in to the Fintoso Financial embedded BI demo application.

These components must be installed in the following order:

1. Sample embedded content (fintoso_domain_CM_v01.zip).
2. Sample predefined user (ffadv) (fintoso_users.csv).
3. Application .war file (embeddemo.war).

**Installing the Sample Embedded Content**

For improved performance and quicker deployment, a new financial data set has been packaged with the Fintoso Financial embedded BI demo. You are no longer required to build WF RETAIL as a data source for the embedded demo application. Instead, a set of FTM files representing sample financial data is included with the new Change Management package (fintoso_domain_CM_v01.zip). As a result, simply deploying the new Change Management package will also deploy all of the required data that is used by the new embedded BI demo at the same time.

**Procedure: How to Install the Sample Embedded Content**

1. Sign in to WebFOCUS Release 8.2 Version 03 as an administrator.
2. From the WebFOCUS Home Page, click Administrator in the upper-right and then click Legacy Home Page from the menu, as shown in the following image.
3. In the Resources tree on the left pane, expand Change Management, right-click the Import node, and then select Upload a Zip File from the context menu, as shown in the following image.

The Upload a Zip File dialog opens, as shown in the following image.

4. Browse to the following directory and select the `fintoso_domain_CM_v01.zip` file.

   `<drive>:\WebFOCUS82\samples\embedded_demo\fintoso_domain_CM_v01.zip`

5. Click Upload.
The following message is displayed.

![Message]

6. Click OK.

7. Under the Import node, right-click the `fintosho_domain_CM_v01.zip` file and select Import from the context menu, as shown in the following image.

![Import Context Menu]
The Import Package: fintoso_domain_CM_v01.zip file dialog opens, as shown in the following image

8. Perform the following steps:
   a. In the Content Resources area, select *Add New Resources Only (do not replace)*.
   b. In the Security Resources area, select *Import Rules On Resources*.

9. Click OK.

The *Scenario import in progress* message is displayed, as shown in the following image.
Once this process has completed, an *Import successful* message is displayed, as shown in the following image.

![Import successful message](image)

10. Click **OK**.

11. Return to the WebFOCUS Home Page where you will now find Fintoso Financial listed as a new domain, as shown in the following image.

![WebFOCUS Home Page](image)

**Importing the Sample User (ffadv)**

The embedded BI demo application (*Fintoso Financial*) includes a CSV file that contains a predefined sample user ID (ffadv). You must use the ffadv user ID to log in to the Fintoso Financial embedded BI demo.
Procedure: How to Import the Sample User (ffadv) Using the Security Center

1. From the WebFOCUS Home Page, click Administrator in the upper-right, select Administration, and then click Security Center from the menu, as shown in the following image.
The Security Center opens, as shown in the following image.
2. In the Groups section, expand the main Fintoso group node, as shown in the following image.

Ensure that the following groups are available:

- AdvancedUsers
- BasicUsers
- Developers
- GroupAdmins

**Note:** These new groups are automatically created when you import the Change Management package (fintoso_domain_CM_v01.zip) into your WebFOCUS environment.
3. In the Users section, click Import Users, as shown in the following image.

![Image of Security Center - Google Chrome showing Import Users dialog]

The Import Users dialog opens, as shown in the following image.

![Image of Import Users dialog]

4. Browse to the following directory and select the `fintoso_users.csv` file.
   
   `<drive>:\WebFOCUS82\samples\embedded_demo\fintoso_users.csv`

5. Click Import.

   The following message is displayed.
   
   ![Import Users success message]

   Successfully imported 'fintoso_users.csv'.
   1 Users added.

   OK
6. Click OK.

The Security Center is refreshed and now lists the new user ID (ffadv) that you imported under the Users section and Groups section accordingly, as shown in the following image.

![Security Center Image]

7. Click Close in the lower-right to exit from the Security Center.

Installing the Embedded BI Demo Application (Fintoso Financial)

The embedded BI demo application (*Fintoso Financial*) was developed using Bootstrap, JSP, Java, and JavaScript. The entire application is packaged as a web archive file (*embeddemo.war*), which you can easily deploy to any servlet container or Java application server. You can also modify the application to explore various embedding scenarios. For more information, see *Customizing the Embedded Business Intelligence Demonstration Application (Fintoso Financial)* on page 554.

**Procedure:** How to Install the Embedded BI Demo Application (Fintoso Financial)

1. Navigate to the following folder in your WebFOCUS installation where the *embeddemo.war* file is located:

   `<drive>:\ibi\WebFOCUS82\samples\embedded_demo\embeddemo.war`

2. Deploy the *embeddemo.war* file on your application server (for example, Apache Tomcat) by following the corresponding content for your application server.
**Note:** It is recommended that you successfully deploy the embedded BI demo application in a same origin scenario even if your goal is to explore the cross-origin scenario. This means that you should first deploy the `embeddemo.war` file on the application server where WebFOCUS Release 8.2 Version 03 is being hosted.

The following steps describe how to deploy the `embeddemo.war` file on the instance of the Apache Tomcat application server that is available with the WebFOCUS installation:

a. Copy the `embeddemo.war` file to the following folder in your WebFOCUS installation:

```
<drive>:\ibi\tomcat\webapps
```

You are not required to stop or restart Apache Tomcat.

b. Within a few seconds you will see a new subfolder called `embeddemo` that is automatically created. For example:

```
<drive>:\ibi\tomcat\webapps\embeddemo
```

This subfolder represents the deployed copy of the `embeddemo.war` file and is structured as shown in the following image.

![Folder Structure](image)

3. If you deployed WebFOCUS on the Apache Tomcat application server behind Microsoft Internet Information Services (IIS), then you will need to modify the Jakarta Connector configuration to pass requests to the embedded BI demo application through IIS to Apache Tomcat.

   a. Navigate to the following folder on your Windows operating system:
b. Open the `uriworkermap.properties` file using a text editor.

c. Add the following two lines anywhere in this file:

```
/embeddemo/*=ajp13w
/embeddemo=ajp13w
```

d. Save the `uriworkermap.properties` file.

e. Restart the World Wide Web Publishing Service on Windows, as shown in the following image.

![Services](image)

**Required HTML 5 Chart Extensions**

The Fintoso Financial embedded BI demo requires the following HTML 5 chart extensions to be installed on your WebFOCUS environment for several charts to display correctly:

- Sparkline KPI (com.ibi.kpi.sparkline)
- World Choropleth & Bubble Map (com.ibi.map.world)

These extensions can be downloaded and installed from the Information Builders public extension GitHub page. For more information on installing HTML 5 chart extensions, see the WebFOCUS Security and Administration documentation.

**Configuring the Embedded Business Intelligence Demonstration Application**

This section describes the configuration steps for the embedded business intelligence (BI) demo application (Fintoso Financial).
**Tip**: If you plan to configure the cross-origin scenario (dual web hosts), then it is recommended that you first successfully configure the same origin scenario (single web host).

**Configuring a Back Channel Ticket Request**

The configuration for the back channel ticket request made by the embedded BI demo application is specified in the `config.properties` file, which is located in the following folder:

`embeddemo\WEB-INF\classes\config.properties`

For example, if you deployed the embedded BI demo application (`embeddemo.war`) file on the Apache Tomcat application server that is available with the WebFOCUS installation, then the `config.properties` file is located in the folder path, as shown in the following image.

![File Configuration](image)

The default file configuration is shown below:

```
WF_TICKET_PROVIDER_URL=http://localhost:8080/ibi_apps
WF_TRUSTED_APPLICATION_NAME=IBIEmbeddingDemo
WF_HOST=http://localhost:8080/ibi_apps
USERIDS=ffadv
```

Make the following changes to the `WF_TICKET_PROVIDER_URL` setting, as required for your installation:

1. If your back channel request will need to use HTTPS, rather than HTTP, to access WebFOCUS, then change the protocol value accordingly.

2. If you are deploying the embedded BI demo application (Fintoso Financial) on a different machine from WebFOCUS, then change `localhost` to the web host that the embedded BI demo application will use to access WebFOCUS on the back channel.

   **Note**: If you are deploying a same origin scenario, then you can leave the host set to `localhost`.

3. If your back channel request will need to use a port other than 8080 to access WebFOCUS, then change the port value accordingly.
For example, if you are deploying a same origin scenario and you installed Apache Tomcat on port 80, then remove :8080 from the value.

4. If you deployed WebFOCUS on a non-standard context path (for example, /ibi_apps82), then change the context path value accordingly.

5. Save any changes you made to the config.properties file.

For now, leave the value of WF_TRUSTED_APPLICATION_NAME set to IBIEmbeddingDemo. A trusted application name is passed on the ticket request so WebFOCUS knows which trusted host configuration to reference when verifying the IP address of the request.

**Configuring WebFOCUS**

This section describes how to enable Trusted Ticket Authentication in WebFOCUS. Depending on your deployment scenario, you may also need to reconfigure Trusted Ticket Authentication. If you are configuring a cross-origin (dual web host) scenario, then you will need to configure additional cross-origin settings. For more information on configuring and using cross-origin settings in WebFOCUS, see the WebFOCUS Security and Administration content.

**Procedure: How to Configure WebFOCUS**

1. Sign in to WebFOCUS as an Administrator.
2. Click Administration in the top menu and then click Administration Console from the drop-down list, as shown in the following image.

![WebFOCUS Administration Console](image)

The WebFOCUS Administration Console opens.
3. Click the Security tab and then the Security Zones folder node in the left pane, as shown in the following image.

4. Verify whether the Alternate security zone (highlighted in the above image) is Disabled or Enabled.

There is no reason to enable the Alternate Zone to support WebFOCUS embedded BI, but this zone is sometimes enabled to provide an alternative way for administrators to access WebFOCUS.

If the status of your Alternate security zone is Disabled, then skip to Step 5.

If the status of your Alternate security zone is Enabled, then you need to determine if the Alternate security zone will be used to process trusted ticket and trusted sign-on requests. If this is the case, then you need to enable Trusted Ticket Authentication on the Alternate security zone and ensure that it is configured properly to process these requests. The remaining configuration steps in this procedure are provided for the Default security zone. These steps can be applied to the Alternate Zone as well, if it is enabled, and processing requests related to the embedded BI demo application.
5. Expand Security Zones, Default, and then click Authentication, as shown in the following image.
6. In the Authentication pane, right-click Trusted Ticket Authentication and select Enable from the context menu, as shown in the following image.

![Authentication Table]

The status of Trusted Ticket Authentication is now Enabled, as shown in the following image.

![Authentication Status]

7. Right-click Trusted Ticket Authentication again and select Edit from the context menu, as shown in the following image.

![Authentication Edit]

530 Information Builders
The Edit Trusted Ticket Authentication Settings dialog opens, as shown in the following image.

Notice that the trusted application name is *IBIEmbeddingDemo* and three versions of the localhost IP address (version 4 (IPv4), version 6 (IPv6), and IPv6 loopback) are defined in the Accepted IP Addresses list. These settings are used by WebFOCUS to determine if a trusted ticket request is originating from an authorized server.

8. If your *config.properties* file (as described in *Configuring a Back Channel Ticket Request* on page 526) has *localhost* specified as the value for the *WF_TICKET_PROVIDER_URL* setting and if *IBIEmbeddingDemo* is specified as the value for the *WF_TRUSTED_APPLICATION_NAME* setting, then you do not need to make any changes in the Edit Trusted Ticket Authentication Settings dialog.

Click *Cancel* and skip to Step 10.
9. If you do not have `localhost` specified as the value for the `WF_TICKET_PROVIDER_URL` setting, then you must determine what IP address the embedded BI demo application will appear to be running on and add it to the Accepted IP Addresses list in the Edit Trusted Ticket Authentication Settings dialog.

**Tip:** If you are not sure what the IP address is, and the wrong value is configured, a message will be displayed after signing on to the embedded BI demo application (Fintoso Financial) indicating that the trusted ticket was not granted. To investigate, you can check the WebFOCUS `websecurity` log. If the log message indicates that the IP address of the requesting server was not in the Accepted IP Addresses list, then copy the IP address from the log message to the Accepted IP Addresses list in the Edit Trusted Ticket Authentication Settings dialog and try again.

10. Click **OK** to acknowledge the requirement to restart your application server (for example, Apache Tomcat).

11. Before closing the WebFOCUS Administration Console, double-click the Trusted Ticket Authentication provider you just enabled.
The Edit Trusted Ticket Authentication Settings dialog opens, as shown in the following image.

Notice that a trusted application called *IBIEmbeddingDemo* is pre-configured for you and that this matches the value in the *config.properties* file of the embedded BI demo application.

While this trusted application information is preconfigured for you in WebFOCUS, it is not used unless you enable it as described in this procedure.

12. Click *Cancel* and then close the WebFOCUS Administration Console.
13. Restart your application server (for example, Apache Tomcat).

WebFOCUS is now ready to accept trusted ticket connections.
Using the Trusted Ticket Test Pages

This section describes how to use the trusted ticket test pages by using valid arguments and then using an invalid argument to test the functionality of the page.

Procedure: How to Configure the Trusted Ticket Test Page

1. Run the Reporting Server on the jagsig VMWare image.
2. From the WebFOCUS Administration Console, click the Security tab and select the Trusted Ticket Authentication check box to ensure it is enabled for the Default Zone.
   If you are using the Alternate Zone, make sure the option is also enabled there.
3. In a new browser tab, enter the following URL:
   http://localhost:8080/embeddemo/tester/create_trusted_ticket.jsp
4. Enter the following values as shown in the table below:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UserID:</td>
<td>&lt;use CTRL-V to paste it from the clipboard&gt;</td>
</tr>
<tr>
<td>IBIB_appname:</td>
<td>IBIEmbeddingDemo</td>
</tr>
<tr>
<td>IBIB_destination:</td>
<td>&lt;leave blank&gt;</td>
</tr>
</tbody>
</table>

Create a Trusted Ticket

IBIB_userid

User ID (Required)

IBIB_appname

Application Name (Optional only if a default is specified for the zone)

IBIB_useripaddr

Client IP Address (Optional unless Client IP Checking is enabled)

Submit
A trusted ticket is returned and displayed in the browser.

5. Copy the ticket to the clipboard by pressing CTRL-C.

6. In your browser, enter the following URL:

   http://localhost:8080/embeddemo/tester/test_trusted_ticket.jsp

7. Enter the following values as shown in the table below:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBIB_ticket:</td>
<td>&lt;use CTRL-V to paste it from the clipboard&gt;</td>
</tr>
<tr>
<td>IBIB_appname:</td>
<td>IBIEembeddingDemo</td>
</tr>
<tr>
<td>IBIB_destination:</td>
<td>&lt;leave blank&gt;</td>
</tr>
</tbody>
</table>

This returns a browser page that shows an XML response with an ibfssession, which means the sign on was successful.

**Procedure:** How to Test the Trusted Ticket Page Using an Invalid Argument

To test the trusted ticket page using an invalid argument:

1. While running the create_trusted_ticket.jsp, enter an invalid name into the IBIB_appname field, as shown in the following image.

![Test a Trusted Ticket Signon Request](image)
The result, A 
"-1" will be returned.

2. In the next test, in securitysettings.xml, set userIPAddrCheck to true for the
   TrustedTicketPreferences section, and then recycle Apache Tomcat.

3. Enter a non-localhost IP address for IBIB_useripaddr.

   Note:

   - The ticket is returned as expected.
   - You can use CTRL-C to copy the ticket to the clipboard.

4. Run test_trusted_ticket.jsp with that ticket.

   You will receive a 403 return because it failed. The websecurity.log file will show the
   following message:

   :unknown: - [Zone: main]Trusted sign on request rejected, Key
   verification failure

Using the Embedded Business Intelligence Demonstration Application (Fintoso Financial)

This section describes how to access and use the embedded business intelligence (BI) demo
application (Fintoso Financial), and reviews the internal (back-end) functionality of the
application.

Accessing and Running the Embedded BI Demo Application

1. Open a web browser and enter the URL for the embedded BI demo application (Fintoso
   Financial).

   You can access the demo application in many ways, depending on where your web browser
   is located. The following examples (with port numbers, where required) are supported:

   - http://localhost/embeddemo
   - http://host/embeddemo
   - http://host.domain.com/embeddemo
You will be redirected to the Fintoso Financial sign in page, as shown in the following image, because you do not yet have a session established with the Fintoso Financial application.

2. Enter a valid user name (for example, ffadv).

Note: This is not a WebFOCUS sign in and anything you enter in the Password field is ignored by the demo application. The user name that is entered is simply verified as being in the array defined in line 5 of the login.jsp file, which is located in the following folder:

embeddemo\login.jsp
For example, if you deployed the embedded BI demo application (embeddemo.war) file on the Apache Tomcat application server that is available with the WebFOCUS installation, then the config.properties file is located in the folder path, as shown in the following image.

![config.properties file](image)

You may add to or change the list of users in the config.properties file. For example:

```
WF_TICKET_PROVIDER_URL=http://localhost:8080/ibi_apps
WF_TRUSTED_APPLICATION_NAME=IBIEmbeddingDemo
WF_HOST=http://localhost:8080/ibi_apps
USERIDS=ffadv
```

Changes are applied immediately and an application server restart is not required.

The user name you enter must be a valid WebFOCUS user account with access to the BI Portal and web service content configured in the embedded BI demo application.

3. Click Login.

The application requests a trusted ticket for the user name you entered and then makes a WebFOCUS trusted sign-on request with this ticket in order to obtain a WebFOCUS session cookie for your web browser. For more information, see Appendix: Detailed Request/Response Flow for the Embedded Business Intelligence Demonstration Application on page 560.
The home page of the Fintoso Financial embedded BI demo application is displayed, as shown in the following image.

The Fintoso Financial embedded BI demo application features responsive web design. Resizing the browser or viewing on mobile devices will automatically adjust the dimensions and layout of the application accordingly. This behavior is important to understand because it is the result of coordination between WebFOCUS and the embedded BI demo application. For more information see, *Responsive Web Design* on page 552.
Three account widgets are displayed across the top, as shown in the following image.

The middle and right-hand frames contain widgets that run WebFOCUS reports (Fund Analyzer and Go Paperless!), as shown in the following image.

They are included by making a RESTful web service call to WebFOCUS, which is within the context of the user ID, and using a trusted ticket approach.
On the lower-left, the Analytics Workstation widget includes a Launch hyperlink, as shown in the following image.

Clicking Launch opens WebFOCUS InfoAssist, as shown in the following image.
This is a good example of URL embedding.

Clicking *Learn more* from the Analytics Workstation widget opens a pop-up window, which includes a diagram and provides a brief overview on URL embedding, as shown in the following image.

In this example, InfoAssist is called directly via URL. The browser makes a direct connection to WebFOCUS.

- Both the front end application and WebFOCUS are communicating directly with the browser.
- Typically, a single sign-on security scheme is implemented between the front end application and WebFOCUS to avoid multiple logins.
- In this example, a single sign-on scheme is established using the WebFOCUS Trusted Ticket authentication. See login.jsp and js/webFocus-sso.js for more detail.
- The url to call InfoAssist:
  
  http://[server]:[port]/[context]/ia7sS08=false&item=1/[BFS path]&tool=([InfoAssist mode]&master=([Data file name])
  
  Go to Info Center for more detail.
  
  https://webfocusinfocenter.informationbuilders.com/wfappClient/TL2s/TL_ebi/tech-library.html
The Fund Analyzer widget also includes a *Launch* hyperlink, as shown in the following image.

Clicking this link opens a WebFOCUS Insight report, as shown in the following image.
A Java proxy is being used here to call this report. This is a good example, as many WebFOCUS customers prefer all URL calls from their applications to initially go through a Java proxy before reaching WebFOCUS.

Clicking Learn more from the Fund Analyzer widget also opens a pop-up window, which includes a diagram and provides a brief overview on using a Java proxy to redirect URL calls being made to WebFOCUS, as shown in the following image.

In this example, the WebFOCUS resource is routed through a redirector/proxy. The browser never makes direct connection to WebFOCUS.

- The Fund Analyzer is an interactive application running in WebFOCUS (Fund_Analyzer.fex).
- The URL request to run the Fund Analyzer is routed through runner.jsp.
- runner.jsp establishes a secure connection to WebFOCUS using a service id/pass (configured as part of the front end application).
- runner.jsp then runs a second request to run the Fund Analyzer application. Included in the call is a proxy URL pointing to redirect.jsp.
- Using the proxy URL specified in the request, any call back to WebFOCUS (CSS, JavaScript, subsequent interactive requests) will be routed through redirect.jsp.
- redirect.jsp forwards all requests from the browsers back to WebFOCUS. The session cookie obtained in runner.jsp will be included in the forwarded request, along with all client headers.
On the lower-right, the Go Paperless widget includes a View Statement hyperlink, as shown in the following image.
Clicking this link opens a WebFOCUS In-Document Analytics (Active) report, as shown in the following image.
4. Click the **MY INVESTMENTS** tab, which launches a redesigned Collaborative Portal, as shown in the following image.

![Image of Fintoso Financial Collaboration Portal](image.png)
5. Click the `RESEARCH` tab, which provides a good example showing how WebFOCUS Designer pages can be used in an application, as shown in the following image.
Specifically, two Designer pages are linked together through the Global Name feature.

6. Click **Sign Out** in the upper-right corner of the application.

   This signs you out of the Fintoso Financial embedded BI demo application.

**Reviewing the Internal (Back-End) Functionality of the Embedded BI Demo Application**

After authenticating the user on line 5 in the `login.jsp` file (`embeddemo\login.jsp`) the embedded BI demo application makes a request to obtain a trusted ticket for the user. This is done through a Java Bean that is defined on lines 11-14 in the `index.jsp` file (`embeddemo\index.jsp`) and executed on line 75.

**Note:** The Java Bean call is passed the authenticated user ID and the HTTP request object.
The trusted ticket request is made by the `generateTicket()` method. This method is located in the `TrustedConnectWF` class, which is located in the `TrustedConnectWF.jar` file (`embeddemo\WEB-INF\lib\TrustedConnectWF.jar`). For example:

```
trustedTicket = encodeURIComponent(encodeURIComponent(<%=TrustedConnectWF.generateTicket()%>));
```

The `Fintoso Financial` sample web application is a realistic looking but simple demonstration of an actual embedded BI application. You can review the code in the `embeddemo` folder as well as the Java source for the `TrustedConnectWF` method inside the `IBITrustedTicket.jar` file (`embeddemo\WEB-INF\lib\IBITrustedTicket.jar`). To access the Java source code for this method, use a utility such as WinZip to open this `.jar` file and then extract the file from the `com\ibi\example` folder structure.

When you run the embedded BI demo application, you are running the `index.jsp` file (`embeddemo\index.jsp`), which builds the HTML view:

```
trustedTicket = encodeURIComponent('<%=TrustedConnectWF.generateTicket()%>');//
```

This Java code uses the two properties in the `config.properties` file (`embeddemo\WEB-INF\classes\config.properties`) to determine where to make the ticket request and what trusted application name to provide on the call.

```
WF_TICKET_PROVIDER_URL=http://localhost/ibi_apps
WF_TRUSTED_APPLICATION_NAME=IBIEmbeddingDemo
```

In addition, the user ID and web browser IP address are passed in the request to WebFOCUS. For more information about these HTTP requests/responses, see Appendix: Detailed Request/Response Flow for the Embedded Business Intelligence Demonstration Application on page 560.
Once the ticket is obtained successfully, the embedded BI demo application makes a trusted sign-on request to WebFOCUS using information defined in lines 6-8 in the `bip-page ext.js` file:

```javascript
var webfocusHost = '';   
var trustedAppName = 'IBIEmbeddingDemo'; 
var webfocusContext = '/ibi_apps';
```

In a cross-origin (dual web host) configuration, you must edit the `webfocusHost` setting according to your environment.

**Additional Considerations for Embedded Business Intelligence**

To provide the best user experience in your embedded BI application you should also consider the following topics.

**Hiding BI Portal Features**

Generally you want to hide the BI Portal banner, since the embedding application usually has its own banner. If you only want to embed a single BI Portal page you can also choose to disable the BI Portal Navigation bar from the ribbon in Portal Designer. If you have a multi-page portal you should leave the navigation bar enabled and consider styling the portal page tabs with a custom CSS file, as explained below. When the navigation bar is shown you also have a choice to show or hide the New Page icon to users who have the Customize Portal privilege.

**Branding and Rebranding**

Generally speaking you want the embedded BI application and the content it is hosting to appear like a single, well styled, application. WebFOCUS has excellent rebranding capabilities to address this requirement. There are two aspects to styling that you need to consider:

- Styling the content (for example, reports, charts, and so on) rendered by the portal.
- Styling the portal *chrome* that appears around the content.

You can style the content to match your embedding requirements by developing a custom WebFOCUS stylesheet and selecting it from the Theme button in the InfoAssist ribbon.
You can also use the BI Portal Dynamic Styling option to specify a custom stylesheet override to all the portal content. The embedded BI demo application uses this approach, as shown in the following image.

You can also create a custom CSS theme to style things like the panel borders, title bar text, portal page tab appearance, and even images like the easy selector Add Content or New Page icons. Store your custom CSS theme in the repository and select if from the Portal Theme Files UI, which is accessible by clicking the Theme button on the ribbon in Portal Designer.

**Responsive Web Design**

If you plan to embed responsive BI Portal content in your application you need to enable the *Broadcast height for embedding* option, on the portal properties panel in Portal Designer, as shown in the following image.

This option causes the portal to broadcast JavaScript events that return the height (in pixels) that the hosting iframe should be reset to in order for the portal content to fit without extra space or an inner scrollbar.

If the portal is only used in iframe embedding scenarios you can leave the Target Origin set to *. If the portal will be used in multiple scenarios and you want to limit the broadcast messages to only a single application you can set Target Origin to a specific host. For example:

http://embeddinghost.domain.com

You then need to modify your embedding application to listen for the following two events:

- `portal_loaded`. This event is broadcast once the portal page has loaded.
- `height_changed`. This event is broadcast each time the portal page height changes.

The following is an example which you will find in the embedded BI demo application on line 818 in `embeddemo/js/bip-page-ext.js`:
/* Add Message Listener */
window.addEventListener('message', function(e) {

  var data;

  if (typeof e.data === 'string')
    data = JSON.parse(e.data);
  else
    data = e.data;

  var pageType = typeof data.portal_path !== 'undefined' ? 'portal' : 'page';
  console.log(data, pageType, data.page_path);
  var portalNode = pageType === 'portal' ? getPortalNode(data.portal_path, 'path') : getPortalNode(data.page_path, 'path');

  if (data) {
    var message_name = data['message_name'];

    if (message_name == "height_changed"){
      if (pageType === "portal" && portalNode.loaded)
        $('#' + portalNode.id).parent().height( parseInt(data["portal_height"]) );
      else
        $('#' + portalNode.id).parent().height( parseInt(data["page_height"]) );
    }
    else if (message_name == "portal_loaded"){
      portalNode.loaded = true;
      $('#' + portalNode.id).parent().height( parseInt(data["portal_height"]) );
    }
  }
  window.scrollTo(0,0);
});

Alternate Security Zone

In general, there is no requirement to enable the Alternate security zone to support embedded BI deployments. If it is not required, then the Alternate zone should remain disabled because it does complicate troubleshooting of trusted ticket authentication configurations. The guidelines in this section are provided to assist users that will need to enable the Alternate zone while supporting trusted ticket authentication.

When enabled, WebFOCUS will first determine if a request should be processed by the Alternate zone configuration. By default, the Alternate zone is configured to capture requests made to 127.0.0.1, 0:0:0:0:0:0:1, and ::1. As a result, if you are testing a same origin (single web host) configuration, then your trusted ticket request may be processed by the Alternate zone. In this case, you must enable Trusted Ticket Authentication on the Alternate zone in addition to on your Default zone.
You can enable and configure the Alternate zone to process trusted ticket requests in cross-origin (dual web host) configurations, but there is no requirement to do so. If you want to configure this, simply enable Trusted Ticket Authentication on the Alternate zone and add the IP address of the host where your embedded BI application resides.

**Customizing the Embedded Business Intelligence Demonstration Application (Fintoso Financial)**

This section describes how to customize the embedded demo application (*Fintoso Financial*).

**Registering User Names**

The embedded BI demo application makes trusted authentication requests to WebFOCUS. In a typical use case scenario, the application would authenticate users to some system that is external to WebFOCUS. However, to simplify the demonstration, this embedded application only checks to see if the user name entered on the Sign-on page is found in a list defined on line 5 in `embeddemo\login.jsp`:

```java
Set<String> users = new HashSet<String>(Arrays.asList( userids ));
```

You may edit the list to include any ID that exists in your WebFOCUS repository. Changes take effect immediately upon reloading the application and do not require an application server restart.

**Important:** Only include WebFOCUS user IDs in this file that have carefully defined access to content and features. This is because anyone with access to the embedded BI demo application will be able to obtain a WebFOCUS session for these accounts without knowledge of the password for the account.

**Using Different BI Portal Content**

The HOME, MY INVESTMENTS, and RESEARCH tabs in the embedded BI demo application load specially configured BI portals into an iframe below the tabs. You can reconfigure these tabs to load different BI portals.

Simply modify the path and corresponding URL values in the `\ibi\tomcat\webapps\embeddemo\js\webfocus-sso.js` file. For example:
// Array containing the list of pages
var pages = [
    { text: 'Research', type: 'url', path: 'IBFS:/WFC/Repository/Fintoso/Page_Designer_content/selections/page.man', url: '/rs/ibfs/WFC/Repository/Fintoso/Page_Designer_content/selections', loaded: false }
];

Troubleshooting

This section provides troubleshooting information for the embedded business intelligence (BI) demo application (Fintoso Financial) and workarounds where applicable.

If you require additional support or assistance with the embedded BI demo application, open a support ticket on the Information Builders Technical Support Center:

http://techsupport.informationbuilders.com

Pop-up Message: Failed to Obtain a Trusted Ticket From WebFOCUS

After signing on to the embedded BI demo application (Fintoso Financial), you may encounter a pop-up message indicating that the application was unable to obtain a trusted ticket from WebFOCUS. If this occurs, you must resolve the issue before continuing because the demo application will not make the trusted sign-on request to WebFOCUS. This section describes several suggestions and workarounds to resolve the issue based on the information in the message.

The demo application checks for the result of the trusted ticket request and determines if it appears to be a ticket. This is done with a simple check in the trustedWFSignOn() function on line 21 in embeddemo\js\bip-page-ext.js to see if the result is longer than 40 characters. This indicates that a ticket was returned rather than a -1 status code, a null value, or other non-ticket response. For example:

```javascript
function trustedWFSignOn(){
    // if we do not get a trusted ticket back from the TrustedConnectWF bean call in index.jsp, popup a message and do not attempt the trusted signon
    if (trustedTicket.length < 40) {
        alert('Failed to obtain trusted ticket from WebFOCUS. Please refer to the troubleshooting section of the Embedded Demo documentation.
        
        Ticket value is: ' + trustedTicket);
        return;
    }
}
**Ticket Value is: null**

A null value indicates that the trusted ticket request was not processed by WebFOCUS. For example:

![Null ticket value example](image)

Check to ensure that you enabled trusted ticket authentication on the Default zone (and on the Alternate zone, if enabled).

**Ticket Value is: -1**

A -1 value indicates that the trusted ticket request was processed, but WebFOCUS refused to create the ticket. For example:

![Negative one ticket value example](image)
This can result from various reasons and the websecurity.date.log file will have additional information to help determine the cause. The websecurity.date.log file is located in the following folder in your WebFOCUS installation:

<drive>:\ibi\WebFOCUS82\logs

The following message indicates that the trusted application name sent by the embedded BI demo application does not match the value found in the WebFOCUS trusted ticket authentication configuration:


Check the value of the WF_TRUSTED_APPLICATION_NAME setting in the config.properties file of the embedded BI demo application and ensure that it matches the value of the Trusted Ticket Authentication zone configuration in the WebFOCUS Administration Console (Security tab), as shown in the following image.

![Configuration Settings](image)

The following message indicates that the IP address of the host making the trusted ticket request does not match the IP address in the WebFOCUS Trusted Ticket Authentication zone configuration:

WARN [http-nio-80-exec-9:wfsecurity] :unknown: - [Zone: main] Trusted ticket request rejected, the host IP address '192.168.40.40' is not in the accepted host list.

This might be the case in a cross-origin (dual web host) configuration where you forgot to add the host IP of the embedded BI demo application to the WebFOCUS configuration.
Add the IP address shown in the log to the Trusted Ticket Authentication zone configuration in the WebFOCUS Administration Console (Security tab), as shown in the following image.

![Edit Trusted Ticket Authentication Settings](image)

After you make this change, restart the application server where WebFOCUS is deployed.

**BI Portal Tabs Display an Error or are Blank**

In cross-origin configurations, if you forget to disable the X-Frame-Options Response Header setting in the WebFOCUS Administration Console, the trusted ticket request and trusted sign-on calls may be successful, but the browser will refuse to embed the BI Portal in the iframe of the embedded BI demo application (*Fintoso Financial*).

Google Chrome browsers will simply leave the iframe blank. However, if you press F12, which opens the Developer Console, you will see that the error is caused by WebFOCUS sending a SAMEORIGIN requirement to the browser in the X-Frame-Options header.

Internet Explorer provides a clearer error message and no errors in the Developer Console (F12).
To resolve this issue, deselect the X-Frame-Options Response Header check box in the Application Settings, Filters area of the WebFOCUS Administration Console and click Save, as shown in the following image.

This action does not require an application server restart.

After making this change, reload/refresh the embedded BI demo application (Fintoso Financial) in your browser.
Appendix: Detailed Request/Response Flow for the Embedded Business Intelligence Demonstration Application

The following diagram illustrates the request/response flow for the embedded business intelligence (BI) demo application (Fintoso Financial), which also serves as a useful reference.
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