# IBM SPSS Collaboration and Deployment Services 5 Content Repository URI Service Developer's Guide

*Note*: Before using this information and the product it supports, read the general information under Notices on p. 117.

This edition applies to IBM SPSS Collaboration and Deployment Services 5 and to all subsequent releases and modifications until otherwise indicated in new editions.

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# Preface

This guide is intended for developers working with the web services available in IBM® SPSS® Collaboration and Deployment Services. Users should have experience writing web service client applications and are assumed to have knowledge of IBM Corp. applications, Java and .NET development, data modeling concepts, and related technologies.

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Chapter

1

# Introduction to web services

## What are web services?

At a high level, a **web service** is a set of functionality distributed across a network (LAN or the Internet) using a common communication protocol. The web service serves as an intermediary between an application and its clients, providing both a standardized information structure and a standardized communication protocol for interaction between the two. Where other methods of distributed application architecture rely on a single programming language being used on both the application and its clients, a web service allows the use of loosely coupled services between non-homogenous platforms and languages. This provides a non-architecture-specific approach allowing, for example, Java services to communicate with C# clients, or vice-versa.

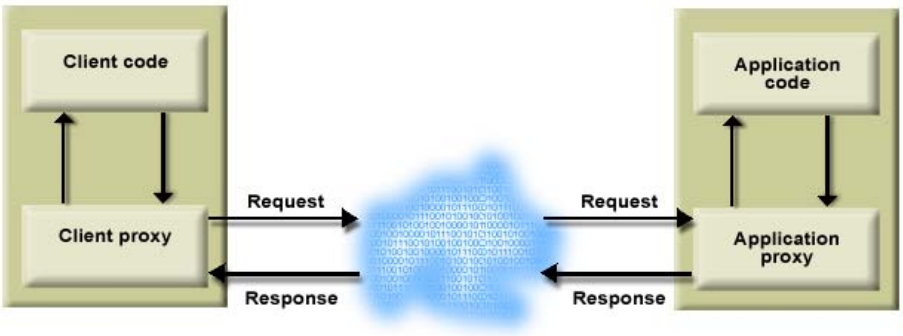
Advantages to implementing application functionality as web services include the following:

- Software written in different languages (Java or C#) running on different platforms (UNIX or Windows) can exchange services and data
- Application functionality can be accessed by a variety of clients. For example, both a thin-client interface and a rich-client interface can take advantage of the web service operations.
- Updates to the service are immediately available to all service clients

## Web service system architecture

Web services are deployed and made publicly available using an application server, such as JBoss Application Server, WebSphere®, or Oracle WebLogic Server. The published web services are hosted by this application server to handle application requests, access permissions, and process load. A high-level architecture of how web services are implemented is displayed in the following diagram.

Figure 1-1
*Web service architecture*



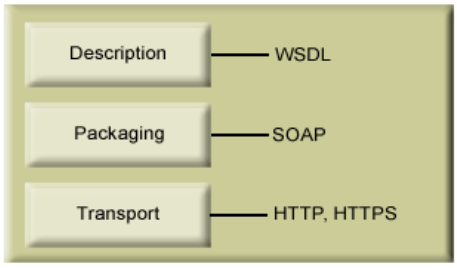
The client code supplies input to an operation offered by a proxy class. The proxy class generates a request containing a standardized representation of the input and sends it across the network to the application. A proxy class on the server receives the request and unmarshals the contents into objects for processing by the application. Upon completing the operation, the application supplies a proxy with the output. The proxy creates a standardized representation of that output and sends the response back to the client. The client proxy unmarshals the response into native objects for subsequent processing by the client code.

Standardizing the format of the information passing between the client and the application allows a client written in one programming language to communicate with an application written in another. The proxy classes, which are automatically generated from a web service description by a variety of toolkits, handle the translation between native programming objects and the standardized representation. For more information, see the topic Proxies on p. 6.

## Web service protocol stack

A web service implementation depends on technologies often organized in a layered stack. The implementation itself defines a standard protocol for each technology layer, with each layer depending on the layers appearing below it in the stack.

Figure 1-2
*Web service protocol stack*




Beginning at the bottom of the stack, the Transport layer defines the technology standards for communication, allowing information to move across the network. HTTP or HTTPS are often used as the standard for the transport layer.

The Packaging layer rests on top of Transport and defines the standard for structuring information for transport across the network. The SOAP format is commonly used, which offers an XML structure for packaging the data. For more information, see the topic Simple Object Access Protocol on p. 3.

The topmost layer is Description and identifies the standards used by the layers below it in the stack, as well as providing the definition of the interface available for client use. The most common means of conveying this information is through the use of a WSDL file. For more information, see the topic Web Service Description Language on p. 3.

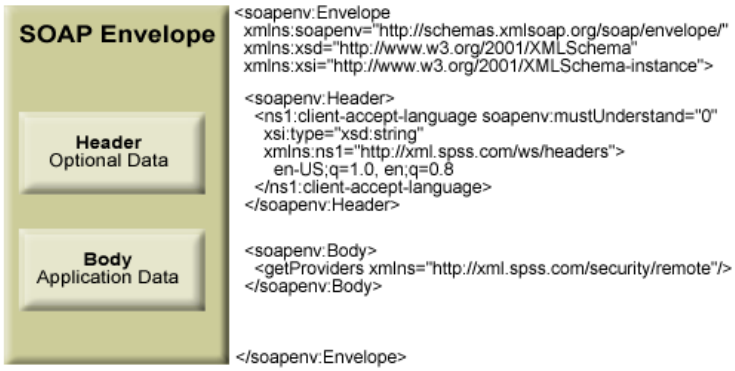
## Simple Object Access Protocol

The Simple Object Access Protocol (SOAP) is a way to pass information between applications in an XML format. SOAP messages are transmitted from the sending application to the receiving application, typically over an HTTP session. The actual SOAP message is made up of the Envelope element, which contains a Body element and an optional Header element.

- **Envelope.** This mandatory element is the root of the SOAP message, identifying the transmitted XML as being a SOAP packet. An envelope contains a body section and an optional header section.
- **Header.** This optional element provides an extension mechanism indicating processing information for the message. For example, if the operation using the message requires security credentials, those credentials should be part of the envelope header.
- **Body.** This element contains the message payload, the raw data being transmitted between the sending and receiving applications. The body itself may consist of multiple child elements, with an XML schema typically defining the structure of this data.

A SOAP packet and the corresponding XML is structured in the following way:

Figure 1-3
*An example SOAP packet*




## Web Service Description Language

A Web Service Description Language (WSDL) file provides an XML-based map of what functionality the published web service allows, separating the implementation in the service from the interface. The WSDL defines the following:

- The access location of the web service
- Operations the web service exposes
- Parameters the exposed operations accept
- Any request or response messages associated with the operations

The WSDL provides the information necessary to generate a client-side proxy in the desired programming language.

In accordance with the WSDL specification (*http://www.w3.org/TR/wsdl*) adopted by the World Wide Web Consortium, information in the WSDL is organized into the following sections:

- **Types.** Content definitions for web service operation input and output. For more information, see the topic Types on p. 4.
- **Messages.** Input and output definitions for the web service operations. For more information, see the topic Messages on p. 5.
- **PortTypes.** Groups of operations offered by the web service. For more information, see the topic Port types on p. 5.
- **Bindings.** Protocols and formats for the web service operations. For more information, see the topic Bindings on p. 5.
- **Services.** Endpoints at which the web service functionality can be accessed. For more information, see the topic Services on p. 6.

### *Types*

The types element of a WSDL file contains the data type definitions employed by messages processed by the web service. These definitions use XML to organize the information relevant to the type element being defined. Consider the following type definitions:

```
<wsdl:types>
 <schema targetNamespace="http://xml.spss.com/security/remote"
  xmlns="http://www.w3.org/2001/XMLSchema">
  <element name="getProviders">
   <complexType />
  </element>
  <element name="getProvidersResponse">
   <complexType>
    <sequence>
     <element name="providerInfo[unbounded]" type="tns1:providerInfo" />
    </sequence>
   </complexType>
  </element>
 </schema>
</wsdl:types>
```

This section defines two elements, *getProviders* and *getProvidersResponse*. The former is an empty element. The latter contains a sequence of *providerInfo* child elements. These children are all of the *providerInfo* type, which is defined elsewhere.

In practice, the WSDL file typically references type element definitions found in an external XML schema. For instance, the following definition uses *security-remote.xsd* to define type elements.

```
<wsdl:types>
 <xs:schema>
  <xs:import namespace="http://xml.spss.com/security/remote"
   schemaLocation="security-remote.xsd"/>
 </xs:schema>
</wsdl:types>
```

### Messages

The message elements of a WSDL file defines the input or output parameters for operations available in the web service. Each message can consist of one or more parts, with the parts similar to the parameters of a function call in a traditional programming language. Consider the following two message definitions:

```
<wsdl:message name="getProvidersResponse">
 <wsdl:part element="tns2:getProvidersResponse" name="parameters" />
</wsdl:message>
<wsdl:message name="getProvidersRequest">
 <wsdl:part element="tns2:getProviders" name="parameters" />
</wsdl:message>
```

The *getProvidersResponse* message contains a single part, corresponding to the *getProvidersResponse* element defined in the types section of the WSDL file. Similarly, the *getProvidersRequest* message also contains a single part, as defined by the *getProviders* element in the types section. For more information, see the topic Types on p. 4.

### Port types

The portType element of a WSDL file defines the actual interface to the web service. A port type is simply a group of related operations and is comparable to a function library, module, or class in a traditional programming language. The definition specifies the parameters for the operations, as well as any values returned. The parameters and return values correspond to messages defined elsewhere in the WSDL file. Consider the following port type definition:

```
<wsdl:portType name="ProviderInformation">
 <wsdl:operation name="getProviders">
  <wsdl:input message="impl:getProvidersRequest" name="getProvidersRequest" />
  <wsdl:output message="impl:getProvidersResponse" name="getProvidersResponse" />
 </wsdl:operation>
</wsdl:portType>
```

The *ProviderInformation* port type consists of a single operation, *getProviders*. Input to this operation corresponds to the *getProvidersRequest* message. The operation returns information in the structure defined by the *getProvidersResponse* message. For more information, see the topic Messages on p. 5.

### Bindings

The binding element of a WSDL file binds the interface defined by the port type to transport and messaging protocols. Consider the following binding definition:

```
<wsdl:binding name="ProviderInformationSoapBinding" type="impl:ProviderInformation">
 <wsdlsoap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http" />
 <wsdl:operation name="getProviders">
  <wsdlsoap:operation soapAction="" />
  <wsdl:input name="getProvidersRequest">
   <wsdlsoap:body namespace="http://xml.spss.com/security/remote" use="literal" />
```

```
  </wsdl:input>
  <wsdl:output name="getProvidersResponse">
   <wsdlsoap:body namespace="http://xml.spss.com/security" use="literal" />
  </wsdl:output>
 </wsdl:operation>
</wsdl:binding>
```

In this case, the transport attribute of the wsdlsoap:binding element defines HTTP as the transport protocol. Both the *getProviders* and *getProvidersReponse* operations in the interface are bound to the SOAP messaging protocol.

### Services

The service element of a WSDL file identifies the network location at which the service interface can be accessed. Consider the following service definition:

```
<wsdl:service name="ProviderInformationService">
 <wsdl:port binding="impl:ProviderInformationSoapBinding" name="ProviderInformation">
  <wsdlsoap:address location="http://pes_server:8080/security-ws/services/ProviderInformation" />
 </wsdl:port>
</wsdl:service>
```

In this example, the operations comprising the *ProviderInformation* port type can be accessed at:

*http://pes_server:8080/security-ws/services/ProviderInformation*

## Proxies

Proxies serve as bridges between the client and the web service. A client-side proxy marshals the input objects into a standardized representation which is sent to the web service. A server-side proxy unmarshals the information into input objects for the service operations. The results of the operation are marshalled into standard representations and returned to the client. The client proxy unmarshals the response information into objects for any additional processing by the client.

Creating a proxy is the first step when developing a web service client; the proxy is the translation-unit between your application and the web service the application is using. Fortunately, many development environments include tools for automatically generating the client proxy from the web service WSDL file, allowing the client developer to focus on the client application code instead of transport and packaging protocols.

The proxy classes generated from a WSDL file depend on the tool used. For Java, the *wsdl2java* tool, which is part of the Apache Axis project, can be used. This tool produces a Java class for each type in the WSDL. Each port type results in a Java interface. A binding creates a stub class, and a WSDL service yields a service interface with a locator implementation. These generated classes and interfaces can be called directly from a client application written in Java to access the web service functionality.

An alternative Java proxy tool is *wsimport*, which is part of JAX-WS. The general structure of the generated classes is similar to that created by the Axis tool, but there are some differences. For example, instead of using arrays for input fields and returned items, the code generated from

the *wsimport* tool uses List collections. In addition, if an input type matches an output type for a method, the *wsimport* tool uses a Holder class for the parameter.

In contrast, on the .NET platform, the *wsdl.exe* tool is often used to generate a web service proxy. This tool creates a single source file in a specified language containing the proxy class. This class includes both synchronous and asynchronous methods for each operation defined in the WSDL. For example, the web service operation *getProviders* results in the methods *getProviders*, *getProvidersBegin*, and *getProvidersEnd*. The latter two can be used for asynchronous processing.

A variety of other tools exist for other programming languages. For details, consult the documentation for those tools. In each case, the tool creates native programming constructs that permit leveraging a web service regardless of the service implementation language.

Chapter 2

# Content Repository URI Service overview

The IBM® SPSS® Collaboration and Deployment Services Repository provides the storage facilities for IBM® SPSS® Collaboration and Deployment Services. The repository stores objects in a hierarchical system similar to the folder/file structure used in operating systems. The objects themselves may exist in several different versions to accommodate and track changes to the object over time.

The Content Repository URI Service provides remote access to the repository for general storage and retrieval of content and meta-data. For example, a new object can be stored in the repository with particular name and keyword values. Retrieval of the object also returns the meta-data associated with it. The Content Repository URI Service offers functionality similar to that found in the Content Repository Service. The primary difference is the use of **uniform resource identifiers** to reference objects stored in the repository instead of identification specifiers. For more information, see the topic Uniform Resource Identifiers in Chapter 3 on p. 12.

## Accessing the Content Repository URI Service

To access the functionality offered by the Content Repository URI Service, create a client application using the proxy classes generated by your preferred web service tool. The endpoint for the service is:

http://<host-name>:<port-number>/cr-ws/services/ContentRepositoryURI

The value of <*host-name*> corresponds to the machine on which IBM® SPSS® Collaboration and Deployment Services Repository is installed, with <*port-number*> indicating the port number on which it is running. To access the WSDL file for the service, append *?wsdl* to the service endpoint.

For example, if IBM SPSS Collaboration and Deployment Services Repository is running on port 80 of the machine *cads_server*, the WSDL file can be accessed using the path:

http://cads_server:80/cr-ws/services/ContentRepositoryURI?wsdl

## Calling Content Repository URI Service operations

Clients access the operations offered by the web service using a stub for the service. The following is an example of how to acquire a stub in Java through Axis defined methods:

```
String context = "/cr-ws/services/ContentRepositoryURI";
URL url = new URL("http", "cads_server", 80, context);
ContentRepositoryURIService service = new ContentRepositoryURIServiceLocator();
stub = service.getContentRepositoryURI(url);
```

The service operations can be called directly from the stub, such as:

```
stub.getAllVersions(uri);
```

The *Operation reference* contains examples of calling the operations available in the service. These examples are based on proxy code generated from the WSDL file using the Axis WSDL-to-Java tool. Proxy code generated using another tool may differ slightly from that shown here. For example, the Axis tool interprets the type xs:dateTime as the java.util.Calendar class while the Castor tool interprets it as a java.util.Date. As a result, the classes used in the examples may differ from an implementation based on another tool.

Chapter
3

# Repository Concepts

## Resources

A resource is an item stored within the repository, such as a folder, a file, or a topic. Any resource in the repository has a collection of meta-data associated with it, including:

- **ID**. A unique identifier for the resource often used by web service operations to reference the repository resource being manipulated.
- **Version.** List of version identifiers for the resource. The specification of a version and an ID uniquely identifies a resource.
- **Creator.** The principal who created the resource.
- **Creation date.** The date and time the resource was created in the repository.
- **Modification Date.** The last date and time the resource was modified.
- **Title**. The resource name.
- **Description.** Text describing the resource. For non-English text, the language should be specified for proper processing.
- **Path**. The path to the resource in the repository hierarchy. The repository stores resources in hierarchies that depend on the resource type. As a result, the path must define which hierarchy type to use for the resource. Valid hierarchy types include folder, topic, configuration, server, credential, datasource, enterprise, and submitted.

In addition to this base meta-data, individual resource types may include their own custom meta-data. For example, files include content size.

Some resources are **controlled**, meaning they contain a meaningful access control list (ACL). The ACL defines the permissions for principals that can access the resource. For example, the resource may only allow read access to everyone but the principal who created it. That principal would have total control over the resource.

A resource can be **locked** by a user to prevent others from modifying the properties or content of any version of the resource. Other users can view a locked resource, but modifications are not allowed until the lock is removed. Locks do not expire, and can be removed only by the user who locked the resource or an administrator who has the appropriate action associated with their role.

The Content Repository URI Service includes operations for creating, retrieving, updating, copying, moving, and deleting resources within the repository.

## Folders

Folder resources provide an organization mechanism for file resources based on storage location similar to the folder structure of Windows and the directory structure of Unix. The title of the resource in the folder hierarchy corresponds to the name of the folder. The resource path defines the location of the resource in the folder hierarchy. The contents of a folder are referred to as the **children** of the folder and may be either files or other folders.

Construction of a folder hierarchy using the Content Repository URI Service involves use of the createResource operation to define folders. Create a child for a folder by specifying the desired resource path when creating or updating the resource for the child.

## Files

A file resource corresponds to a simple file stored within the IBM® SPSS® Collaboration and Deployment Services Repository, such as a IBM® SPSS® Modeler stream or a IBM® SPSS® Statistics syntax file. In addition to the actual file content and the meta-data associated with general resources, a file resource includes the following information:

- **Author.** The author of the file.
- **MIME type.** Information indicating the media type contained within the file.
- **Size.** File size in bytes.
- **Language.** Language of the file content.
- **Topic list.** A list of topics associated with the file. For more information, see the topic Topics on p. 11.
- **Keyword list.** A list of searchable keywords associated with the file.
- **Expiration date.** The date and time to remove the file from the repository.

Use the getFile operation of the Content Repository URI Service to retrieve a file from the repository. If the file meta-data only is needed, use the getResource operation.

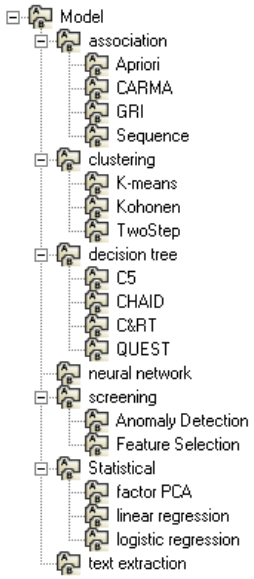
## Topics

Topics allow the definition of a classification system for the content stored in the IBM® SPSS® Collaboration and Deployment Services Repository, providing a hierarchical map to guide users to the resources they need. Topics function like a directory structure but differ from directories in that a single object can be listed under multiple topics.

For example, you might want to create a topic structure that mirrors your organization, with separate topics for marketing, finance, development, and so on. Users can then choose from the available topics when storing content. In addition, users can limit content searches to specific topics to accelerate the retrieval process. Because a given item can be listed under multiple topics, cross-indexing is also possible.

Alternatively, consider the topic hierarchy shown in the “Example topic hierarchy” figure. This hierarchy uses model type as the basis for classifying resources.

Figure 3-1
*Example topic hierarchy*




Any model in the repository could be assigned a topic in this hierarchy to assist in finding desired resources. For example, a user might want to find all association models that use a specific field. Alternatively, the search may be restricted to CARMA models only.

Topic resources provide an organization mechanism for file resources based on a keyword hierarchy. The title of the resource in the topic hierarchy denotes the name of the topic. The resource path defines the location of the resource in the topic hierarchy. Topics appearing under other topics in the topic hierarchy are referred to as subtopics, or **children** of the parent topic. For example, in the model type topic hierarchy, the *Anomaly Detection* and *Feature Selection* topics are children of the *screening* topic, which is itself a child of the *Model* topic.

Construction of a topic hierarchy using the Content Repository URI Service involves repeated use of the `createResource` operation to define topics and their parent/child relationships. Assign topics from the resulting hierarchy to files using the `updateResource` operation to modify the list of associated topics for the file.

## Uniform Resource Identifiers

Resources within the IBM® SPSS® Collaboration and Deployment Services Repository are often referenced using a uniform resource identifier. A content repository URI consists of the following items:

- The scheme *spsscr:*
- A hierarchical specification consisting of an authority definition and an optional object path
- An optional query specifying an object identifier
- Optional fragments defining version information

The URI has the following format:

spsscr://[*host*][:*port*]/[*path/filename* [?hierarchyType=*type*] | ?id=*repositoryID*][#l.*label* | #m.*marker*]

The hierarchical portion begins with two slashes, followed by the authority definition. This information identifies the host name and port number for the repository containing the object, followed by a slash. The authority definition may be omitted, in which case the URI indicates a relative location within the repository processing the service request.

spsscr:///[*path/filename* [?hierarchyType=*type*] | ?id=*repositoryID*][#l.*label* | #m.*marker*]

The URI continues with either the full path to the object, including its name, or a question mark and a query term consisting of the key *id*, an equals sign, and the repository resource identifier for the object. This identifier can be obtained from the information returned by the getResource operation of the Content Repository Service.

If the URI specifies an object path, the path may be followed by a query parameter designating the type of hierarchy containing the object. This parameter begins with a question mark, followed by the key *hierarchyType*, an equals sign, and the hierarchy type designator. Valid hierarchy types include *folder*, *topic*, *configuration*, *server*, *credential*, *datasource*, *enterprise*, and *submitted*. If the *hierarchyType* parameter is omitted, the *folder* hierarchy is used by default. The *hierarchyType* parameter is valid only when using the path to identify the object.

Optional version fragments follow the object information. The fragments begin with a hash symbol (#), followed by a single letter indicating whether the fragment is a version label (l) or a version timestamp marker (m). The fragment ends with a period and the actual label or marker for the version. Replace any spaces in the label or marker with escape characters. For example, the URI:

spsscr://myserver:80/marketing/campaign1#m.0:2006-10-08%2012:34:10.223

refers to the version of the *campaign1* job in the *marketing* folder saved at 12:34 on October 8, 2006. A URI that does not include a version fragment references the latest version of the object. For instance, the URI:

spsscr://localhost/campaign2

refers to the latest version of the job *campaign2*.

## Specifiers

To preserve polymorphism of both parameters and return values across the web service for clients implemented in varying programming languages, the service uses wrappers, or **specifiers**, for passing resources and resource identifiers.

**Resource specifier.** Wraps any resource, such as a file or topic. A resource specifier is a common parameter and return value for operations dealing with resources. For convenience, a client should include a method that creates a resource specifier from a resource, similar to the following Java example:

```
public static ResourceSpecifier getResourceSpecifier(Resource resource) {
 ResourceSpecifier rs = new ResourceSpecifier();
 rs.setResource(resource);
```

```
 return rs;
}
```

# Custom properties

The standard meta-data for resources can be extended to include information from user-defined custom properties. For example, a *Reviewer* property could be assigned to files to denote the person responsible for reviewing the file before moving it into production. The default meta-data for the resource does not include this property so a custom property must be defined. Working with custom properties involves the following two distinct approaches:

- Defining the properties
- Assigning values to the properties for specific objects

## Defining custom properties

Custom property definition involves the specification of three criteria: the property type, the property label, and the property reach. The custom property type determines the type of information that can be stored within the property. Available property types include:

- **string**. Values for the custom property correspond to string data.
- **number**. The custom property values are numbers.
- **boolean**. Values for the custom property represent binary choices, such as *yes/no* or *true/false*.
- **single choice**. A value for this property type represents a single selection from a list of possible alternatives.
- **multiple select**. Values for the custom property correspond to a one or more selections from a list of possible alternatives.

The custom property type can be used by client interfaces to present appropriate controls for manipulating the property value. For example, if the server indicates that a property is a boolean, the client can use an option (radio) button to allow the user to modify the value. The property label provides text that can be used to describe the control.

The reach of a custom property specifies which types of repository objects include the property. Custom properties can be applied to all objects within the repository or restricted to certain types of objects, such as files, folders, or jobs.

The Content Repository URI Service includes operations for creating, retrieving, updating, and deleting custom properties.

## Assigning custom property values

A newly created custom property is immediately available to all repository objects of the type defined by the property. For example, the custom property “Reviewer” may by defined for all jobs and files in the repository, but not for folders. Every job and file can be assigned a value for this property. Initially the property value will be a null or default value for each object, so assigning a value corresponds to updating the existing value. Updating a custom property value

for an object requires the specification of both the new value for the property and an identifier for the object being assigned the value.

The Content Repository URI Service includes operations for retrieving and updating custom property values for objects within the repository.

## Transfers

Transfers involve the exchange of resources between two repository instances or between a repository and a file system. Typically this involves the export of a folder from one repository and the subsequent import of that folder into another. For any successful transfer, the following two criteria must be defined:

- The source to transfer
- The target destination for the source being transferred

Both the source are target are specified using the path information for the resources. For example, if the source being transferred is the *Modeling* folder from repository A and the target path corresponds to the *Analysis* folder of repository B, the transfer creates a *Modeling* folder as a child of the *Analysis* folder in repository B.

The transfer definition also includes the specification of a policy for handling conflicts that occur if the target destination already contains a child having the same title as the resource being transferred. Possible conflict resolutions include the following:

- Not creating any new versions if a resource already exists in the target location
- Deleting existing target versions and replacing them with imported versions from the source
- Adding new versions to the target resource corresponding to the versions from the source

When adding new versions, a policy for handling label conflicts can also be defined. For example, suppose a version of the file *QuarterlyResults.sps* in the transfer source has the label *Production* and the transfer target contains a file with the same name in the same location. If conflicts are handled by appending new versions to the target and a version of the target file already has the label *Production*, a version label conflict occurs. A policy for resolving conflicts of this type determines whether the source or target version retains the conflicting label during a transfer.

The Content Repository URI Service includes operations for initiating, monitoring, and canceling resource transfers.

Chapter
4

# Operation reference

## The applyTransferPolicy operation

Applies specified policies to resolve conflicts arising during a resource transfer.

### Input fields

The following table lists the input fields for the applyTransferPolicy operation.

Table 4-1
*Fields for applyTransferPolicy*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |
| CompositeTransferPolicy | CompositeTransferPolicy | Defines a set of the resource transfer policies. |

### Java example

To create and apply policies for resolving conflicts:

1. Create a CompositeTransferPolicy object to define the set of policies.
2. Create a policy object for each desired default policy. Modify the policy properties as needed. Add each policy object to the composite policy using the addTransferPolicy method. During conflict resolution, policies are applied in the order in which they were added to the composite policy so always add default policies first.
3. Create a policy object for each policy being applied to individual resources. Modify the policy properties as needed.
4. For each policy type, create a ResourceURI object and assign the resource URI for the resource to which the policy will be applied. Use the addResourceIdentifier method to add the URIs to the policy object.
5. Add each policy object to the composite policy using the addTransferPolicy method.
6. Supply the applyTransferPolicy operation with the identifier for the transfer and the overall policy object.

The following sample defines no change as the default policy. In addition, no change and append policies are used for specific resources.

```
CompositeTransferPolicy compositeTransferPolicy = new CompositeTransferPolicy();
// our default is "no change", this will apply to all the resources
NoChangeImportPolicy noChangeImportPolicy = new NoChangeImportPolicy();
compositeTransferPolicy.addTransferPolicy(noChangeImportPolicy);
```

```
noChangeImportPolicy.setInvalidVersions(true);
ResourceURI resourceURI = new ResourceURI();
resourceURI.setValue("spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b854e");
noChangeImportPolicy.addResourceIdentifier(resourceURI);
compositeTransferPolicy.addTransferPolicy(noChangeImportPolicy);

AppendImportPolicy appendImportPolicy = new AppendImportPolicy();
appendImportPolicy.setVersionLabelPolicy(VersionLabelPolicy.SOURCE);
resourceURI.setValue("spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8562");
appendImportPolicy.addResourceIdentifier(resourceURI);
compositeTransferPolicy.addTransferPolicy(appendImportPolicy);

stub.applyTransferPolicy(transferId, compositeTransferPolicy);
```

Note that the resource URIs in this sample do not include version information. As a result, the policies are applied at the resource level.

To resume importing using the applied policies, use the setExecute method to set execution to *true* for the composite policy.

### *SOAP request example*

Client invocation of the applyTransferPolicy operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <applyTransferPolicy xmlns="http://xml.spss.com/repository/remote">
   <ns2:TransferIdentifier engineVersion="2.0" xmlns:ns2="http://xml.spss.com/repository"
    >603g8f7e81</ns2:TransferIdentifier>
   <ns3:CompositeTransferPolicy execute="true" xmlns:ns3="http://xml.spss.com/repository">
    <ns3:TransferPolicy invalidVersions="true" xsi:type="NoChangeImportPolicy"/>
    <ns3:TransferPolicy xsi:type="NoChangeImportPolicy">
     <ns3:resourceIdentifier value="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b854e"
      xsi:type="ResourceURI"/>
    </ns3:TransferPolicy>
    <ns3:TransferPolicy versionLabelPolicy="source" xsi:type="AppendImportPolicy">
     <ns3:resourceIdentifier value="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8562"
```

```
        xsi:type="ResourceURI"/>
      </ns3:TransferPolicy>
    </ns3:CompositeTransferPolicy>
  </applyTransferPolicy>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a applyTransferPolicy operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <applyTransferPolicyResponse xmlns="http://xml.spss.com/repository/remote"/> </soapenv:Body>
</soapenv:Envelope>
```

## *The cancelTransfer operation*

Cancels a resource transfer.

#### *Input fields*

The following table lists the input fields for the cancelTransfer operation.

Table 4-2
*Fields for cancelTransfer*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |

#### *Java example*

The following sample cancels the transfer with identifer *transferId*.

```
stub.cancelTransfer(transferId);
```

#### *SOAP request example*

Client invocation of the cancelTransfer operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
```

```
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <cancelTransfer xmlns="http://xml.spss.com/repository/remote">
   <TransferIdentifier xmlns="http://xml.spss.com/repository">5d9485bag0</TransferIdentifier>
  </cancelTransfer>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a cancelTransfer operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <cancelTransferResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The cascadePermissions operation*

Allows a client to set permissions on a resource and cascade the permission to all children. Permissions in the file system are not intrinsically inherited from parent resources. This does not mean that a child file of a folder will not have the same permissions as the parent folder, and indeed this will occur by default. However, the children of a resource can be updated with custom permissions. As a result, it may be necessary when changing permissions on a folder to either cascade the entire new access control list or the new permission down to lower levels.

#### *Input fields*

The following table lists the input fields for the cascadePermissions operation.

Table 4-3
*Fields for cascadePermissions*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the resource whose permissions are being cascaded. |
| Options | Options | Options to cascade permission deltas as well as set permission on the parent. |
| AccessControlList | AccessControlList | Defines entire scope of permission on a controlled resource for all principals that have access. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

***Java example***

Cascading permissions involves the following steps:

1. Define the URI for the parent object whose persmissions are to be cascaded.
2. Use an Options object to define the cascading behavior.
3. Specify the permissions to cascade using an AccessControlList object, which contains a list of AccessControlEntry objects. An AccessControlEntry object pairs a principal with a permission.
4. Define the owner of the AccessControlList object.
5. Supply the cascadePermissions operation with the URI, cascade options, and access control list.

The following sample cascades the permission changes to the file *E01_FindDuplicates.str*.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E01_FindDuplicates.str";

Options opt = new Options();
opt.setCascadeDelta(true);
opt.setSetParent(true);

AccessControlList acl = new AccessControlList();
AccessControlEntry[] ace = new AccessControlEntry[3];
ace[0].setPermission(PermissionType.READ);
Principal principal = new Principal();
principal.setID("//gNative//$$security/everyoneGroup");
principal.setDisplayName("–everyone –");
principal.setName("$$security/everyoneGroup");
principal.setIsGroup(true);
ace[0].setPrincipal(principal);
ace[1].setPermission(PermissionType.READ);
principal.setID("//uNative//validUser");
principal.setDisplayName("validUser");
```

```
principal.setName("validUser");
principal.setIsGroup(false);
ace[1].setPrincipal(principal);
ace[2].setPermission(PermissionType.WRITE);
principal.setID("//uNative//validUser");
principal.setDisplayName("validUser");
principal.setName("validUser");
principal.setIsGroup(false);
ace[2].setPrincipal(principal);
acl.setAccessControlEntry(ace);
principal.setID("//uNative//admin");
principal.setDisplayName("admin");
principal.setName("admin");
principal.setIsGroup(false);
acl.setOwner(principal);

stub.cascadePermissions(uri, opt, acl, null);
```

### *SOAP request example*

Client invocation of the cascadePermissions operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <cascadePermissions xmlns="http://xml.spss.com/repository/remote">
   <ns2:ParentIdentificationSpecifier xsi:type="IdentificationSpecifier"
    xmlns:ns2="http://xml.spss.com/repository">
    <ns2:identifier value="0a0a4a35d98ee53f0000010ea9597eda80fa" xsi:type="ResourceID"/>
   </ns2:ParentIdentificationSpecifier>
   <ns3:Options cascadedelta="true" setparent="true" xmlns:ns3="http://xml.spss.com/repository"/>
   <ns4:AccessControlList xmlns:ns4="http://xml.spss.com/repository">
    <ns4:AccessControlEntry Permission="READ">
     <ns4:Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
      Name="$$security/everyoneGroup" IsGroup="true"/>
    </ns4:AccessControlEntry>
    <ns4:AccessControlEntry Permission="READ">
```

```
      <ns4:Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
        IsGroup="false"/>
     </ns4:AccessControlEntry>
     <ns4:AccessControlEntry Permission="WRITE">
      <ns4:Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
        IsGroup="false"/>
     </ns4:AccessControlEntry>
     <ns4:owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
    </ns4:AccessControlList>
   </cascadePermissions>
  </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a cascadePermissions operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <cascadePermissionsResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The copyResource operation*

Copies a resource to a specified parent. The resource version can be specified in the URI. If there is an attempt to copy the resource to a topic or a file parent, an exception is thrown. The operation returns the URI of the newly created object.

#### *Input fields*

The following table lists the input fields for the copyResource operation.

Table 4-4
*Fields for copyResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetParentURI | string | URI for the destination of the copy. |
| sourceURI | string | URI for the resource being copied. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the copyResource operation.

Table 4-5
*Return Value*

| Type | Description |
|---|---|
| string | URI for the new resource copy. |

### Java example

The following sample copies the file *P01_AgeCalculations.str* to the folder *Streams* at the root of the repository.

```
String targetURI = "spsscr://pes_server:80/Streams";
String sourceURI =
  "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
String newURI = stub.copyResource(targetURI, sourceURI, null);
```

### SOAP request example

Client invocation of the copyResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <copyResource xmlns="http://xml.spss.com/repository/remote">
   <targetParentURI>spsscr://pes_server:80/Streams</targetParentURI>
   <sourceURI>
    spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</sourceURI>
  </copyResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### SOAP response example

The server responds to a copyResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <copyResourceResponse xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr:///?id=0a0a4a359cb71b550000010e75728dd183f5#m.0:2006-10-23%2014:07:37.814</uri>
  </copyResourceResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## The createCustomProperty operation

Creates a custom property that can be assigned values for resources.

#### Input fields

The following table lists the input fields for the createCustomProperty operation.

Table 4-6
*Fields for createCustomProperty*

| Field | Type/Valid Values | Description |
|---|---|---|
| CustomProperty | CustomProperty | Metadata describing a custom property defined by a customer to apply to resources. |

#### Return information

The following table identifies the information returned by the createCustomProperty operation.

Table 4-7
*Return Value*

| Type | Description |
|---|---|
| string | The identifier of the created custom property. |

#### Java example

The following sample creates a custom property having the label *Reviewed*. The AppliesTo object defines the reach of the property while the Constraint object defines its type.

```
CustomProperty cp = new CustomProperty();
cp.setLabel("Reviewed");

AppliesTo at = new AppliesTo();
at.setFolderApplicable(false);
```

```
at.setJobApplicable(true);
cp.setAppliesTo(at);

Constraint cnst = new Constraint();
Freeform ff = new Freeform();
ff.setType(CustomPropertyValueType.BOOLEAN);
cnst.setFreeform(ff);
cp.setConstraint(cnst);

String id = stub.createCustomProperty(cp);
```

The AppliesTo object includes three methods for defining the property reach, setFolderApplicable, setJobApplicable, and setFileApplicable. The first two accept boolean arguments indicating whether or not the property applies to folders and jobs, respectively. The setFileApplicable method, on the other hand, limits a custom property to specific file types defined by a FileApplicable object corresponding to the MIME types of the files. In the absence of such a specification, the custom property being defined applies to all files.

To define the Constraint object, create a Freeform object and set its type to the desired type for the property using setType. Use setFreeform to assign the type to the Constraint object.

After assiging the reach and type to the property using setAppliesTo and setConstraint, add the custom property to the system using the createCustomProperty operation for the stub.

### *SOAP request example*

Client invocation of the createCustomProperty operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <createCustomProperty xmlns="http://xml.spss.com/repository/remote">
   <CustomProperty label="Reviewed" xmlns="http://xml.spss.com/repository">
    <appliesTo>
     <fileApplicable/>
     <jobApplicable>true</jobApplicable>
     <folderApplicable>false</folderApplicable>
    </appliesTo>
    <constraint>
```

```
        <freeform type="boolean"/>
      </constraint>
    </CustomProperty>
  </createCustomProperty>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a createCustomProperty operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <createCustomPropertyResponse xmlns="http://xml.spss.com/repository/remote">
    <identifier>0a0a4a3567b4a2cc0000010fed740baa800b</identifier>
  </createCustomPropertyResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The createOrAddResource operation*

Creates a resource in the repository. If the resource already exists, this operation adds a new version of it. The resource may be a folder, topic, or file.

#### *Input fields*

The following table lists the input fields for the createOrAddResource operation.

Table 4-8
*Fields for createOrAddResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the parent of the resource being created. |
| ResourceSpecifier | ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

| Field | Type/Valid Values | Description |
|---|---|---|
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |
| PropagateVersionSpecifier | VersionSpecifier | This Type is used to specify a particular version of an object, either by Marker or Label. It is distinguished from a Version Type by the fact that Version is used to return information about an Object's version, and may contain multiple labels. |

#### *Return information*

The following table identifies the information returned by the createOrAddResource operation.

Table 4-9
*Return Value*

| Type | Description |
|---|---|
| string | URI for the new resource. |

#### *Java example*

Creating a resource either as a new version of an existing resource or a new item typically involves the following steps:

1. Create a string indicating the URI for the parent of the resource being created.
2. Create a ResourceSpecifier object to wrap the resource object being created.
3. Create a resource object corresponding to the item being created: Folder for folders, Topic for topics, and File for files.
4. Define the properties for the resource object, such as its title.
5. Add the resource object to the ResourceSpecifier object.
6. Create a VersionSpecifier object to identify the version from which the metadata should be propagated if the resource already exists. Use either the label or marker for the version.
7. Add the resource object to the repository using the createOrAddResource operation.

The following code adds a file to the *Images* folder. If the file already exists, a new version is created, propagating the metadata from the *PRODUCTION* version.

```
String parentURI = "spsscr://pes_server:80/Images";
ResourceSpecifier specRes = new ResourceSpecifier();
File f = new File();
Title t = new Title();
```

```
t.setValue("property.svg");
f.setTitle(t);
MimeType mt = new MimeType ();
mt.setValue("image/svg+xml");
f.setMimeType(mt);
Author a = new Author();
a.setValue("sbennett");
f.setAuthor(a);
URL("file:///c:/property.svg");
URLDataSource uds = new URLDataSource(url);
DataHandler dh = new DataHandler(uds);
AttachmentPart at = new AttachmentPart(dh);
BinaryContent bc = new BinaryContent();
Attachment att = new Attachment();
att.setHref(at.getContentId());
bc.setAttachment(att);
f.setBinaryContent(bc);
((org.apache.axis.client.Stub)stub).addAttachment(at);
specRes.setResource(f);
VersionSpecifier prop = new VersionSpecifier();
prop.setLabel("PRODUCTION");
String uri = stub.createOrAddResource(parentURI, specRes, null, prop);
```

## The createResource operation

Creates a resource in the repository. The resource may be a folder, topic, file, or new version of an exisiting file.

### Input fields

The following table lists the input fields for the createResource operation.

Table 4-10
*Fields for createResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the parent of the resource being created. |
| ResourceSpecifier | ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the createResource operation.

Table 4-11
*Return Value*

| Type | Description |
|---|---|
| string | URI for the new resource. |

### *Java example*

Creating a resource in the repository typically involves the following steps:

1. Create a string indicating the URI for the parent of the resource being created.
2. Create a resource object corresponding to the item being created: Folder for folders, Topic for topics, and File for files.
3. Define the properties for the resource object, such as its title.
4. Add the resource object to the repository using createResource.

The following code adds the folder *Statistics files* to the root level of the repository.

```
String parentURI = "spsscr://pes_server:80";
ResourceSpecifier specifier = new ResourceSpecifier();
Folder folder = new Folder();
Title title = new Title();
title.setValue("Statistics files");
folder.setTitle(title);
specifier.setResource(folder);
String newURI = stub.createResource(parentURI, specifier, null);
```

### *SOAP request example*

Client invocation of the createResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <createResource xmlns="http://xml.spss.com/repository/remote">
```

```
    <parentURI>spsscr://pes_server:80</parentURI>
    <ns3:ResourceSpecifier xmlns:ns3="http://xml.spss.com/repository">
     <ns3:Resource xsi:type="Folder">
      <ns3:Title value="Statistics files"/>
     </ns3:Resource>
    </ns3:ResourceSpecifier>
   </createResource>
  </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a createResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
   xmlns:xsd="http://www.w3.org/2001/XMLSchema"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
   <createResourceResponse xmlns="http://xml.spss.com/repository/remote">
    <uri>spsscr:///?id=0a0a4a3526737cd10000010ec7edde5680d4</uri>
   </createResourceResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

## *The createResourcePropagate operation*

Creates a resource in the repository, propagating the metadata from a specified resource version to the new resource. The resource may be a folder, topic, file, or new version of an existing file.

#### *Input fields*

The following table lists the input fields for the createResourcePropagate operation.

Table 4-12
*Fields for createResourcePropagate*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the parent of the resource being created. |
| ResourceSpecifier | ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

| Field | Type/Valid Values | Description |
|---|---|---|
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |
| PropagateVersionSpecifier | VersionSpecifier | This Type is used to specify a particular version of an object, either by Marker or Label. It is distinguished from a Version Type by the fact that Version is used to return information about an Object's version, and may contain multiple labels. |

#### *Return information*

The following table identifies the information returned by the createResourcePropagate operation.

Table 4-13
*Return Value*

| Type | Description |
|---|---|
| string | URI for the new resource. |

#### *Java example*

Propagating properties to a newly created resource typically involves the following steps:

1. Create a string indicating the URI for the parent of the resource being created.
2. Create a ResourceSpecifier object to wrap the resource object being created.
3. Create a resource object corresponding to the item being created: Folder for folders, Topic for topics, and File for files.
4. Define the properties for the resource object, such as its title.
5. Add the resource object to the ResourceSpecifier object.
6. Create a VersionSpecifier object to identify the version from which the metadata should be propagated. Use either the label or marker for the version.
7. Add the resource object to the repository using the createResourcePropagate operation.

The following code creates a new version of a file in the *Images* folder, propagating the metadata from the *PRODUCTION* version.

```
String parentURI = "spsscr://pes_server:80/Images";
ResourceSpecifier specRes = new ResourceSpecifier();
File f = new File();
Title t = new Title();
t.setValue("property.svg");
```

```
f.setTitle(t);
MimeType mt = new MimeType ();
mt.setValue("image/svg+xml");
f.setMimeType(mt);
Author a = new Author();
a.setValue("sbennett");
f.setAuthor(a);
URL("file:///c:/property.svg");
URLDataSource uds = new URLDataSource(url);
DataHandler dh = new DataHandler(uds);
AttachmentPart at = new AttachmentPart(dh);
BinaryContent bc = new BinaryContent();
Attachment att = new Attachment();
att.setHref(at.getContentId());
bc.setAttachment(att);
f.setBinaryContent(bc);
((org.apache.axis.client.Stub)stub).addAttachment(at);
specRes.setResource(f);
VersionSpecifier prop = new VersionSpecifier();
prop.setLabel("PRODUCTION");
String uri = stub.createResourcePropagate(parentURI, specRes, null, prop);
```

### *SOAP request example*

Client invocation of the createResourcePropagate operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <createResourcePropagate xmlns="http://xml.spss.com/repository/remote">
   <parentURI>spsscr://pes_server:80/Images</parentURI>
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource xsi:type="File" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
     <Title value="property.svg"/>
     <Author value="sbennett"/>
     <MimeType value="image/svg+xml"/>
     <BinaryContent>
      <Attachment href="B0245F71E6C368E83D2B99EE9645C5DF"/>
```

```
      </BinaryContent>
     </Resource>
    </ResourceSpecifier>
    <PropagateVersionSpecifier label="PRODUCTION" xmlns="http://xml.spss.com/repository"/>
   </createResourcePropagate>
  </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a createResourcePropagate operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <createResourcePropagateResponse xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr:///?id=0a0a4aac00072ffb00000106f3f7b05b3a03</uri>
  </createResourcePropagateResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The createUniqueSubmittedFolder operation*

For internal use only. Consumers of the web service should not use this operation.

#### *Input fields*

The following table lists the input fields for the createUniqueSubmittedFolder operation.

Table 4-14
*Fields for createUniqueSubmittedFolder*

| Field | Type/Valid Values | Description |
|---|---|---|
| workName | string | The name which is passed from client side. |

#### *Return information*

The following table identifies the information returned by the createUniqueSubmittedFolder operation.

Table 4-15
*Return Value*

| Type | Description |
|---|---|
| IdentificationSpecifier | Wrapper for identification information(Id, path, version label, version marker).Used to define service interface parameters and return values and preserve polymorphism of wrapped objects. |

# The deleteCustomProperty operation

Deletes a custom property from the repository.

### Input fields

The following table lists the input fields for the deleteCustomProperty operation.

Table 4-16
*Fields for deleteCustomProperty*

| Field | Type/Valid Values | Description |
|---|---|---|
| identifier | string | Identifier for the custom property. |

### Java example

The following function accepts a string corresponding to the identifier for the custom property to be deleted. The deleteCustomProperty operation uses this information to delete the property from the repository.

```
public void deleteCustomProperty(String customPropertyID)
  throws IOException, ServiceException,RepositoryException {
  ContentRepository repository = getContentRepository();
  repository.deleteCustomProperty(customPropertyID);
}
```

### SOAP request example

Client invocation of the deleteCustomProperty operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <deleteCustomProperty xmlns="http://xml.spss.com/repository/remote">
   <identifier>0a0a4aac00072ffb00000106f3f7b05b348f</identifier>
  </deleteCustomProperty>
 </soapenv:Body>
</soapenv:Envelope>
```

#### SOAP response example

The server responds to a deleteCustomProperty operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <deleteCustomPropertyResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## The deleteResource operation

Deletes a specified resource from the repository. To delete a specific version of the resource, include that information in the URI. If there is not a version specified, the latest version is deleted.

#### Input fields

The following table lists the input fields for the deleteResource operation.

Table 4-17
*Fields for deleteResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for the resource to delete. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

#### Java example

The following example deletes the latest version of the file *P05_Median.str* from the repository.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P05_Median.str";
stub.deleteResource(uri, null);
```

#### SOAP request example

Client invocation of the deleteResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <deleteResource xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P05_Median.str</uri>
  </deleteResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a deleteResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <deleteResourceResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The disposeTransfer operation*

Frees system resources allocated on the server for a resource transfer.

#### *Input fields*

The following table lists the input fields for the disposeTransfer operation.

Table 4-18
*Fields for disposeTransfer*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |

### *Java example*

The following sample frees server resources allocated to the transfer with identifer *transferId*.

```
stub.disposeTransfer(transferId);
```

### *SOAP request example*

Client invocation of the disposeTransfer operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <disposeTransfer xmlns="http://xml.spss.com/repository/remote">
   <TransferIdentifier xmlns="http://xml.spss.com/repository">5d947f5e7f</TransferIdentifier>
  </disposeTransfer>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a disposeTransfer operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <disposeTransferResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

# The findAllLabels operation

Queries the repository for all labels currently assigned to objects in the hierarchical content repository. This includes labels in use for files and jobs.

### Return information

The following table identifies the information returned by the findAllLabels operation.

Table 4-19
*Return Value*

| Type | Description |
|---|---|
| string[] | Labels in use in the repository. |

### Java example

The following function returns all labels as an array of strings.

```
String[] labels = stub.findAllLabels();
System.out.println("Labels in use:");
for (int i = 0; i < labels.length; i++) {
  System.out.println(labels[i]);
}
```

### SOAP request example

Client invocation of the findAllLabels operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <findAllLabels xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

#### SOAP response example

The server responds to a findAllLabels operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <findAllLabelsResponse xmlns="http://xml.spss.com/repository/remote">
   <label>Modeler Output</label>
   <label>Production</label>
  </findAllLabelsResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## The getActions operation

Retrieves the list of actions, if any, that are defined for a resource.

#### Input fields

The following table lists the input fields for the getActions operation.

Table 4-20
*Fields for getActions*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for the resource. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

#### Return information

The following table identifies the information returned by the getActions operation.

Table 4-21
*Return Value*

| Type | Description |
|---|---|
| ActionList | List of action specifications. |

### *Java example*

The following example returns an ActionList object containing an array of ActionSpecificationType objects for the file *P01_AgeCalculations.str*. For each ActionSpecificationType object, the getAction method returns the action and the getSpecification returns the actual specification for the action.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
ActionList aList = stub.getActions(uri, null);
ActionSpecificationType[] aSpecType = aList.getActionSpecification();
for (int i = 0; i < aSpecType.length; i++) {
  System.out.println("Action: " + aSpecType[i].getAction());
  System.out.println("Specification: " + aSpecType[i].getSpecification());
  System.out.println("");
}
```

### *SOAP request example*

Client invocation of the getActions operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getActions xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</uri>
  </getActions>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getActions operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<soapenv:Body>
 <getActionsResponse xmlns="http://xml.spss.com/repository/remote">
  <ActionList>
   <ActionSpecification>
    <specification><?xml version="1.0"
     encoding="UTF-8"?> <job
     javaClass="com.spss.work.ClementineExecutor"
     repositoryUrl="http://pes_server:80/cr-ws/services/ContentRepository"
     repositoryId="0a0a4a359cb71b550000010e75728dd18211"><scheduleParameters
     contentType="application/x-vnd.spss-clementine-stream"><node
     name="General"
     objectType="Clementine.General"><choice
     objectType="Clementine.General.ClementineServer"
     name="Modeler
     server"><description>Choose a preconfigured
     Modeler server connection setting</description><item
     display="No Modeler servers have been configured"
     value=""/><value></value><default></default>
     </choice><choice
     objectType="Clementine.General.Credentials"
     name="Credentials"><description>Select
     the credentials to use for this job
     step</description><item display="No execution
     credentials have been configured" value="A Repository
     Resource ID"/><value>A Repository Resource
     ID</value><default>A Repository Resource
     ID</default></choice><choice
     objectType="Clementine.General.Version"
     name="Stream
     Version"><description>Choose the version of
     this stream to execute</description><item
     display="LATEST"
     value="LATEST"/><item
     display="Production"
     value="Production"/><item
     display="Test"
     value="Test"/><value>LATEST</value><default>LATEST
     </default></choice></node><node
     name="Repository"
     objectType="Repository.General"><choice
     objectType="Repository.General.RepositoryServer"
     name="Repository
     Server"><description>Choose a preconfigured
     Repository server connection setting</description><item
     display="No Content Repository Servers have been
     configured"
     value=""/><value></value><default></default>
     </choice><choice
     objectType="Repository.General.Credentials"
     name="Repository
     Credentials"><description>Select the

credentials to use for this job step</description><item
display="No Content Repository Credentials have been
configured" value=""/><item
display="No Content Repository Credentials have been
configured"
value=""/><value></value><default></default>
</choice></node><node
name="Results"
objectType="Clementine.Results"><node
name="RowSets"
objectType="Clementine.Results.RowSets"><output
objectType="Clementine.Results.table"
name="Customer Ages" needsFolder="false"
systemType="any"
default="spsscr:///ModelerStreamLibrary/Data%20Preparation/Customer%20Ages"
value="spsscr:///ModelerStreamLibrary/Data%20Preparation/Customer%20Ages">
<description>A
path to a folder in the repository</description><node
name="Output parameters"
objectType="Clementine.Results.RowSets.OutputParameters"><choice
objectType="Clementine.Results.RowSets.OutputParameters.OutputFormat"
name="Output
format"><description>Specify the format for
the file to store</description><item
display="Modeler native output format"
value="cou"/><item
display="Formatted"
value="tab"/><item display="Data
(comma delimited)"
value="dat"/><item display="HTML
document"
value="html"/><value>dat</value><default>dat</default>
</choice><repositoryObject
name="This attr is required by the schema, but shouldn't
be" hidden="true"
value="0a0a4a359cb71b550000010e75728dd1832f"/><simple
name="Clementine.Processor.Type"
hidden="true"
type="freeform"><value>table</value></simple><simple
name="Clementine.Processor.Name"
hidden="true"
type="freeform"><value>table</value></simple></node>
<ns1:AccessControlList
poe="CMOR"
xmlns:ns1="http://xml.spss.com/repository"><ns1:AccessControlEntry
Permission="READ"><ns1:Principal
ID="//gNative//$$security/everyoneGroup"
DisplayName="–everyone –"
Name="$$security/everyoneGroup"
IsGroup="true"/></ns1:AccessControlEntry><ns1:AccessControlEntry
Permission="READ"><ns1:Principal
ID="//uNative//admin"

DisplayName="admin" Name="admin"
IsGroup="false"/></ns1:AccessControlEntry><ns1:owner
ID="//uNative//admin"
DisplayName="admin" Name="admin"
IsGroup="false"/></ns1:AccessControlList></output><output
objectType="Clementine.Results.table"
name="Joining Age" needsFolder="false"
systemType="any"
default="spsscr:///ModelerStreamLibrary/Data%20Preparation/Joining%20Age"
value="spsscr:///ModelerStreamLibrary/Data%20Preparation/Joining%20Age">
<description>A
path to a folder in the repository</description><node
name="Output parameters"
objectType="Clementine.Results.RowSets.OutputParameters"><choice
objectType="Clementine.Results.RowSets.OutputParameters.OutputFormat"
name="Output
format"><description>Specify the format for
the file to store</description><item
display="Modeler native output format"
value="cou"/><item
display="Formatted"
value="tab"/><item display="Data
(comma delimited)"
value="dat"/><item display="HTML
document"
value="html"/><value>dat</value><default>dat</default>
</choice><repositoryObject
name="This attr is required by the schema, but shouldn't
be" hidden="true"
value="0a0a4a359cb71b550000010e75728dd1832e"/><simple
name="Clementine.Processor.Type"
hidden="true"
type="freeform"><value>table</value></simple><simple
name="Clementine.Processor.Name"
hidden="true"
type="freeform"><value>table</value></simple></node>
<ns2:AccessControlList
poe="CMOR"
xmlns:ns2="http://xml.spss.com/repository"><ns2:AccessControlEntry
Permission="READ"><ns2:Principal
ID="//gNative//$$security/everyoneGroup"
DisplayName="–everyone –"
Name="$$security/everyoneGroup"
IsGroup="true"/></ns2:AccessControlEntry><ns2:AccessControlEntry
Permission="READ"><ns2:Principal
ID="//uNative//admin"
DisplayName="admin" Name="admin"
IsGroup="false"/></ns2:AccessControlEntry><ns2:owner
ID="//uNative//admin"
DisplayName="admin" Name="admin"
IsGroup="false"/></ns2:AccessControlList></output></node>
</node><node

```
        name=&quot;Parameters&quot;
        objectType=&quot;Clementine.Parameters&quot;/&gt;&lt;/scheduleParameters&gt;&lt;/job&gt;</specification>
       <action>execute</action>
      </ActionSpecification>
    </ActionList>
   </getActionsResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

# The getAllCustomProperties operation

Retrieves all custom properties currently defined in the repository.

### Return information

The following table identifies the information returned by the getAllCustomProperties operation.

Table 4-22
*Return Value*

| Type | Description |
|---|---|
| CustomProperty[] | Metadata describing a custom property defined by a customer to apply to resources. |

### Java example

The following function simply uses the stub for the service to return an array containing the complete set of available custom properties. Accessor methods for the returned CustomProperty objects can be used to return the properties for any specific property, such as its label.

```
CustomProperty[] customProperties = stub.getAllCustomProperties();
for (int i = 0; i < customProperties.length; i++) {
  System.out.println("Property label: " + customProperties[i].getLabel());
  System.out.println("Identifier: " + customProperties[i].getIdentifier());
  System.out.println();
}
```

### SOAP request example

Client invocation of the getAllCustomProperties operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
```

```
      <wsse:Password xsi:type="xsd:string">password</wsse:Password>
    </wsse:UsernameToken>
   </wsse:Security>
   <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
    xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
  </soapenv:Header>
  <soapenv:Body>
   <getAllCustomProperties xmlns="http://xml.spss.com/repository/remote"/>
  </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getAllCustomProperties operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getAllCustomPropertiesResponse xmlns="http://xml.spss.com/repository/remote">
   <CustomProperty label="Reviewed?" identifier="0a0a4aac00072ffb000001094fa9f57ed7e8"
    xmlns="http://xml.spss.com/repository">
    <appliesTo>
     <fileApplicable/>
     <jobApplicable>false</jobApplicable>
     <folderApplicable>false</folderApplicable>
    </appliesTo>
    <constraint>
     <freeform type="boolean"/>
    </constraint>
   </CustomProperty>
   <CustomProperty label="Reviewer" identifier="0a0a4aac00072ffb000001094fa9f57ed7e9"
    xmlns="http://xml.spss.com/repository">
    <appliesTo>
     <fileApplicable/>
     <jobApplicable>false</jobApplicable>
     <folderApplicable>false</folderApplicable>
    </appliesTo>
    <constraint>
     <select multipleSelect="false">
      <selectionValue>Andy</selectionValue>
      <selectionValue>Nate</selectionValue>
      <selectionValue>Cory</selectionValue>
      <selectionValue>Rick</selectionValue>
     </select>
    </constraint>
   </CustomProperty>
  </getAllCustomPropertiesResponse>
 </soapenv:Body>
```

```
</soapenv:Envelope>
```

# The getAllLocks operation

Returns all currently locked resources. For maximum flexibility, the structure of the information returned follows the webrowset.xsd ( *http://java.sun.com/xml/ns/jdbc/webrowset.xsd*) schema.

### Return information

The following table identifies the information returned by the getAllLocks operation.

Table 4-23
*Return Value*

| Type | Description |
|---|---|
| RowSetContent | Allows the user to transport a row set either as an out-of-band attachement or as in-band string |

### Java example

The following sample uses the stub for the service to return a list of all active locks currently in the system. The getContent method returns a string containing the WebRowSet structure.

```
RowSetContent rowset = stub.getAllLocks();
System.out.println(rowset.getContent());
```

### SOAP request example

Client invocation of the getAllLocks operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getAllLocks xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getAllLocks operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getAllLocksResponse xmlns="http://xml.spss.com/repository/remote">
   <RowSetContent pageNumber="1" xmlns="http://xml.spss.com/repository">
    <content>&lt;?xml version=&quot;1.0&quot;?&gt; &lt;webRowSet
     xmlns=&quot;http://java.sun.com/xml/ns/jdbc&quot;
     xmlns:xsi=&quot;http://www.w3.org/2001/XMLSchema-instance&quot;
     xsi:schemaLocation=&quot;http://java.sun.com/xml/ns/jdbc
     http://java.sun.com/xml/ns/jdbc/webrowset.xsd&quot;&gt; &lt;properties&gt;
     &lt;command&gt;&lt;null/&gt;&lt;/command&gt;
     &lt;concurrency&gt;1008&lt;/concurrency&gt;
     &lt;datasource&gt;&lt;null/&gt;&lt;/datasource&gt;
     &lt;escape-processing&gt;true&lt;/escape-processing&gt;
     &lt;fetch-direction&gt;1000&lt;/fetch-direction&gt;
     &lt;fetch-size&gt;0&lt;/fetch-size&gt;
     &lt;isolation-level&gt;2&lt;/isolation-level&gt;
     &lt;key-columns&gt; &lt;/key-columns&gt; &lt;map&gt;
     &lt;/map&gt; &lt;max-field-size&gt;0&lt;/max-field-size&gt;
     &lt;max-rows&gt;0&lt;/max-rows&gt;
     &lt;query-timeout&gt;0&lt;/query-timeout&gt;
     &lt;read-only&gt;true&lt;/read-only&gt;
     &lt;rowset-type&gt;ResultSet.TYPE_SCROLL_INSENSITIVE&lt;/rowset-type&gt;
     &lt;show-deleted&gt;false&lt;/show-deleted&gt;
     &lt;table-name&gt;&lt;null/&gt;&lt;/table-name&gt;
     &lt;url&gt;&lt;null/&gt;&lt;/url&gt; &lt;sync-provider&gt;
     &lt;sync-provider-name&gt;com.sun.rowset.providers.RIOptimisticProvider&lt;/sync-provider-name&gt;
     &lt;sync-provider-vendor&gt;Sun Microsystems
     Inc.&lt;/sync-provider-vendor&gt;
     &lt;sync-provider-version&gt;1.0&lt;/sync-provider-version&gt;
     &lt;sync-provider-grade&gt;2&lt;/sync-provider-grade&gt;
     &lt;data-source-lock&gt;1&lt;/data-source-lock&gt;
     &lt;/sync-provider&gt; &lt;/properties&gt; &lt;metadata&gt;
     &lt;column-count&gt;6&lt;/column-count&gt;
     &lt;column-definition&gt;
     &lt;column-index&gt;1&lt;/column-index&gt;
     &lt;auto-increment&gt;false&lt;/auto-increment&gt;
     &lt;case-sensitive&gt;false&lt;/case-sensitive&gt;
     &lt;currency&gt;false&lt;/currency&gt;
     &lt;nullable&gt;1&lt;/nullable&gt;
     &lt;signed&gt;false&lt;/signed&gt;
     &lt;searchable&gt;true&lt;/searchable&gt;
     &lt;column-display-size&gt;36&lt;/column-display-size&gt;
     &lt;column-label&gt;objid&lt;/column-label&gt;
     &lt;column-name&gt;objid&lt;/column-name&gt;
```

<schema-name></schema-name>
<column-precision>18</column-precision>
<column-scale>0</column-scale>
<table-name>SPSSCMOR_RELATIONSHIP</table-name>
<catalog-name></catalog-name>
<column-type>-2</column-type>
<column-type-name>binary</column-type-name>
</column-definition> <column-definition>
<column-index>2</column-index>
<auto-increment>false</auto-increment>
<case-sensitive>false</case-sensitive>
<currency>false</currency>
<nullable>1</nullable>
<signed>false</signed>
<searchable>true</searchable>
<column-display-size>1024</column-display-size>
<column-label>path</column-label>
<column-name>path</column-name>
<schema-name></schema-name>
<column-precision>1024</column-precision>
<column-scale>0</column-scale>
<table-name></table-name>
<catalog-name></catalog-name>
<column-type>12</column-type>
<column-type-name>nvarchar</column-type-name>
</column-definition> <column-definition>
<column-index>3</column-index>
<auto-increment>false</auto-increment>
<case-sensitive>false</case-sensitive>
<currency>false</currency>
<nullable>1</nullable>
<signed>false</signed>
<searchable>true</searchable>
<column-display-size>512</column-display-size>
<column-label>marker</column-label>
<column-name>marker</column-name>
<schema-name></schema-name>
<column-precision>512</column-precision>
<column-scale>0</column-scale>
<table-name>SPSSCMOR_OBJECTVERSION</table-name>
<catalog-name></catalog-name>
<column-type>12</column-type>
<column-type-name>nvarchar</column-type-name>
</column-definition> <column-definition>
<column-index>4</column-index>
<auto-increment>false</auto-increment>
<case-sensitive>false</case-sensitive>
<currency>false</currency>
<nullable>1</nullable>
<signed>false</signed>
<searchable>true</searchable>
<column-display-size>1024</column-display-size>

<column-label>fileVersionlabeled</column-label>
<column-name>fileVersionlabeled</column-name>
<schema-name></schema-name>
<column-precision>1024</column-precision>
<column-scale>0</column-scale>
<table-name></table-name>
<catalog-name></catalog-name>
<column-type>12</column-type>
<column-type-name>nvarchar</column-type-name>
</column-definition> <column-definition>
<column-index>5</column-index>
<auto-increment>false</auto-increment>
<case-sensitive>false</case-sensitive>
<currency>false</currency>
<nullable>1</nullable>
<signed>false</signed>
<searchable>true</searchable>
<column-display-size>128</column-display-size>
<column-label>owner</column-label>
<column-name>owner</column-name>
<schema-name></schema-name>
<column-precision>128</column-precision>
<column-scale>0</column-scale>
<table-name>SPSSCMOR__LOCK</table-name>
<catalog-name></catalog-name>
<column-type>12</column-type>
<column-type-name>nvarchar</column-type-name>
</column-definition> <column-definition>
<column-index>6</column-index>
<auto-increment>false</auto-increment>
<case-sensitive>false</case-sensitive>
<currency>false</currency>
<nullable>1</nullable>
<signed>false</signed>
<searchable>true</searchable>
<column-display-size>23</column-display-size>
<column-label>creationDate</column-label>
<column-name>creationDate</column-name>
<schema-name></schema-name>
<column-precision>23</column-precision>
<column-scale>3</column-scale>
<table-name>SPSSCMOR__LOCK</table-name>
<catalog-name></catalog-name>
<column-type>93</column-type>
<column-type-name>datetime</column-type-name>
</column-definition> </metadata> <data>
<currentRow> <columnValue></columnValue>
<columnValue>/Jobs/Results</columnValue>
<columnValue>0:2007-10-23 12:14:01.71</columnValue>
<columnValue>LATEST, Test</columnValue>
<columnValue>admin</columnValue>
<columnValue>11934097977727</columnValue>

</currentRow> <currentRow>
<columnValue></columnValue>
<columnValue>/ModelerStreamLibrary/Data
Preparation/P01_AgeCalculations.str</columnValue>
<columnValue>0:2007-10-23 12:09:19.132</columnValue>
<columnValue>LATEST, Production</columnValue>
<columnValue>admin</columnValue>
<columnValue>1193410484000</columnValue>
</currentRow> <currentRow>
<columnValue></columnValue>
<columnValue>/ModelerStreamLibrary/Data
Preparation/P02_BasketTransformation.str</columnValue>
<columnValue>0:2007-10-23 12:09:22.841</columnValue>
<columnValue>LATEST, Production</columnValue>
<columnValue>admin</columnValue>
<columnValue>1193410529473</columnValue>
</currentRow> </data> </webRowSet> </content>
</RowSetContent>
</getAllLocksResponse>
</soapenv:Body>
</soapenv:Envelope>

## The getAllVersions operation

Retrieves metadata information for all versions of a specified resource.

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

### *Input fields*

The following table lists the input fields for the getAllVersions operation.

Table 4-24
*Fields for getAllVersions*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for the resource. Any version information in the URI is ignored. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### *Return information*

The following table identifies the information returned by the getAllVersions operation.

Table 4-25
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### *Java example*

The following example returns an array of resource specifiers corresponding to all versions of the file *P01_AgeCalculations.str*. To access the actual resources, use the getResource method for the resource specifiers.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
ResourceSpecifier[] versions = stub.getAllVersions(uri, null);
for (int i = 0; i < versions.length; i++) {
  Resource resourceVersion = versions[i].getResource();
  Version version = resourceVersion.getVersion();
  System.out.println("Version marker: " + version.getMarker());
  System.out.println("Version label: " + version.getLabel());
  Calendar creationValue = resourceVersion.getCreationDate().getValue();
  System.out.println("Creation Date: " + creationValue.toString());
  System.out.println("Created By: " + resourceVersion.getCreatedBy().getValue());
  System.out.println();
}
```

### *SOAP request example*

Client invocation of the getAllVersions operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
```

```
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getAllVersions xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</uri>
  </getAllVersions>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a getAllVersions operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getAllVersionsResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier>
    <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a359cb71b550000010e75728dd18211"/>
     <Version marker="0:2006-10-23 12:33:07.919">
      <label>Test</label>
     </Version>
     <CreationDate value="2006-10-23T12:33:07.920-05:00"/>
     <ModificationDate value="2006-10-23T12:42:31.240-05:00"/>
     <Title value="P01_AgeCalculations.str"/>
     <Description value="Modeler Stream Library: P1_AgeCalculations.str" language="en"/>
     <ResourcePath value="/ModelerStreamLibrary/Data Preparation/P01_AgeCalculations.str"
      hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <ObjectCreationDate value="2006-10-23T12:33:07.607-05:00"/>
     <ObjectLastModifiedBy value="admin"/>
     <ObjectLastModifiedDate value="2006-10-23T12:33:08.310-05:00"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
       <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
```

```
      </AccessControlEntry>
      <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
     </AccessControlList>
     <Author value="admin"/>
     <MimeType value="application/x-vnd.spss-clementine-stream"/>
     <ContentSize value="5003"/>
    </Resource>
   </ResourceSpecifier>
   <ResourceSpecifier>
    <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a359cb71b550000010e75728dd18211"/>
     <Version marker="1:2006-10-23 12:34:39.804">
      <label>Production</label>
     </Version>
     <CreationDate value="2006-10-23T12:34:39.803-05:00"/>
     <ModificationDate value="2006-10-23T12:42:32.147-05:00"/>
     <Title value="P01_AgeCalculations.str"/>
     <Description value="Modeler Stream Library: P1_AgeCalculations.str" language="en"/>
     <ResourcePath value="/ModelerStreamLibrary/Data Preparation/P01_AgeCalculations.str"
      hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <ObjectCreationDate value="2006-10-23T12:33:07.607-05:00"/>
     <ObjectLastModifiedBy value="admin"/>
     <ObjectLastModifiedDate value="2006-10-23T12:33:08.310-05:00"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
       <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlEntry>
      <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
     </AccessControlList>
     <Author value="admin"/>
     <MimeType value="application/x-vnd.spss-clementine-stream"/>
     <ContentSize value="4965"/>
    </Resource>
   </ResourceSpecifier>
  </getAllVersionsResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

# The getBinaryContent operation

This operation is for internal use only.

### *Input fields*

The following table lists the input fields for the getBinaryContent operation.

Table 4-26
*Fields for getBinaryContent*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | |

## The getBulkResourceMetadata operation

Retrieves an array of resources for a given array of uniform resource identifiers. The information returned may be limited to a select set of metadata.

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

### Input fields

The following table lists the input fields for the getBulkResourceMetadata operation.

Table 4-27
*Fields for getBulkResourceMetadata*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string[] | Array of resource URIs. |
| SelectedMetadata | SelectedMetadata | Provides a way to select specific metadata for retrieval or update |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the getBulkResourceMetadata operation.

Table 4-28
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### *Java example*

The following sample returns an array of ResourceSpecifier objects indicating who created each file in the *Data Understanding* folder.

```
String[] uri = {
  "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E01_FindDuplicates.str",
  "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E02_ExploreDataQuality.str",
  "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E03_VisualQuery.str"
};
SelectedMetadata sm = new SelectedMetadata();
sm.setMetadataBase(new CreatedBy());
ResourceSpecifier[] resourceSpec = stub.getBulkResourceMetadata(uri, sm, null);
for (int i = 0; i < resourceSpec.length; i++) {
   Resource resource = resourceSpec[i].getResource();
   System.out.println("Title: " + resource.getTitle().getValue());
   System.out.println("Created by: " + resource.getCreatedBy().getValue());
   System.out.println("");
}
```

### *SOAP request example*

Client invocation of the getBulkResourceMetadata operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
   <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
    soapenv:mustUnderstand="0"
    xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
    <wsse:UsernameToken>
     <wsse:Username>validUser</wsse:Username>
     <wsse:Password>password</wsse:Password>
    </wsse:UsernameToken>
   </wsse:Security>
   <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
    soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
   en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
   <getBulkResourceMetadata xmlns="http://xml.spss.com/repository/remote">
    <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E01_FindDuplicates.str</uri>
    <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E02_ExploreDataQuality.str</uri>
    <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding/E03_VisualQuery.str</uri>
    <SelectedMetadata xmlns="http://xml.spss.com/repository">
     <CreatedBy/>
    </SelectedMetadata>
    <ResourceRetrievalOptions xmlns="http://xml.spss.com/repository"/>
   </getBulkResourceMetadata>
 </soapenv:Body>
```

```
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getBulkResourceMetadata operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getBulkResourceMetadataResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource canWrite="true" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda812a"/>
     <Title value="E01_FindDuplicates.str"/>
     <ResourcePath value="/ModelerStreamLibrary/Data Understanding/E01_FindDuplicates.str"
      hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
       <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
        IsGroup="false"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="WRITE">
       <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
        IsGroup="false"/>
      </AccessControlEntry>
      <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
     </AccessControlList>
    </Resource>
   </ResourceSpecifier>
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource canWrite="true" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda80fd"/>
     <Title value="E02_ExploreDataQuality.str"/>
     <ResourcePath
      value="/ModelerStreamLibrary/Data Understanding/E02_ExploreDataQuality.str"
      hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
```

```
        <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
          IsGroup="false"/>
       </AccessControlEntry>
       <AccessControlEntry Permission="WRITE">
        <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
          IsGroup="false"/>
       </AccessControlEntry>
       <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlList>
     </Resource>
    </ResourceSpecifier>
    <ResourceSpecifier xmlns="http://xml.spss.com/repository">
     <Resource canWrite="true" canDelete="false" canModifyPermissions="false" xsi:type="File">
      <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda810a"/>
      <Title value="E03_VisualQuery.str"/>
      <ResourcePath value="/ModelerStreamLibrary/Data Understanding/E03_VisualQuery.str"
       hierarchyType="folder"/>
      <CreatedBy value="admin"/>
      <AccessControlList poe="CMOR">
       <AccessControlEntry Permission="READ">
        <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
          Name="$$security/everyoneGroup" IsGroup="true"/>
       </AccessControlEntry>
       <AccessControlEntry Permission="READ">
        <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
          IsGroup="false"/>
       </AccessControlEntry>
       <AccessControlEntry Permission="WRITE">
        <Principal ID="//uNative//validUser" DisplayName="validUser" Name="validUser"
          IsGroup="false"/>
       </AccessControlEntry>
       <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlList>
     </Resource>
    </ResourceSpecifier>
   </getBulkResourceMetadataResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

# The getChildren operation

Retrieves the immediate children of a specified parent. In addition, the operation allows the client to specify which metadata should be returned. Any metadata not requested that is not part of a collection will have a null value, so it should not attempt to be retrieved without checking for null or monitoring for a NullPointerException.

### *Input fields*

The following table lists the input fields for the getChildren operation.

Table 4-29
*Fields for getChildren*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the parent of the children to retrieve. |
| SelectedMetadata | SelectedMetadata | Provides a way to select specific metadata for retrieval or update |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### *Return information*

The following table identifies the information returned by the getChildren operation.

Table 4-30
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### *Java example*

The following example retrieves an array of all children of the folder *Data Understanding*, which would consist of both subfolders and files. The only optional metadata returned is the title of the child. It is not necessary to set values for the desired metadata, only to instantiate the objects. The ResourceRetrievalOptions object indicates that expired children should be included in the returned set.

```
String uri="spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding";
SelectedMetadata sm = new SelectedMetadata();
sm.setMetadataBase(new Title());
ResourceRetrievalOptions options = new ResourceRetrievalOptions();
options.setShowExpired(true);
ResourceSpecifier[] resources = stub.getChildren(uri, sm, options);
for (int i = 0; i < resources.length; i++) {
  Resource resource = resources[i].getResource();
  System.out.println(resource.getTitle().getValue());
}
```

### *SOAP request example*

Client invocation of the getChildren operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

```
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getChildren xmlns="http://xml.spss.com/repository/remote">
   <parentURI>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Understanding</parentURI>
   <SelectedMetadata xmlns="http://xml.spss.com/repository">
    <Title/>
   </SelectedMetadata>
   <ResourceRetrievalOptions showExpired="true" xmlns="http://xml.spss.com/repository"/>
  </getChildren>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getChildren operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getChildrenResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda812a"/>
     <Title value="E01_FindDuplicates.str"/>
     <ResourcePath value="/ModelerStreamLibrary/Data Understanding/E01_FindDuplicates.str"
      hierarchyType="folder"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
       <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlEntry>
      <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
     </AccessControlList>
    </Resource>
```

```
    </ResourceSpecifier>
    <ResourceSpecifier xmlns="http://xml.spss.com/repository">
     <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
      <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda80fd"/>
      <Title value="E02_ExploreDataQuality.str"/>
      <ResourcePath
       value="/ModelerStreamLibrary/Data Understanding/E02_ExploreDataQuality.str"
       hierarchyType="folder"/>
      <AccessControlList poe="CMOR">
       <AccessControlEntry Permission="READ">
        <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
         Name="$$security/everyoneGroup" IsGroup="true"/>
       </AccessControlEntry>
       <AccessControlEntry Permission="READ">
        <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
       </AccessControlEntry>
       <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlList>
     </Resource>
    </ResourceSpecifier>
    <ResourceSpecifier xmlns="http://xml.spss.com/repository">
     <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
      <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda810a"/>
      <Title value="E03_VisualQuery.str"/>
      <ResourcePath value="/ModelerStreamLibrary/Data Understanding/E03_VisualQuery.str"
       hierarchyType="folder"/>
      <AccessControlList poe="CMOR">
       <AccessControlEntry Permission="READ">
        <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
         Name="$$security/everyoneGroup" IsGroup="true"/>
       </AccessControlEntry>
       <AccessControlEntry Permission="READ">
        <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
       </AccessControlEntry>
       <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlList>
     </Resource>
    </ResourceSpecifier>
   </getChildrenResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

## The getChildrenOptions operation

Retrieves the immediate children of a specified parent that have a specific label or set of labels applied.

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

#### *Input fields*

The following table lists the input fields for the getChildrenOptions operation.

Table 4-31
*Fields for getChildrenOptions*

| Field | Type/Valid Values | Description |
|---|---|---|
| parentURI | string | URI for the parent of the children to retrieve. |
| ChildrenSpecification | ChildrenSpecification | Expresses search criteria for querying the repsoitory. |

#### *Return information*

The following table identifies the information returned by the getChildrenOptions operation.

Table 4-32
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

#### *Java example*

The following example retrieves an array of all children that have the label *TEST* from the folder *myFolder*.

```
IdentificationSpecifier folderId = getIdentificationSpecifier("/somefolder", HierarchyType.FOLDER);

ChildrenSpecification childSpec = new ChildrenSpecification();

Version version = new Version();
version.addLabel("TEST");
ConditionalTerm term = new ConditionalTerm();
term.setMetadata(version);
//only the EQUAL condition is supported
term.setCondition(QueryCondition.EQUAL);
childSpec.addTerm(term);

SelectedMetadata selectedMetadata = new SelectedMetadata();
childSpec.setSelectedMetadata(selectedMetadata);

ResourceSpecifier[] results = stub.getChildrenOptions(folderId, childSpec);
```

### *SOAP request example*

Client invocation of the getChildrenOptions operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getChildrenOptions xmlns="http://xml.spss.com/repository/remote">
   <parentURI>spsscr://pubslinux:18000/myFolder</parentURI>
   <ChildrenSpecification xmlns="http://xml.spss.com/repository">
    <term condition="equal" xsi:type="ConditionalTerm" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
     <metadata xsi:type="Version" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
      <label>TEST</label>
     </metadata>
    </term>
    <SelectedMetadata>
     <MetadataBase xsi:type="Version" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"/>
    </SelectedMetadata>
   </ChildrenSpecification>
  </getChildrenOptions>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getChildrenOptions operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getChildrenOptionsResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource isResourceLockingEnabled="true" canWrite="true" canDelete="true"
     canModifyPermissions="true" isOwner="true" canCreateNewVersion="true"
```

```
    isDeleted="false" xsi:type="File">
    <ResourceID value="0923d0b2b83629b3000001318aedb34c3d89"/>
    <Version marker="0:2011-08-29 15:37:27.867" latest="false">
     <label>TEST</label>
    </Version>
    <Title value="quarterly.rptdesign"/>
    <ResourcePath value="/myFolder/quarterly.rptdesign" hierarchyType="folder"/>
    <AccessControlList poe="CMOR">
     <AccessControlEntry Permission="READ">
      <Principal ID="//gNative//$$security/everyoneGroup"
       DisplayName="–everyone –" Name="$$security/everyoneGroup"
       IsGroup="true"/>
     </AccessControlEntry>
     <AccessControlEntry Permission="WRITE">
      <Principal ID="//gNative//$$security/everyoneGroup"
       DisplayName="–everyone –" Name="$$security/everyoneGroup"
       IsGroup="true"/>
     </AccessControlEntry>
     <AccessControlEntry Permission="READ">
      <Principal ID="//uNative//admin" DisplayName="admin" Name="admin"
       IsGroup="false"/>
     </AccessControlEntry>
     <owner ID="//uNative//admin" DisplayName="admin" Name="admin"
      IsGroup="false"/>
    </AccessControlList>
   </Resource>
</ResourceSpecifier>
<ResourceSpecifier xmlns="http://xml.spss.com/repository">
  <Resource isResourceLockingEnabled="true" canWrite="true" canDelete="true"
    canModifyPermissions="true" isOwner="true" canCreateNewVersion="true"
    isDeleted="false" xsi:type="File">
    <ResourceID value="0923d0b2b83629b3000001318aedb34c3d5a"/>
    <Version marker="1:2011-08-29 15:37:58.031" latest="true">
     <label>TEST</label>
    </Version>
    <Title value="monthly.rptdesign"/>
    <ResourcePath value="/myFolder/monthly.rptdesign" hierarchyType="folder"/>
    <AccessControlList poe="CMOR">
     <AccessControlEntry Permission="READ">
      <Principal ID="//gNative//$$security/everyoneGroup"
       DisplayName="–everyone –" Name="$$security/everyoneGroup"
       IsGroup="true"/>
     </AccessControlEntry>
     <AccessControlEntry Permission="WRITE">
      <Principal ID="//gNative//$$security/everyoneGroup"
       DisplayName="–everyone –" Name="$$security/everyoneGroup"
       IsGroup="true"/>
     </AccessControlEntry>
     <AccessControlEntry Permission="READ">
      <Principal ID="//uNative//admin" DisplayName="admin" Name="admin"
       IsGroup="false"/>
     </AccessControlEntry>
```

```
        <owner ID="//uNative//admin" DisplayName="admin" Name="admin"
          IsGroup="false"/>
       </AccessControlList>
      </Resource>
     </ResourceSpecifier>
    </getChildrenOptionsResponse>
   </soapenv:Body>
</soapenv:Envelope>
```

## The getFault operation

For internal use only. Consumers of the web service should not use this operation.

#### Input fields

The following table lists the input fields for the getFault operation.

Table 4-33
*Fields for getFault*

| Field | Type/Valid Values | Description |
|---|---|---|
| test | int | |

## The getFile operation

Retrieving a resource can be achieved in several ways: getResource, getFile, and getChildren. In all cases but getFile, only the metadata of the resource is returned. The getFile operation, on the other hand, returns the metadata as well as an InputStream (indirectly) to the content. The specific version of the file, both metadata and content, may be retrieved through the version information included in the URI. If the version information is absent, the most current version will be returned. The version can be specified by either marker or label. If the version does not exist, an exception is thrown.

The file content can be delivered directly (BASE64), or as an attachment (MIME or DIME). To optimize performance, only use BASE64 for small files.

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

### Input fields

The following table lists the input fields for the getFile operation.

Table 4-34
*Fields for getFile*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for a file resource. |
| DeliveryType | DeliveryType | Defines an enumeration that identifies accepted methods of delivery to retrieve binary content. |
| SelectedMetadata | SelectedMetadata | Provides a way to select specific metadata for retrieval or update |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the getFile operation.

Table 4-35
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### Java example

The following sample retrieves the file *P01_AgeCalculations.str* from the repository, writing it the folder *myOutput* in the file system.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
ResourceSpecifier rs = stub.getFile(uri, DeliveryType.MIME, null, null);
File f = (File)rs.getResource();
System.out.println("Title: " + f.getTitle().getValue());
System.out.println("ID: " + f.getResourceID().getValue());
System.out.println("Version marker: " + f.getVersion().getMarker());

Attachment at = f.getBinaryContent().getAttachment();
String href = at.getHref();
org.apache.axis.client.Stub st = (org.apache.axis.client.Stub)stub;
AttachmentPart[] attachments = (AttachmentPart[])st.getAttachments();
if (attachments.length != 0){
  AttachmentPart ap = null;
  boolean bAttFound = false;
  for (int i = 0; i < attachments.length; i++) {
    ap = attachments[i];
    if ( ap.getContentId().equals(href)) {
```

```
        bAttFound = true;
        break;
      }
    }
    if (bAttFound) {
      java.io.File fo = new java.io.File("c:\\myOutput\\P01_AgeCalculations.str");
      FileOutputStream out = new FileOutputStream(fo);
      DataHandler dh = ap.getDataHandler();
      InputStream in = dh.getInputStream();
      byte[] buffer = new byte[256];
      int bytesRead = 0;
      while (true) {
        bytesRead = in.read(buffer);
        if (bytesRead == -1) {
          break;
        }
        out.write(buffer, 0, bytesRead);
      }
      out.close();
      in.close();
    }
  }
```

### *SOAP request example*

Client invocation of the getFile operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getFile xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</uri>
   <DeliveryType xmlns="http://xml.spss.com/repository">MIME</DeliveryType>
  </getFile>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getFile operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getFileResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda80b2"/>
     <Version marker="0:2006-11-02 09:53:33.875"/>
     <CreationDate value="2006-11-02T09:53:33.877-06:00"/>
     <ModificationDate value="2006-11-02T09:53:34.047-06:00"/>
     <Title value="P01_AgeCalculations.str"/>
     <Description
      value="Modeler Stream Library: P1_AgeCalculations.str -&#x2013; Derive current age and age at joining"
      language="en"/>
     <ResourcePath value="/ModelerStreamLibrary/Data Preparation/P01_AgeCalculations.str"
      hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <ObjectCreationDate value="2006-11-02T09:53:33.780-06:00"/>
     <ObjectLastModifiedBy value="admin"/>
     <ObjectLastModifiedDate value="2006-11-02T09:53:34.030-06:00"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
       <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlEntry>
      <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
     </AccessControlList>
     <Author value="admin"/>
     <MimeType value="application/x-vnd.spss-clementine-stream"/>
     <ContentSize value="4969"/>
     <BinaryContent>
      <Attachment href="698F46E26D4CBE0DDA6E04CD7328C242"/>
     </BinaryContent>
    </Resource>
   </ResourceSpecifier>
  </getFileResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

# The getResource operation

Returns all metadata describing a resource. In contrast, the getChildren operation returns a selected subset of metadata. To obtain content for a resource, use getFile.

The metadata for a specific version of a resource may be specified by specifying a version in the URI. If the version information is absent, the most current version will be returned. The version can be specified by either marker or label. If the version does not exist, an exception will be thrown.

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

### Input fields

The following table lists the input fields for the getResource operation.

Table 4-36
*Fields for getResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for a resource. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the getResource operation.

Table 4-37
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### Java example

The following sample displays information about the resource at the supplied URL.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
ResourceSpecifier resourceSpecifier = stub.getResource(uri, null);
Resource resource = resourceSpecifier.getResource();
System.out.println("Title: " + resource.getTitle().getValue());
System.out.println("ID: " + resource.getResourceID().getValue());
System.out.println("Version marker: " + resource.getVersion().getMarker());
```

### *SOAP request example*

Client invocation of the getResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getResource xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</uri>
  </getResource>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getResourceResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource canWrite="false" canDelete="false" canModifyPermissions="false" xsi:type="File">
     <ResourceID value="0a0a4a35d98ee53f0000010ea9597eda80b2"/>
     <Version marker="0:2006-11-02 09:53:33.875"/>
     <CreationDate value="2006-11-02T09:53:33.877-06:00"/>
     <ModificationDate value="2006-11-02T09:53:34.047-06:00"/>
```

```
        <Title value="P01_AgeCalculations.str"/>
        <Description
         value="Modeler Stream Library: P1_AgeCalculations.str -&#x2013; Derive current age and age at joining"
         language="en"/>
        <ResourcePath value="/ModelerStreamLibrary/Data Preparation/P01_AgeCalculations.str"
         hierarchyType="folder"/>
        <CreatedBy value="admin"/>
        <ObjectCreationDate value="2006-11-02T09:53:33.780-06:00"/>
        <ObjectLastModifiedBy value="admin"/>
        <ObjectLastModifiedDate value="2006-11-02T09:53:34.030-06:00"/>
        <AccessControlList poe="CMOR">
         <AccessControlEntry Permission="READ">
          <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
           Name="$$security/everyoneGroup" IsGroup="true"/>
         </AccessControlEntry>
         <AccessControlEntry Permission="READ">
          <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
         </AccessControlEntry>
         <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
        </AccessControlList>
        <Author value="admin"/>
        <MimeType value="application/x-vnd.spss-clementine-stream"/>
        <ContentSize value="4969"/>
       </Resource>
      </ResourceSpecifier>
     </getResourceResponse>
    </soapenv:Body>
</soapenv:Envelope>
```

## The getResourceSnapshot operation

Retrieves a snapshot of a resource generated as a result of a resource transfer request. Note that this is a blocking call and will hold on to the SOAP connection until the export file is created on the server.

### Input fields

The following table lists the input fields for the getResourceSnapshot operation.

Table 4-38
*Fields for getResourceSnapshot*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |
| DeliveryType | DeliveryType | Defines an enumeration that identifies accepted methods of delivery to retrieve binary content. |

### *Java example*

The following sample retrieves the result of the transfer with identifer *transferId*.

```
stub.getResourceSnapshot(transferId, DeliveryType.MIME);
```

### *SOAP request example*

Client invocation of the getResourceSnapshot operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>Native/validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getResourceSnapshot xmlns="http://xml.spss.com/repository/remote">
   <ns2:TransferIdentifier engineVersion="1.0" xmlns:ns2="http://xml.spss.com/repository"
    >5fhcf631h6</ns2:TransferIdentifier>
   <ns3:DeliveryType xmlns:ns3="http://xml.spss.com/repository">MIME</ns3:DeliveryType>
  </getResourceSnapshot>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getResourceSnapshot operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getResourceSnapshotResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

# The getResourceWithLock operation

Checks if a resource is locked, and if not, creates a lock for the resource, returning the resource to the caller. The lock remains until a call is made to unlock it. An exception is thrown if the resource is already locked.

### Input fields

The following table lists the input fields for the getResourceWithLock operation.

Table 4-39
*Fields for getResourceWithLock*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for a resource. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the getResourceWithLock operation.

Table 4-40
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

### SOAP request example

Client invocation of the getResourceWithLock operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
```

```
 <soapenv:Body>
  <getResourceWithLock xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/Statistics/tree_model.sps</uri>
  </getResourceWithLock>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getResourceWithLock operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
 </soapenv:Header>
 <soapenv:Body>
  <getResourceWithLockResponse xmlns="http://xml.spss.com/repository/remote">
   <ResourceSpecifier xmlns="http://xml.spss.com/repository">
    <Resource isLockOwner="true" canWrite="true" canDelete="true" canModifyPermissions="true"
     xsi:type="File">
     <ResourceID value="0a0a4a3535482fb800000116a585d52081a3"/>
     <Version marker="0:2007-12-04 15:20:58.669"/>
     <CreationDate value="2007-12-04T15:20:58.670-06:00"/>
     <ModificationDate value="2007-12-04T15:20:58.670-06:00"/>
     <Title value="tree_model.sps"/>
     <ResourcePath value="/Statistics/tree_model.sps" hierarchyType="folder"/>
     <CreatedBy value="admin"/>
     <ObjectCreationDate value="2007-12-04T15:20:58.590-06:00"/>
     <ObjectLastModifiedBy value="admin"/>
     <ObjectLastModifiedDate value="2007-12-04T15:20:59.203-06:00"/>
     <AccessControlList poe="CMOR">
      <AccessControlEntry Permission="READ">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="WRITE">
       <Principal ID="//gNative//$$security/everyoneGroup" DisplayName="–everyone –"
        Name="$$security/everyoneGroup" IsGroup="true"/>
      </AccessControlEntry>
      <AccessControlEntry Permission="READ">
```

```
        <Principal ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
       </AccessControlEntry>
       <owner ID="//uNative//admin" DisplayName="admin" Name="admin" IsGroup="false"/>
      </AccessControlList>
      <Author value="admin"/>
      <MimeType value="application/x-vnd.spss-spss-syntax"/>
      <ContentSize value="682"/>
     </Resource>
    </ResourceSpecifier>
   </getResourceWithLockResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

# The getTransferResults operation

Retrieves the transfer conflict information for a resource transfer.

### Input fields

The following table lists the input fields for the getTransferResults operation.

Table 4-41
*Fields for getTransferResults*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |
| TransferResultSelector | TransferResultSelector | Defines a selection criterion for the results generated during transferring activities. |

### Return information

The following table identifies the information returned by the getTransferResults operation.

Table 4-42
*Return Value*

| Type | Description |
|---|---|
| pageResult | Results of a search request to the search2.5 mechanism. This may either be an initial search based on any criterion, or a subsequent search for another page. |

### Java example

To retrieve the conflict resolution table for a transfer:

1. Create a TransferResultSelector object.
2. Create a TransferConflictCriterion object.

3. Create a Filter object. Define the filter characteristics as needed. An empty filter yields the first page of results.
4. Assign the filter to the cireterion using the setFilter method.
5. Define the page size, sort column, and sort order for the results using the setPageSize, setSortColumn, and setSortOrder methods for the criterion.
6. Assign the criterion to the selector using the setPageSelector method.
7. Provide the getTransferResults operation with the transfer identifier and the selector.

   The following sample returns the first 10 conflicts for the transfer with the identifier of *transferId*.

```
TransferResultSelector selector = new TransferResultSelector();
TransferConflictCriterion criterion = new TransferConflictCriterion();
Filter filter = new Filter();
criterion.setFilter(filter);
criterion.setPageSize(10);
criterion.setSortColumn("$$repository/conflict_res_source_path");
criterion.setSortOrder(PageSelectorSortOrderType.DESCENDING);
selector.setPageSelector(criterion);
PageResult pageResult = stub.getTransferResults(transferId, selector);
```

   To return subsequent result pages:

1. Return the navigator for the page result using the getNavigator method.
2. Return a NavigatorItem object from the navigator using the getNext method.
3. Create a TransferConflictCriterion object.
4. Create a PageRequest object.
5. Define the client key, an internal identifier used to synchronize requests for specific pages, using the setClientKey method.
6. Specify the starting row for the results to return by supplying the setStartingRow method with a selector obtained from the navigator item.
7. Assign the page request to the criterion using the setPageRequest method.
8. Assign the criterion to the results selector using the setPageSelector method.
9. Provide the getTransferResults operation with the transfer identifier and the selector.

```
NavigatorItem next = pageResult.getNavigator().getNext();
TransferConflictCriterion criterion = new TransferConflictCriterion();
PageRequest pageRequest = new PageRequest();
pageRequest.setClientKey(clientKey);
pageRequest.setStartingRow(next.getSelector());
criterion.setPageRequest(pageRequest);
selector.setPageSelector(criterion);
pageResult = contentRepository.getTransferResults(transferId, selector);
```

To resolve conflicts, use the applyTransferPolicy operation.

### *SOAP request example*

Client invocation of the getTransferResults operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getTransferResults xmlns="http://xml.spss.com/repository/remote">
   <ns2:TransferIdentifier engineVersion="2.0" xmlns:ns2="http://xml.spss.com/repository"
    >60317814c6</ns2:TransferIdentifier>
   <ns3:TransferResultSelector xmlns:ns3="http://xml.spss.com/repository">
    <ns3:PageSelector sortColumn="$$repository/conflict_res_source_path" sortOrder="ascending"
     pageSize="9" xsi:type="TransferConflictCriterion">
     <ns3:Filter/>
    </ns3:PageSelector>
   </ns3:TransferResultSelector>
  </getTransferResults>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a getTransferResults operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getTransferResultsResponse xmlns="http://xml.spss.com/repository/remote">
   <pageResult hitCount="3" pageSize="9" pageNumber="1" clientKey="6031781dg1"
    sortColumn="$$repository/conflict_res_source_path" sortOrder="ascending"
    xmlns="http://www.spss.com/pes/pager">
    <column display="Source Path" fieldName="$$repository/conflict_res_source_path"
```

```
 colType="string"/>
<column display="Source Hierarchy" fieldName="$$repository/conflict_res_source_hierarchy"
 colType="string"/>
<childColumn display="Conflict" fieldName="$$repository/conflict_res_conflict"
 colType="string"/>
<childColumn display="Destination Path" fieldName="$$repository/conflict_res_dest_path"
 colType="string"/>
<childColumn display="Marker" fieldName="$$repository/conflict_res_marker" colType="string"/>
<childColumn display="Additional Info" fieldName="$$repository/conflict_res_add_info"
 colType="string"/>
<row rowNumber="1" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b854e"
 objectID="0a0a4a356c24e80b0000011585ab4a0b854e">
 <cell>
  <value>
   <display xmlns="">/Jobs</display>
   <rawString xmlns="">/Jobs</rawString>
  </value>
 </cell>
 <cell>
  <value>
   <display xmlns="">Folder</display>
   <rawString xmlns="">folder</rawString>
  </value>
 </cell>
 <childRow rowNumber="1" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b854e">
  <cell>
   <value>
    <display xmlns="">Duplicate ID</display>
    <rawString xmlns="">$$repository/conflict_duplicate_id</rawString>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns="">/Jobs</display>
    <rawString xmlns="">/Jobs</rawString>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns=""/>
    <rawString xmlns=""/>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns=""/>
    <rawString xmlns=""/>
   </value>
  </cell>
 </childRow>
</row>
<row rowNumber="2" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8562"
```

```
 objectID="0a0a4a356c24e80b0000011585ab4a0b8562">
 <cell>
  <value>
   <display xmlns="">/Jobs/January</display>
   <rawString xmlns="">/Jobs/January</rawString>
  </value>
 </cell>
 <cell>
  <value>
   <display xmlns="">Folder</display>
   <rawString xmlns="">folder</rawString>
  </value>
 </cell>
 <childRow rowNumber="1" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8562">
  <cell>
   <value>
    <display xmlns="">Duplicate ID</display>
    <rawString xmlns="">$$repository/conflict_duplicate_id</rawString>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns="">/Jobs/January</display>
    <rawString xmlns="">/Jobs/January</rawString>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns=""/>
    <rawString xmlns=""/>
   </value>
  </cell>
  <cell>
   <value>
    <display xmlns=""/>
    <rawString xmlns=""/>
   </value>
  </cell>
 </childRow>
</row>
<row rowNumber="3" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8551"
 objectID="0a0a4a356c24e80b0000011585ab4a0b8551">
 <cell>
  <value>
   <display xmlns="">/Jobs/Results</display>
   <rawString xmlns="">/Jobs/Results</rawString>
  </value>
 </cell>
 <cell>
  <value>
   <display xmlns="">Folder</display>
   <rawString xmlns="">folder</rawString>
```

```
      </value>
     </cell>
     <childRow rowNumber="1" uri="spsscr:///?id=0a0a4a356c24e80b0000011585ab4a0b8551">
      <cell>
       <value>
        <display xmlns="">Duplicate ID</display>
        <rawString xmlns="">$$repository/conflict_duplicate_id</rawString>
       </value>
      </cell>
      <cell>
       <value>
        <display xmlns="">/Jobs/Results</display>
        <rawString xmlns="">/Jobs/Results</rawString>
       </value>
      </cell>
      <cell>
       <value>
        <display xmlns=""/>
        <rawString xmlns=""/>
       </value>
      </cell>
      <cell>
       <value>
        <display xmlns=""/>
        <rawString xmlns=""/>
       </value>
      </cell>
     </childRow>
    </row>
    <navigator>
     <page display="1" selector="1" current="true" xmlns=""/>
    </navigator>
   </pageResult>
  </getTransferResultsResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

# The getTransferStatus operation

Retrieves status information for a resource transfer.

### *Input fields*

The following table lists the input fields for the getTransferStatus operation.

Table 4-43
*Fields for getTransferStatus*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferIdentifier | TransferIdentifier | Unique identifier of the resource transfer. |

#### *Return information*

The following table identifies the information returned by the getTransferStatus operation.

Table 4-44
*Return Value*

| Type | Description |
|---|---|
| TransferStatus | Provides status and progress information for the resource transfer. |

#### *Java example*

The following sample uses a try...catch statement to report on transfer status. Within the try block, the getTransferStatus operation returns the current TransferStatus object for the transfer corresponding to *transferId*, the identifier returned by the transferResource operation. The getTransferState method returns the state of the transfer. If the transfer has not completed, try block reports the resource currently being transferred.

```
try {
 TransferStatus transferStatus = stub.getTransferStatus(transferId);
 TransferState transferState = transferStatus.getTransferState();
 while (!transferState.equals(TransferState.COMPLETED)) {
  Identifier identifier = transferStatus.getCurrentIdentifier();
  if (identifier != null) {
   System.out.println("Transferring " + identifier.getValue());
  } else {
   System.out.println("Preparing to transfer resource...");
  }
  Thread.sleep(5000);
  transferStatus = stub.getTransferStatus(transferId);
  transferState = transferStatus.getTransferState();
  }
} catch (RepositoryException repositoryException) {
 // handle transfer failure
}
```

#### *SOAP request example*

Client invocation of the getTransferStatus operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
```

```
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
    xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <getTransferStatus xmlns="http://xml.spss.com/repository/remote">
   <ns2:TransferIdentifier engineVersion="2.0"
      xmlns:ns2="http://xml.spss.com/repository">603g8a7ah7</ns2:TransferIdentifier>
  </getTransferStatus>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a getTransferStatus operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getTransferStatusResponse xmlns="http://xml.spss.com/repository/remote">
   <TransferStatus transferState="running"
    currentProcess="$$repository/transfer_export_xmi_process"
    xmlns="http://xml.spss.com/repository">
    <currentIdentifier value="/Jobs/January" hierarchyType="folder" xsi:type="ResourcePath"/>
   </TransferStatus>
  </getTransferStatusResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The getVersion operation*

Returns the version number of the service.

#### *Return information*

The following table identifies the information returned by the getVersion operation.

Table 4-45
*Return Value*

| Type | Description |
|---|---|
| string | The version of the web service. |

#### *Java example*

To access the version number of the service, call the getVersion operation from the service stub.

```
System.out.println("Service Version =  " + stub.getVersion());
```

#### *SOAP request example*

Client invocation of the getVersion operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getVersion xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a getVersion operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getVersionResponse xmlns="http://xml.spss.com/repository/remote">
   <version>4.20.000</version>
  </getVersionResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The getVersionLabels operation*

Returns a list of version labels for a specified resource.

#### *Input fields*

The following table lists the input fields for the getVersionLabels operation.

Table 4-46
*Fields for getVersionLabels*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string | URI for a resource. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### *Return information*

The following table identifies the information returned by the getVersionLabels operation.

Table 4-47
*Return Value*

| Type | Description |
|---|---|
| string[] | Version labels for the resource. |

### *Java example*

The following example returns an array of strings containing the labels for the file *P01_AgeCalculations.str*.

```
String url = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
String[] result = stub.getVersionLabels(url, null);
System.out.println("Labels:");
for (int i = 0; i < result.length; i++) {
  System.out.println(result[i]);
}
```

### *SOAP request example*

Client invocation of the getVersionLabels operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
```

```
 </soapenv:Header>
 <soapenv:Body>
  <getVersionLabels xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</uri>
  </getVersionLabels>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a getVersionLabels operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <getVersionLabelsResponse xmlns="http://xml.spss.com/repository/remote">
   <labels>Test</labels>
   <labels>Production</labels>
  </getVersionLabelsResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The lockResource operation*

Locks a resource, preventing another user from making changes. The resource remains locked until a call is made to unlock the resource. An exception is thrown if an attempt is made to lock a resource that is already locked.

#### *Input fields*

The following table lists the input fields for the lockResource operation.

Table 4-48
*Fields for lockResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string | URI for the resource to lock. |

#### *Java example*

The following sample locks the job *Results* at the specified location.

```
String uri = "spsscr://pes_server:80/Jobs/Results";
stub.lockResource(uri);
```

#### *SOAP request example*

Client invocation of the lockResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">admin</wsse:Username>
    <wsse:Password xsi:type="xsd:string">spss</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <lockResource xmlns="http://xml.spss.com/repository/remote">
   <targetURI>spsscr://localhost:8080/Jobs/Results</targetURI>
  </lockResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a lockResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <lockResourceResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The lockResources operation*

Locks multiple resources, preventing another user from making changes. A resource remains locked until a call is made to unlock the resource. An exception is thrown if an attempt is made to lock a resource that is already locked.

### *Input fields*

The following table lists the input fields for the lockResources operation.

Table 4-49
*Fields for lockResources*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string[] | Array of URIs for the resource to lock. |

### *SOAP request example*

Client invocation of the lockResources operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <lockResources xmlns="http://xml.spss.com/repository/remote">
   <targetURI>spsscr://localhost:8080/SPV/factor_c_09.spv</targetURI>
   <targetURI>spsscr://localhost:8080/SPV/multresponse_bod_02.spv</targetURI>
   <targetURI>spsscr://localhost:8080/SPV/regression_c_07.spv</targetURI>
  </lockResources>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a lockResources operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
```

```
    xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
    <wsse:UsernameToken>
      <wsse:Username>validUser</wsse:Username>
      <wsse:Password>password</wsse:Password>
    </wsse:UsernameToken>
  </wsse:Security>
 </soapenv:Header>
 <soapenv:Body>
  <lockResourcesResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

# The moveResource operation

Moves a resource to a specified parent. The resource version can be specified in the resource URI. If there is an attempt to move the resource to a topic or a file parent, an exception is thrown. The object being moved maintains the same object identifier, as well as all other metadata.

### Input fields

The following table lists the input fields for the moveResource operation.

Table 4-50
*Fields for moveResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetParentURI | string | URI for the destination of the move. |
| sourceURI | string | URI for the resource being moved. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Java example

The following example moves the file *P03_CombineFilters.str* to the folder *Streams*.

```
String tgtParent = "spsscr://pes_server:80/Streams";
String source = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P03_CombineFilters.str";
stub.moveResource(tgtParent, source, null);
```

### SOAP request example

Client invocation of the moveResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <moveResource xmlns="http://xml.spss.com/repository/remote">
   <targetParentURI>spsscr://pes_server:80/Streams</targetParentURI>
   <sourceURI>
    spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P03_CombineFilters.str</sourceURI>
  </moveResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a moveResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <moveResourceResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The query operation*

This operation is for internal use only and has been deprecated. Consumers of the web service wishing to search for resources should use the Search service instead of this operation.

The query operation provides a way to search for and retrieve resources from the repository. Much like getChildren, this operation allows the client to specify which metadata should be returned in the resources. Any metadata not requested that is not part of a collection will have a

null value, so it should not attempt to be retrieved without checking for null or monitoring for a NullPointerException. The query specification includes the following information:

- **Scope.** The type of objects to be searched. Specify either resource, file, folder, or topic. The search can be restricted to particular file types by specifying a MIME type.
- **Terms.** An ordered list of conditions and predicates used to build the query. The server processes the terms in the order specified.
- **Selected metadata.** Metadata included in the resources that are returned as a result of running the query. To get all metadata, specify null.

By default, the query operation returns the latest version of a resource. To return another version, specify a version in a conditional term. Set either the marker or the label to the desired version. Alternatively, query can also be used to return all versions of a resource. This can be accomplished by specifying a version in a conditional term and leaving both the marker and label null.

By specifying a version in the selected metadata, the caller will receive version information with each resource that is returned. By also specifying a specific marker in the conditional term, the caller will obtain an array of all labels in the version object in the returned resource. If the caller leaves the marker and label null in the conditional term, a resource for each version (each marker) will be returned. By examining each of these resources, the caller can derive a list of all labels for a given object (all versions of the object).

The information returned by this operation corresponds to resource versions that are visible for the credentials used in the web service call. Visibility depends on both label security and expiration settings.

- Expired versions are visible only to the resource owner and administrators.
- If the credentials are associated with the *Show All Versions* action or correspond to the owner of the resource, all versions of the file are visible. However, all of the labels may not be visible. Users with these credentials can also see and use the *LATEST* label on the resource.
- If the credentials are not associated with the *Show All Versions* action or do not correspond to the owner of the resource, only labeled resource versions are visible. Users with these credentials can see the *LATEST* version only if they have *Show Latest* action.

#### *Input fields*

The following table lists the input fields for the query operation.

Table 4-51
*Fields for query*

| Field | Type/Valid Values | Description |
|---|---|---|
| QuerySpecification | QuerySpecification | Expresses search criteria for querying the repsoitory. |

#### *Return information*

The following table identifies the information returned by the query operation.

Table 4-52
*Return Value*

| Type | Description |
|---|---|
| ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |

# The removeLabel operation

Removes a designated label from a specified version of a resource. If the URI for the resource includes a timestamp marker, the label must correspond to that version of the resource. If the URI omits version information, the operation attempts to remove the label from the latest version of the resource.

### Input fields

The following table lists the input fields for the removeLabel operation.

Table 4-53
*Fields for removeLabel*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string | URI for the resource version. |
| label | string | The label to be removed. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

### Return information

The following table identifies the information returned by the removeLabel operation.

Table 4-54
*Return Value*

| Type | Description |
|---|---|
| string | URI for the resource. |

### Java example

The following sample removes the label *Production* for the latest version of the file *P01_AgeCalculations.str*.

```
String uri = "spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str";
String label = "Production";
String result = stub.removeLabel(uri, label, null);
```

#### *SOAP request example*

Client invocation of the removeLabel operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
  xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <removeLabel xmlns="http://xml.spss.com/repository/remote">
   <targetURI>
    spsscr://pes_server:80/ModelerStreamLibrary/Data%20Preparation/P01_AgeCalculations.str</targetURI>
   <label>Production</label>
  </removeLabel>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a removeLabel operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <removeLabelResponse xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr:///?id=0a0a4a359cb71b550000010e75728dd18211#m.1:2006-10-23%2012:34:39.804</uri>
  </removeLabelResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The runCqlQuery operation*

This operation is for internal use only.

#### Input fields

The following table lists the input fields for the runCqlQuery operation.

Table 4-55
*Fields for runCqlQuery*

| Field | Type/Valid Values | Description |
|---|---|---|
| QueryCqlSpecification | QueryCqlSpecification | Expresses search criteria for querying the repsoitory. |

#### Return information

The following table identifies the information returned by the runCqlQuery operation.

Table 4-56
*Return Value*

| Type | Description |
|---|---|
| QueryCqlResult | Result of the cql query. |

## The setBulkResourceMetadata operation

Assigns a set of metadata values to a list of specified resources. All specified files or file versions will end up with the same specified metadata.

#### Input fields

The following table lists the input fields for the setBulkResourceMetadata operation.

Table 4-57
*Fields for setBulkResourceMetadata*

| Field | Type/Valid Values | Description |
|---|---|---|
| uri | string[] | Array of resource URIs. |
| ResourceSpecifier | ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |
| SelectedMetadata | SelectedMetadata | Provides a way to select specific metadata for retrieval or update |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

#### Return information

The following table identifies the information returned by the setBulkResourceMetadata operation.

Table 4-58
*Return Value*

| Type | Description |
|---|---|
| string[] | Array of resource URIs. |

### *Java example*

The following sample updates the descriptions for three file resources.

```
String[] uri = {
 "spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str",
 "spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03a_ClusterProfilesKohonen.str",
 "spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M08_PropensityClustering.str"
};
ResourceSpecifier rs = new ResourceSpecifier();
Resource resource = new Resource();
rs.setResource(resource);
File f = (File)rs.getResource();
Description desc = new Description();
desc.setValue("Clustering Model");
f.setDescription(desc);
SelectedMetadata sm = new SelectedMetadata();
sm.setMetadataBase(new Description());
String[] result = stub.setBulkResourceMetadataResponse(uri, rs, sm, null);
```

### *SOAP request example*

Client invocation of the setBulkResourceMetadata operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <setBulkResourceMetadata xmlns="http://xml.spss.com/repository/remote">
   <uri>
    spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str</uri>
   <uri>
```

```
    spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03a_ClusterProfilesKohonen.str</uri>
   <uri>
    spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M08_PropensityClustering.str</uri>
   <ns3:ResourceSpecifier xmlns:ns3="http://xml.spss.com/repository">
    <ns3:Resource xsi:type="File">
     <ns3:Description value="Clustering Model"/>
    </ns3:Resource>
   </ns3:ResourceSpecifier>
   <SelectedMetadata xmlns="http://xml.spss.com/repository">
    <Description/>
   </SelectedMetadata>
  </setBulkResourceMetadata>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a setBulkResourceMetadata operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <setBulkResourceMetadataResponse xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8403</uri>
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8392</uri>
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda82e8</uri>
  </setBulkResourceMetadataResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The transferResource operation*

Transfers resources between different content repositories.

#### *Input fields*

The following table lists the input fields for the transferResource operation.

Table 4-59
*Fields for transferResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| TransferSpecification | TransferSpecification | Defines a specification for transferring resources between two different instances of the content repository |

### *Return information*

The following table identifies the information returned by the transferResource operation.

Table 4-60
*Return Value*

| Type | Description |
|---|---|
| TransferIdentifier | Unique identifier of the resource transfer. |

### *Java example*

The transferResource operation provides the ability to both export and import resources. The general process involves the following steps:

1. Initiate the transfer using the transferResource operation.
2. Monitor the status of the transfer using the getTransferStatus operation.
3. When exporting, get the export results as an attachment using the getResourceSnapshot operation.
4. Release system resources used for the transfer using the disposeTransfer operation.

The service exports resources in the form of MIME or DIME attachments. To export resources from the repository to an export file:

1. Create a TransferSpecification object.
2. For handling of transfer conflicts, set the transfer enginve version to *2.0* using the setEngineVersion method.
3. Create a TransferSpecifier object for the source.
4. Create a ResourcePath object. Specify the properties of the path for the resources to export using the setValue and setHierarchyType methods. Assign the resource path to the source specifier using the setResourcePath method.
5. Create an ExportPolicy object for the source. Use the setExternalReferences method to define whether or not any resources located outside of the selected hierarchy but referenced by the other exported resources should be included in the transfer. Assign the policy to the source specifier using the addTransferPolicy method.
6. Assign the source to the transfer specification using the setTransferSource method.
7. Create a TransferSpecifier object for the target and assign it to the transfer specification using the setTransferTarget method.
8. Provide the transferResource operation with the transfer specification. The returned TransferIdentifier value-object can be used to monitor the current status of the transfer asynchronously.

The code sample below exports the contents of the *Jobs* folder.

```
TransferSpecification transferSpec = new TransferSpecification();
transferSpec.setEngineVersion("2.0");

TransferSpecifier source = new TransferSpecifier();

ResourcePath sourceResourcePath = new ResourcePath();
sourceResourcePath.setValue("/Jobs");
sourceResourcePath.setHierarchyType(HierarchyType.FOLDER);
source.setResourcePath(sourceResourcePath);

ExportPolicy exportPolicy = new ExportPolicy();
exportPolicy.setExternalReferences(true);
source.addTransferPolicy(exportPolicy);

transferSpec.setTransferSource(source);

TransferSpecifier target = new TransferSpecifier();
transferSpec.setTransferTarget(target);

TransferIdentifier transferId = stub.transferResource(transferSpec);
```

Note that exporting large folders in enterprise environments can take hours or days and may require significant system resources.

To import resources from an export file into the repository:

1. Create a TransferSpecification object.
2. Create a TransferSpecifier object for the source. The resource snapshot of the content being imported is sent as a SOAP attachment so an empty source object specifier is sufficient. Assign it to the transfer specification using the setTransferSource method.
3. Create a TransferSpecifier object for the target.
4. Create a ResourcePath object. Specify an existing folder into which the source resources should be imported using the setValue method. Assign the resource path to the target specifier using the setResourcePath method.
5. Create an ImportPolicy object for the target. Possible policies include AppendImportPolicy (add new versions to the resource in the target), NoChangeImportPolicy (do not create any new versions if resource already exists in the target), OverwriteImportPolicy (delete existing versions in target and replace them with imported versions), and ConflictResolutionImportPolicy (generate custom conflict resolution tables for subsequent processing). Assign the policy to the target specifier using the addTransferPolicy method.
6. Assign the target to the transfer specification using the setTransferTarget method.
7. Add the resource snapshot as a SOAP attachment for the operation request.
8. Provide the transferResource operation with the transfer specification. The returned TransferIdentifier value-object can be used to monitor the current status of the transfer asynchronously.

The code sample below imports the contents of the *JobsExport.pes* file, generating a conflict resolution table to identify problems.

```
TransferSpecification transferSpec = new TransferSpecification();

TransferSpecifier source = new TransferSpecifier();
transferSpec.setTransferSource(source);

TransferSpecifier target = new TransferSpecifier();
ResourcePath targetResourcePath = new ResourcePath();
targetResourcePath.setValue("/");
target.setResourcePath(targetResourcePath);

ConflictResolutionImportPolicy conflictPolicy = new ConflictResolutionImportPolicy();
ResourcePath policyPath = new ResourcePath();
policyPath.setHierarchyType(HierarchyType.FOLDER);
conflictPolicy.setResourceIdentifier(policyPath);
target.addTransferPolicy(conflictPolicy);

transferSpec.setTransferTarget(target);

FileDataSource fileDataSource = new FileDataSource("c:/temp/JobsExport.pes");
DataHandler dataHandler = new DataHandler(fileDataSource);
AttachmentPart attachmentPart = new org.apache.axis.attachments.AttachmentPart();
attachmentPart.setDataHandler(dataHandler);
((Stub) contentRepository).addAttachment(attachmentPart);

TransferIdentifier transferIdentifier =  stub.transferResource(transferSpec);
```

### *SOAP request example*

Client invocation of the transferResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <transferResource xmlns="http://xml.spss.com/repository/remote">
   <ns2:TransferSpecification engineVersion="2.0" xmlns:ns2="http://xml.spss.com/repository">
```

```
      <ns2:TransferSource>
        <ns2:ResourcePath value="/Jobs" hierarchyType="folder"/>
        <ns2:TransferPolicy externalReferences="true" xsi:type="ExportPolicy"/>
      </ns2:TransferSource>
      <ns2:TransferTarget/>
    </ns2:TransferSpecification>
  </transferResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a transferResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <transferResourceResponse xmlns="http://xml.spss.com/repository/remote">
   <TransferIdentifier engineVersion="2.0"
     xmlns="http://xml.spss.com/repository">603g8a7ah7</TransferIdentifier>
  </transferResourceResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The unlockResource operation*

Unlocks a resource. This operation will be ignored if the resource is not locked.

#### *Input fields*

The following table lists the input fields for the unlockResource operation.

Table 4-61
*Fields for unlockResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string | URI for the resource to unlock. |

#### *Java example*

The following sample unlocks the job *Results* at the specified location.

```
String uri = "spsscr://pes_server:80/Jobs/Results";
stub.unlockResource(uri);
```

#### SOAP request example

Client invocation of the unlockResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">admin</wsse:Username>
    <wsse:Password xsi:type="xsd:string">spss</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <unlockResource xmlns="http://xml.spss.com/repository/remote">
   <targetURI>spsscr://localhost:8080/Jobs/Results</targetURI>
  </unlockResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### SOAP response example

The server responds to a unlockResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <unlockResourceResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

## The unlockResources operation

Unlocks an array of resources. Resources that are not locked will be ignored.

#### Input fields

The following table lists the input fields for the unlockResources operation.

Table 4-62
*Fields for unlockResources*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string[] | Array of URIs for the resource to unlock. |

#### *Java example*

The following sample unlocks the jobs *January* and *February* at the specified locations.

```
String[] uri = {
  "spsscr://pes_server:80/Jobs/January",
  "spsscr://pes_server:80/Jobs/February"
};
stub.unlockResources(uri);
```

#### *SOAP request example*

Client invocation of the unlockResources operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">admin</wsse:Username>
    <wsse:Password xsi:type="xsd:string">spss</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <unlockResources xmlns="http://xml.spss.com/repository/remote">
   <targetURI>spsscr://localhost:8080/Jobs/January</targetURI>
   <targetURI>spsscr://localhost:8080/Jobs/February</targetURI>
  </unlockResources>
 </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a unlockResources operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <unlockResourcesResponse xmlns="http://xml.spss.com/repository/remote"/>
 </soapenv:Body>
</soapenv:Envelope>
```

# The updateCustomProperty operation

Updates the definition of a custom property.

### Input fields

The following table lists the input fields for the updateCustomProperty operation.

Table 4-63
*Fields for updateCustomProperty*

| Field | Type/Valid Values | Description |
|---|---|---|
| CustomProperty | CustomProperty | Metadata describing a custom property defined by a customer to apply to resources. |

### Return information

The following table identifies the information returned by the updateCustomProperty operation.

Table 4-64
*Return Value*

| Type | Description |
|---|---|
| string | The identifier of the updated custom property. |

### Java example

The following sample uses the getAllCustomProperties operation to retrieve all custom properties in the system. The setLabel method changes the label for the first custom property to *Review Complete* and the updateCustomProperty operation applies this change to the custom property in the system.

```
CustomProperty[] customProperties = stub.getAllCustomProperties();
customProperties[0].setLabel("Review Complete");
String id = stub.updateCustomProperty(customProperties[0]);
```

### SOAP request example

Client invocation of the updateCustomProperty operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username xsi:type="xsd:string">Native/validUser</wsse:Username>
    <wsse:Password xsi:type="xsd:string">password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:mustUnderstand="0" xsi:type="xsd:string"
   xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0, en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <updateCustomProperty xmlns="http://xml.spss.com/repository/remote">
   <CustomProperty label="Review Complete" identifier="0a0a4aac00072ffb00000106f3f7b05b348f"
    xmlns="http://xml.spss.com/repository">
    <appliesTo>
     <fileApplicable/>
     <jobApplicable>false</jobApplicable>
     <folderApplicable>false</folderApplicable>
    </appliesTo>
    <constraint>
     <freeform type="boolean"/>
    </constraint>
   </CustomProperty>
  </updateCustomProperty>
 </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a updateCustomProperty operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <updateCustomPropertyResponse xmlns="http://xml.spss.com/repository/remote">
   <identifier>0a0a4aac00072ffb00000106f3f7b05b348f</identifier>
  </updateCustomPropertyResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

# The updateCustomPropertyValuesInBulk operation

Updates a list of files or file versions to have the same custom property values.

### Input fields

The following table lists the input fields for the updateCustomPropertyValuesInBulk operation.

Table 4-65
*Fields for updateCustomPropertyValuesInBulk*

| Field | Type/Valid Values | Description |
|---|---|---|
| QualifiedCustomPropertyValuesURISpecifier[] | QualifiedCustomPropertyValuesURISpecifier[] | Wrapper for the resource URI, resource specifier and its custom properties |

### Return information

The following table identifies the information returned by the updateCustomPropertyValuesInBulk operation.

Table 4-66
*Return Value*

| Type | Description |
|---|---|
| string[] | Array of resource URIs. |

### Java example

The following sample updates the custom property *Approved By* for three files to have the value *Langdon Algar*.

```
QualifiedCustomPropertyValuesURISpecifier[] qus = new QualifiedCustomPropertyValuesURISpecifier[3];

String uri =
  "spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8403#m.0:2006-11-02%2009:54:27.282";
ResourceSpecifier rs = new ResourceSpecifier();
File f = new File();
ResourceID rsid = new ResourceID();
rsid.setValue("0a0a4a35d98ee53f0000010ea9597eda8403");
f.setResourceID(rsid);
ResourcePath rp = new ResourcePath();
rp.setValue("/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str");
rp.setHierarchyType(HierarchyType.folder);
f.setResourcePath(rp);
rs.setResource(f);
CustomPropertyValue cpValue = new CustomPropertyValue();
cpValue.setLabel("Approved By");
cpValue.setIdentifier("0a0a4a3526737cd10000010ec7edde56814d");
SelectionValue[] sv = new SelectionValue[3];
sv[0].setValue("Langdon Algar");
sv[0].setIsSelected(true);
sv[1].setValue("Steve Bennett");
sv[1].setIsSelected(false);
```

```
sv[2].setValue("Lois Sanborn");
sv[2].setIsSelected(false);
cpValue.setSelect(sv);

qus[0].setResourceURI(uri);
qus[0].setResourceSpecifier(rs);
qus[0].setCustomPropertyValue(cpValue);

uri = "spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda81f6#m.0:2006-11-02%2009:54:16.935";
rsid.setValue("0a0a4a35d98ee53f0000010ea9597eda81f6");
f.setResourceID(rsid);
rp.setValue("/ModelerStreamLibrary/Modeling/M05_ScoringModels.str");
rp.setHierarchyType(HierarchyType.folder);
f.setResourcePath(rp);
rs.setResource(f);

qus[1].setResourceURI(uri);
qus[1].setResourceSpecifier(rs);
qus[1].setCustomPropertyValue(cpValue);

uri = "spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8392#m.0:2006-11-02%2009:54:25.594";
rsid.setValue("0a0a4a35d98ee53f0000010ea9597eda8392");
f.setResourceID(rsid);
rp.setValue("/ModelerStreamLibrary/Modeling/M03a_ClusterProfilesKohonen.str");
rp.setHierarchyType(HierarchyType.folder);
f.setResourcePath(rp);
rs.setResource(f);

qus[2].setResourceURI(uri);
qus[2].setResourceSpecifier(rs);
qus[2].setCustomPropertyValue(cpValue);

String[] result = stub.updateCustomPropertyValuesInBulk(qus);
```

#### *SOAP request example*

Client invocation of the updateCustomPropertyValuesInBulk operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
```

```
  soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
 en;q=0.8</ns1:client-accept-language>
</soapenv:Header>
<soapenv:Body>
 <updateCustomPropertyValuesInBulk xmlns="http://xml.spss.com/repository/remote">
  <QualifiedCustomPropertyValuesURISpecifier xmlns="http://xml.spss.com/repository">
   <ResourceURI>
    spsscr://pes_server:80/?id=0a0a4a35d98ee53f0000010ea9597eda8403#m.0:2006-11-02%2009:54:27.282
   </ResourceURI>
   <ns4:ResourceSpecifier xmlns:ns4="http://xml.spss.com/repository">
    <ns4:Resource xsi:type="File">
     <ns4:ResourceID value="0a0a4a35d98ee53f0000010ea9597eda8403"/>
     <ns4:ResourcePath value="/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str"
      hierarchyType="folder"/>
     <ns4:associatedTopicList/>
    </ns4:Resource>
   </ns4:ResourceSpecifier>
   <ns3:CustomPropertyValue label="Approved By" identifier="0a0a4a3526737cd10000010ec7edde56814d"
    xmlns:ns3="http://xml.spss.com/repository">
    <ns3:select multipleSelect="false">
     <ns3:selectionValue isSelected="true" value="Langdon Algar"/>
     <ns3:selectionValue isSelected="false" value="Steve Bennett"/>
     <ns3:selectionValue isSelected="false" value="Lois Sanborn"/>
    </ns3:select>
   </ns3:CustomPropertyValue>
  </QualifiedCustomPropertyValuesURISpecifier>
  <QualifiedCustomPropertyValuesURISpecifier xmlns="http://xml.spss.com/repository">
   <ResourceURI>
    spsscr://pes_server:80/?id=0a0a4a35d98ee53f0000010ea9597eda81f6#m.0:2006-11-02%2009:54:16.935
   </ResourceURI>
   <ns4:ResourceSpecifier xmlns:ns4="http://xml.spss.com/repository">
    <ns4:Resource xsi:type="File">
     <ns4:ResourceID value="0a0a4a35d98ee53f0000010ea9597eda81f6"/>
     <ns4:ResourcePath value="/ModelerStreamLibrary/Modeling/M05_ScoringModels.str"
      hierarchyType="folder"/>
     <ns4:associatedTopicList/>
    </ns4:Resource>
   </ns4:ResourceSpecifier>
   <ns3:CustomPropertyValue label="Approved By" identifier="0a0a4a3526737cd10000010ec7edde56814d"
    xmlns:ns3="http://xml.spss.com/repository">
    <ns3:select multipleSelect="false">
     <ns3:selectionValue isSelected="true" value="Langdon Algar"/>
     <ns3:selectionValue isSelected="false" value="Steve Bennett"/>
     <ns3:selectionValue isSelected="false" value="Lois Sanborn"/>
    </ns3:select>
   </ns3:CustomPropertyValue>
  </QualifiedCustomPropertyValuesURISpecifier>
  <QualifiedCustomPropertyValuesURISpecifier xmlns="http://xml.spss.com/repository">
   <ResourceURI>
    spsscr://pes_server:80/?id=0a0a4a35d98ee53f0000010ea9597eda8392#m.0:2006-11-02%2009:54:25.594
   </ResourceURI>
   <ns4:ResourceSpecifier xmlns:ns4="http://xml.spss.com/repository">
```

```
      <ns4:Resource xsi:type="File">
       <ns4:ResourceID value="0a0a4a35d98ee53f0000010ea9597eda8392"/>
       <ns4:ResourcePath value="/ModelerStreamLibrary/Modeling/M03a_ClusterProfilesKohonen.str"
        hierarchyType="folder"/>
       <ns4:associatedTopicList/>
      </ns4:Resource>
     </ns4:ResourceSpecifier>
     <ns3:CustomPropertyValue label="Approved By" identifier="0a0a4a3526737cd10000010ec7edde56814d"
      xmlns:ns3="http://xml.spss.com/repository">
      <ns3:select multipleSelect="false">
       <ns3:selectionValue isSelected="true" value="Langdon Algar"/>
       <ns3:selectionValue isSelected="false" value="Steve Bennett"/>
       <ns3:selectionValue isSelected="false" value="Lois Sanborn"/>
      </ns3:select>
     </ns3:CustomPropertyValue>
    </QualifiedCustomPropertyValuesURISpecifier>
   </updateCustomPropertyValuesInBulk>
  </soapenv:Body>
</soapenv:Envelope>
```

#### *SOAP response example*

The server responds to a updateCustomPropertyValuesInBulk operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
   xmlns:xsd="http://www.w3.org/2001/XMLSchema"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
  <updateCustomPropertyValuesInBulkResponse xmlns="http://xml.spss.com/repository/remote">
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8403</uri>
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda81f6</uri>
   <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8392</uri>
  </updateCustomPropertyValuesInBulkResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## *The updateResource operation*

Updates the metadata for an existing resource version. The main difference between updateResource and createResource is that update cannot be used to create an initial or subsequent version of a resource.

Updating a resource is similar to creating a resource. In order to establish some limited concurrency control, when a resource is updated, the metadata for that resource must have been explicitly obtained through the getResource or the getChildren operations. The modification date of the resource must be explicitly passed as part of the resource when an update request occurs.

If the modification date/time of the request does not match the current modification date of the resource in the repository, the update will not be allowed and an exception will be thrown.

It is not necessary that all the metadata for a resource be obtained before the request. For each piece of metadata, there is an instance in the resource. This instance is null unless explicitly set by the client or the server implementation. There is an important distinction between an instance of metadata being null and the value within the instance being null. If the server implementation handling the update comes across a metadata instance that is null, it will ignore it because it has not been set by either the client or a previous server request. This insures that on an update request no metadata that previously had a valid value will be nulled accidentally.

For example, suppose that on a previous request a client had obtained a resource with just the modification date, author, and resource ID explicitly specified. All the other metadata instances in the request will be null. If there was not an author associated with the resource , the instance would not be null but the value of the instance (the value inside the Author object) would be null. The client could set a valid author and issue the update request. The only fields that would be modified would be those previously requested.

As another example, suppose getResource had been previously issued to obtain the metadata for the resource. A getResource call always returns all the metadata associated with the resource, with the exception of binary content, which is not considered metadata. The user changes the value for author and then issues the update request. All of the metadata for the resource would be updated but, with the exception of author, it would just be updated to its existing value.

#### *Input fields*

The following table lists the input fields for the updateResource operation.

Table 4-67
*Fields for updateResource*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string | URI for the resource to update. |
| ResourceSpecifier | ResourceSpecifier | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

#### *Return information*

The following table identifies the information returned by the updateResource operation.

Table 4-68
*Return Value*

| Type | Description |
|---|---|
| string | URI for the updated resource. |

### *Java example*

The following sample updates a file resource by adding a keyword.

```
String url="spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str";
ResourceSpecifier rs = stub.getResource(url);
File f = (File)rs.getResource();
Keyword keyword = new Keyword();
keyword.setValue("clustering");
f.getAssociatedKeywordList().setKeyword(keyword);
String result = stub.updateResource(url, rs, null);
```

### *SOAP request example*

Client invocation of the updateResource operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <updateResource xmlns="http://xml.spss.com/repository/remote">
   <targetURI>
    spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str</targetURI>
   <ns3:ResourceSpecifier xmlns:ns3="http://xml.spss.com/repository">
    <ns3:Resource xsi:type="File">
     <ns3:associatedKeywordList>
      <ns3:keyword value="clustering"/>
     </ns3:associatedKeywordList>
    </ns3:Resource>
   </ns3:ResourceSpecifier>
  </updateResource>
 </soapenv:Body>
</soapenv:Envelope>
```

#### SOAP response example

The server responds to a updateResource operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
   xmlns:xsd="http://www.w3.org/2001/XMLSchema"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Body>
   <updateResourceResponse xmlns="http://xml.spss.com/repository/remote">
    <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8403</uri>
   </updateResourceResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

## The updateResources operation

Updates a list of files or file versions with differing metadata sets. Each file or version is updated individually. The results of this operation are identical to calling the updateResource operation for each resource to be updated. However, using updateResources, only one web service call is needed.

The uri and ResourceSpecifier arrays must be of the same size, with the location in the array identifying which update applies to which uri. For example, the first uri corresponds to the first ResourceSpecifier.

#### Input fields

The following table lists the input fields for the updateResources operation.

Table 4-69
*Fields for updateResources*

| Field | Type/Valid Values | Description |
|---|---|---|
| targetURI | string[] | Array of resource URIs. |
| ResourceSpecifier | ResourceSpecifier[] | Wrapper for a resource object. Used to define service interface parameter to preserve polymorphism. |
| ResourceRetrievalOptions | ResourceRetrievalOptions | For use with the Content Repository URI web service. Options on this object can be set to determine how the Resource is retrieved. Usage of this object is optional when using the Content Repository URI service. |

#### Return information

The following table identifies the information returned by the updateResources operation.

Table 4-70
*Return Value*

| Type | Description |
|---|---|
| string[] | Array of URIs for the updated resources. |

### *Java example*

The following sample updates two file resources by adding a different keyword to each.

```
String[] uri = {
  "spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str",
  "spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M05_ScoringModels.str"
};
ResourceSpecifier[] rs = new ResourceSpecifier[2];
rs[0] = stub.getResource(uri[0]);
File f0 = (File)rs[0].getResource();
Keyword keyword = new Keyword();
keyword.setValue("clustering");
f0.getAssociatedKeywordList().setKeyword(keyword);
rs[1] = stub.getResource(uri[1]);
File f1 = (File)rs[1].getResource();
keyword.setValue("scoring");
f1.getAssociatedKeywordList().setKeyword(keyword);
String[] result = stub.updateResources(uri, rs, null);
```

### *SOAP request example*

Client invocation of the updateResources operation generates a SOAP request message that is sent to the server for processing. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <soapenv:Header>
  <wsse:Security soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0"
   xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
   <wsse:UsernameToken>
    <wsse:Username>validUser</wsse:Username>
    <wsse:Password>password</wsse:Password>
   </wsse:UsernameToken>
  </wsse:Security>
  <ns1:client-accept-language soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
   soapenv:mustUnderstand="0" xmlns:ns1="http://xml.spss.com/ws/headers">en-US;q=1.0,
  en;q=0.8</ns1:client-accept-language>
 </soapenv:Header>
 <soapenv:Body>
  <updateResources xmlns="http://xml.spss.com/repository/remote">
   <targetURI>
    spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M03b_ClusterProfilesTwoStep.str</targetURI>
   <targetURI>
```

```
      spsscr://pes_server:80/ModelerStreamLibrary/Modeling/M05_ScoringModels.str</targetURI>
    <ns3:ResourceSpecifier xmlns:ns3="http://xml.spss.com/repository">
     <ns3:Resource xsi:type="File">
      <ns3:associatedKeywordList>
       <ns3:keyword value="clustering"/>
      </ns3:associatedKeywordList>
     </ns3:Resource>
    </ns3:ResourceSpecifier>
    <ns3:ResourceSpecifier xmlns:ns3="http://xml.spss.com/repository">
     <ns3:Resource xsi:type="File">
      <ns3:associatedKeywordList>
       <ns3:keyword value="scoring"/>
      </ns3:associatedKeywordList>
     </ns3:Resource>
    </ns3:ResourceSpecifier>
   </updateResources>
  </soapenv:Body>
</soapenv:Envelope>
```

### *SOAP response example*

The server responds to a updateResources operation call by sending a SOAP response message containing the results. An example of such a message follows.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
   xmlns:xsd="http://www.w3.org/2001/XMLSchema"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
   <updateResourcesResponse xmlns="http://xml.spss.com/repository/remote">
    <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda8403</uri>
    <uri>spsscr:///?id=0a0a4a35d98ee53f0000010ea9597eda81f6</uri>
   </updateResourcesResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Appendix

A

# Microsoft® .NET Framework-based clients

In order to use the web services from a Microsoft Windows Communication Foundation (WCF) client, you will need Visual Studio 2008 or later. The discussion here assumes the use of Visual Studio 2008. In general, the process for accessing IBM® SPSS® Collaboration and Deployment Services web services involves the following steps:

1. Add a Service Reference. For more information, see the topic Adding a service reference on p. 112.

2. Configure the web service endpoint. For more information, see the topic Configuring the web service endpoint on p. 114.

3. Programmatically configure the necessary endpoint behaviors. For more information, see the topic Configuring endpoint behaviors on p. 115.

4. Exercise the web service. For more information, see the topic Exercising the service on p. 115.

Note that the IBM SPSS Collaboration and Deployment Services single sign-on implementation is not compatible with Microsoft .NET web services, or the WCF. As a result, single sign-on is not available from these clients.

## Adding a service reference

The first step in using a WCF client to access IBM® SPSS® Collaboration and Deployment Services web services is to make the service available to the Visual Studio project by adding it as a Service Reference.

1. In Visual Studio, right-click the folder's *References* folder and select Add Service Reference.

2. Type the URL of the service WSDL location in the Address field, and click Go. The value corresponds to the service endpoint appended with *?wsdl*.

3. Specify the desired namespace in the Namespace field.

4. Click OK.

Visual Studio adds a new service reference to the Service Reference directory for the project. The name of the reference corresponds to the specified namespace.

## Service reference modifications

Due to known compatibility issues between Microsoft tooling and some WSDL files, you need to manually modify some service references before they can be used successfully. For information about the specific issues, see articles 891386 (*http://support.microsoft.com/kb/891386*) and 326790 (*http://support.microsoft.com/kb/326790*) on the Microsoft Support site.

To modify a service reference:

1. In Visual Studio, select the project and click Show All Files from the Project menu.
2. Expand the service reference that needs to be modified.
3. Expand the *Reference.svcmap* node.
4. Open the *Reference.cs* file.
5. Make the required modifications.
6. Save the file.

For the Content Repository Service , Content Repository URI Service, and Process Management Service, you need to make the following changes to the RowType class:

- private value[][] cellField should be changed to private value[] cellField
- public value[][] cell should be changed to public value[] cell

For the Scoring Service, you need to make the following changes:

- in the returnedDPDOutputTable class, private returnedDPDOutputValue[][] returnedDPDOutputrowField should be changed to private returnedDPDOutputValue[] returnedDPDOutputrowField
- in the returnedDPDOutputTable class, private returnedDPDOutputValue[][] returnedDPDOutputRow should be changed to private returnedDPDOutputValue[] returnedDPDOutputRow
- in the returnedRequestInputTable class, private returnedRequestInputValue[][] returnedRequestInputRow should be changed to private returnedRequestInputValue[] returnedRequestInputRow
- in the returnedRequestInputTable class, private returnedRequestInputValue[][] returnedRequestInputRowField should be changed to private returnedRequestInputValue[] returnedRequestInputRowField
- in the requestInputTable class, private input1[][] requestInputRowField should be changed to private input1[] requestInputRowField
- in the requestInputTable class, private input1[][] requestInputRow should be changed to private input1[] requestInputRow

For the PevServices Service, you need to make the following changes:

- in the avTableConflict class, private avColumnMeta[][] avColumnConflictField should be changed to private avColumnMeta[] avColumnConflictField

- in the avTableConflict class, private avColumnMeta[][] avColumnConflict should be changed to private avColumnMeta[] avColumnConflict
- in the evTableConflict class, private evColumnMeta[][] evColumnConflictField should be changed to private evColumnMeta[] evColumnConflictField
- in the evTableConflict class, private evColumnMeta[][] evColumnConflict should be changed to private evColumnMeta[] evColumnConflict

## Configuring the web service endpoint

In WCF, you can configure a service endpoint either declaratively using an *app.config* file, or programmatically using the WCF APIs. The following steps describe the creation of a basic configuration within an *app.config* file.

1. In Visual Studio, double-click the *app.config* file for the application (or *web.config* for a web-application).

2. Find the system.serviceModel element. Create it if it does not already exist.

3. Find the client element. Create it if it does not already exist.

4. Create a new endpoint element as a child of the client element.

5. Specify the appropriate service endpoint URL as the value of the *address* attribute.

6. Specify *basicHttpBinding* as the value of the *binding* attribute.

7. Specify the appropriate service contract as the value of the *contract* attribute. The service contract is the value of the service reference namespace appended with the service name.

8. Optionally specify a value for the *name* attribute that identifies a name for the endpoint configuration. If the *name* is blank, the configuration is used as the default for the service.

The resulting *app.config* file should be similar to the following example:

```
<system.serviceModel>
  <client>
    <endpoint
      address="http://cads_server:8080/cr-ws/services/ContentRepository"
      binding="basicHttpBinding"
      bindingConfiguration=""
      contract="IBM.SPSS.ContentRepository"
      name=""/>
  </client>
</system.serviceModel>
```

## Configuring endpoint behaviors

The following two issues complicate the use of IBM® SPSS® Collaboration and Deployment Servicesweb services by WCF clients:

- WCF does not allow the username and password to be transmitted over HTTP
- WCF does not correctly understand the SOAP Fault format returned by the services

To address these problems, a sample Visual Studio project is available that contains classes adding endpoint behaviors that resolve both issues. The IBM SPSS Collaboration and Deployment Services installation media includes this project.

To use these classes, ensure that the *IBM.SPSS.WCF.Utilities* project containing these classes has been compiled and added as a reference to the Visual Studio project that exercises the web services. When constructing a new service client instance, ensure that the behaviors are added as follows:

```
ContentRepositoryClient serviceClient = new ContentRepositoryClient();
serviceClient.Endpoint.Behaviors.Add(
  new ApplyClientInspectorsBehavior(
  new HeaderInjectionMessageInspector(
    new UsernameTokenSecurityHeader("admin", "Abcdefg1")
  ),
  new SOAPFaultFormatMessageInspector())
);
```

This adds two message inspectors to the behaviors for the endpoint. The first allows message headers to be injected, permitting a UsernameToken security header containing the username and password to be transmitted over HTTP. The second message inspector intercepts SOAP Faults, ensuring that they are formatted for proper WCF processing.

## Exercising the service

After adding the service reference to the project, configuring the endpoint, and adding the necessary endpoint behaviors, the WCF-based web service client is ready. Add the .NET source code to the project to exercise the web service as needed.

There may be instances in which the .NET client proxies are generated incorrectly, leading to unexpected missing results at runtime. If a web service call returns no results when results are expected, the generated .NET types associated with the request and response should be examined. Specifically, members of the types may have two .NET attributes assigned. The first, MessageBodyMemberAttribute, will often include the proper namespace for the member type. The second, XmlElementAttribute, should have the same namespace as MessageBodyMemberAttribute. If this is not the case, add the namespace to XmlElementAttribute. Moreover, the addition of XML serialization attributes, such as System.XML.Serialization.XmlElementAttribute, may be necessary to correctly name the expected namespace or element. For example, the following generated client code would need to be modified:

```
public partial class getUsersResponse {
  System.ServiceModel.MessageBodyMemberAttribute(Namespace =
    "http://xml.spss.com/pes/userPref/remote", Order = 0)]
```

```
  public IBM.SPSS.ManagerUserPref.usersResponse usersResponse;
```

The corrected code is as follows:

```
public partial class getUsersResponse {
  [System.ServiceModel.MessageBodyMemberAttribute(Namespace =
    "http://xml.spss.com/pes/userPref/remote", Order = 0)]
  [System.Xml.Serialization.XmlElementAttribute(ElementName="usersRequestResponse")]
  public IBM.SPSS.ManagerUserPref.usersResponse usersResponse;
```

Appendix

# B

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Java

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