Note
Before using this information and the product it supports, read the information in “Notices” on page 251.

Product Information
This document applies to IBM Cognos Software Development Kit Version 11.0.0 and may also apply to subsequent releases.
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Introduction

This document is intended for use with the IBM® Cognos® Mashup Service, which allows you to develop applications that expose IBM Cognos outputs, such as reports and analyses, as Web services (both SOAP and REST).

As a developer, you can use the Mashup Service to create applications that use a structured view of IBM Cognos outputs as input.

This document describes in detail how you can develop applications using the IBM Cognos Mashup Service. It also contains detailed reference information about the Mashup Service.

Audience

To use the Mashup Service Developer Guide effectively, you should be familiar with the following items:

- the IBM Cognos services and outputs you will be using
- Web services such as SOAP, WSIL, WSDL, and REST
- XML and XML schemas
- HTML and the JavaScript scripting language
- programming languages and integrated development environments (IDEs), such as the Java™ programming language and the Eclipse IDE, or the C# programming language and the Microsoft Visual Studio IDE.

Note that although it is possible to combine the use of the IBM Cognos Software Development Kit and the IBM Cognos Mashup Service, the two products are separate, and use of, or knowledge about, the Software Development Kit is not required in order to develop Mashup Service applications.

Finding information

To find product documentation on the web, including all translated documentation, access IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

Forward-looking statements

This documentation describes the current functionality of the product. References to items that are not currently available may be included. No implication of any future availability should be inferred. Any such references are not a commitment, promise, or legal obligation to deliver any material, code, or functionality. The development, release, and timing of features or functionality remain at the sole discretion of IBM.

Samples disclaimer

The Sample Outdoors Company, Great Outdoors Company, GO Sales, any variation of the Sample Outdoors or Great Outdoors names, and Planning Sample depict fictitious business operations with sample data used to develop sample applications for IBM and IBM customers. These fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values is coincidental. Other sample files may contain fictional data manually or machine generated, factual data compiled from academic or public sources, or data used with permission of the copyright holder, for use as sample data to develop sample applications. Product names referenced may be the trademarks of their respective owners. Unauthorized duplication is prohibited.
Accessibility features
Consult the documentation for the tools that you use to develop applications to determine their accessibility level. These tools are not a part of this product.

IBM Cognos HTML documentation has accessibility features. PDF documents are supplemental and, as such, include no added accessibility features.
Chapter 1. What's new?

This section contains a list of new, changed, and deprecated features for this and previous releases. It will help you plan your upgrade and application deployment strategies and the training requirements for your users.

To review an up-to-date list of environments supported by IBM Cognos products, including operating systems, patches, browsers, Web servers, directory servers, database servers, and application servers, visit the IBM Software Product Compatibility Reports page (http://www.ibm.com/support/docview.wss?uid=swg27042164).

For information about upgrading IBM Cognos Mashup Service applications created in previous versions of the product, see Chapter 11, “Upgrading Mashup Service applications,” on page 83.

New features in version 10.2.2

New features have been added to the IBM Cognos Mashup Service and are described here.

**New version of Layout Data (LDX) schema**

Version 3 of the LDX schema is now available. The namespace for this schema version is http://www.ibm.com/xmlns/prod/cognos/layoutData/201310. The following elements have been added in this schema version:

- booklet
- em
- h1
- h2
- h3
- h4
- h5
- h6
- hdrs
- isFirstCell
- isFirstElement
- isLayoutTable
- labelFor
- lang
- stg
- title

SOAP applications use version 3 of the LDX schema if they use the WSDL file included with IBM Cognos Mashup Service version 10.2.2. REST application must use the v option to specify version 3 of the LDX schema.

**New version of RDS schema**

Version 3 of the RDS schema is now available. The namespace for this schema version is http://www.ibm.com/xmlns/prod/cognos/rds/types/201310. The following elements have been added in this schema version:

- inlineStyles
SOAP applications use version 3 of the RDS schema if they use the WSDL file included with IBM Cognos Mashup Service version 10.2.2. REST application must use the `v` option to specify version 3 of the RDS schema.

**Accessibility support in HTML output**

You can now include accessibility features, such as alternate text, summary text, designated cell headers in tables, and accessible conditional layouts, in the HTML and HTMLFragment output formats. To include accessibility feature, you must satisfy the following conditions:

- You have enabled accessible report output in IBM Cognos Connection. Accessible report output can be enabled either on a system-wide or report-specific bases. See the topics on accessible report output in the *IBM Cognos Analytics Administration and Security Guide* for information on how to enable accessible report output.
- Your SOAP or REST application is using version 3 of the LDX schema.

**New Dataset JSON output format**

You can now specify the `DataSetJSON` output format, which is the `DataSet` format in a JSON wrapper.

**Specifying styles location in HTMLFragment output**

You can now specify where style information in HTMLFragment output is located with the `inlineStyles` option (SOAP applications), and the `inlineStyles` option (REST applications).

**Report output format restriction**

In IBM Cognos Analytics, to manage system resources, administrators can now restrict the ability of users to run reports in the CSV, PDF, Microsoft Excel, and XML report output formats. These restrictions are enforced for Cognos mashup service applications, except that a report saved in any format can be retrieved.

---

**Deprecated features in version 10.2.2**

The following features have been deprecated and will be removed in a future release of this product.

**Support for Layout Data (LDX) schema version 1**

Customers should upgrade to the latest Layout Data (LDX) schema version.

**Support for the Simple output format**

Customers should migrate to another output format, such as the Layout Data (LDX) format or one of the Dataset formats, `DataSet`, `DataSetAtom`, or `DataSetJSON`. See [Output formats](#) for more information.

**Support for IBM Cognos Series 7 PowerPlay reports**

Customers should migrate to a current version of Cognos PowerPlay reports.

---

**New features in version 10.2.1**

New features have been added to the IBM Cognos Mashup Service and are described here.

**Embedding images in HTML output**

You can have HTML output from the IBM Cognos Mashup Service contain image data inline instead of containing URLs to images on the server. For more information, see “Embedding images in HTML output” on page 51.
New sample programs
Sample programs have been added.

• The following JavaScript sample programs have been added.
  
  **drillDownFromChart**
  This sample program runs a report with a drillable chart and drills down when a specific area of the chart is clicked.
  
  **drillThroughFromChart**
  This sample program performs a drill through from one report to another report.
  
  **htmlTreePrompt**
  This sample program prompts for tree prompts and then runs a report with the selected prompts.

• The following Java sample program has been added.
  
  **ExpandTreePrompt**
  This sample program prompts for tree prompts and then runs a report with the selected prompts.

• The following C# sample program has been added.
  
  **ExpandTreePrompt**
  This sample program prompts for tree prompts and then runs a report with the selected prompts.

Deprecated features in version 10.2.1
The following resource type has been deprecated and will be removed in a future release of this product.

The **providerOutput** REST resource type has been deprecated. IBM Cognos Mashup Service applications should use the **outputFormat** REST resource type instead.

New features in version 10.2
New features have been added to the IBM Cognos Mashup Service and are described here.

**Using a relative URL for the prompt page response**
If the internal dispatcher URI of your IBM Cognos Analytics server is hidden behind a firewall, you can receive the prompt page URL based on the external gateway URI instead. For more information, see “Retrieving a relative prompt page URL” on page 51.

New features in version 10.1.1
New features have been added to the IBM Cognos Mashup Service and are described here.

**Running reports and retrieving output in IBM Cognos Viewer formats**
You can run reports and retrieve outputs in the formats used by IBM Cognos Viewer (such as PDF, CSV, Microsoft Excel).

You can use the **outputFormats** resource type (REST applications) or the **getOutputFormats** method (SOAP applications) to retrieve a list of supported output formats for a report. You can then use the **outputFormat** resource type (REST applications) or the **getOutputFormat** method (SOAP applications) to run the report and retrieve the output in a specified format.

See “Running reports and retrieving output in IBM Cognos Viewer formats” on page 35 for more information.
New features in version 10.1.0

New features have been added to the IBM Cognos Mashup Service and are described here.

Retrieving report output a page at a time

You can run a report and retrieve the first page of output with the `pagedReportData` (REST applications) and `getPagedReportData` (SOAP applications) methods. You can then use secondary method calls to retrieve additional pages of report output.

Report Caching

After running a report, you can request the same report output again without rerunning the report.

You may also change the output format and get the new output without rerunning the report.

Saving report versions

You can save report versions in the Content Store by using the `saveOutput` option (REST applications) or the `saveOutput` option (SOAP applications). The report is saved in the preferred format as set in IBM Cognos Connection. See “Saving report versions” on page 37 for more information.

Accessing report versions saved in IBM Cognos Analytics studios

You can retrieve report versions saved in IBM Cognos Analytics studios by using the `providerOutput` REST resource type. See “Accessing report outputs saved by IBM Cognos Analytics studios” on page 37 for more information.

Prompt description pages in LDX format

The LDX format has been enhanced to include prompt description pages and you can use the `reportPrompts` (REST applications) and `getReportPrompts` (SOAP applications) methods to get the prompt description pages for a report. You See “Sample prompt request page in LDX format” on page 65 for more information.

Increased layout fidelity

The LDX schema now includes layout block (`blk`), widget (`widget`), and layout table (`tbl`) elements that give Mashup Service applications more control over formatting.

Mashup Service applications can use the `includeLayout` (REST applications) and `includeLayout` (SOAP applications) options to control the use of the new layout elements.

New output formats

Three new output formats have been added. They are the DataSet, DataSetAtom, and the Image format. See “Output formats” on page 9 for more information.

Additional XPath support

When using XPath expressions to filter report output, you can now use the following additional XPath constructs:

- The XPath child axis is supported. The following examples will filter on all charts or lists:
  - `/document/pages/page/body/item[cht or lst]
  - `/document/pages/page/body/item[child::cht or child::lst]
- The `local-name()` function is now supported.
**Deprecated features in version 10.1.0**

The following method and resource type have been deprecated and will be removed in a future release of this product.

The `getPromptDescription` generic SOAP method and the `promptDescription` REST resource type have been deprecated. Mashup Service applications should use the `getReportPrompts` SOAP method and `reportPrompts` REST resource type instead.

**New and changed features in version 8.4.1**

The IBM Cognos Mashup Service Developer Guide is now available to all IBM Cognos Software Development Kit customers.

There have been additions and changes to the layout formats and to the schemas. These changes requires modifications to Mashup Service applications created in version 8.4.1 of the product. These modifications are described in “Upgrading to version 8.4.1” on page 85.

**Layout format changes**

A new element, the `pages` element, is a container for all `pageGroup` and `page` elements. The following LDX code:

```ldx
<document>
  <pageGroup>
    <page>
      ...
    </page>
  </pageGroup>
</document>
```

would be rendered as follows in the current version:

```ldx
<document>
  <pages>
    <pageGroup>
      <pages>
        <page>
          ...
        </page>
      </pages>
    </pageGroup>
  </pages>
</document>
```

**RDS schema changes**

The following elements have been added:

- `extension`
- `GetReportDataRequest`
- `includePageBreaks`
- `LDXOutput`

The following elements have been removed:

- `ContentOutput`
- `GetReportContentRequest`
- `GetReportFormattedRequest`
- `paged`
The content model of the following element has changed:

- **output**

**Layout Data schema changes**


The following element has been added:

- **pages**
Chapter 2. Overview of the Mashup Service

The IBM Cognos Mashup Service gives you a simplified programmatic access to IBM Cognos content. This service exposes the application content built with IBM Cognos products (such as reports, analyses, and PowerPlay® reports) as Web services, both SOAP and REST. This allows you to integrate IBM Cognos content into new client environments like mashups, BPM/BPEL workflow processes, desktop widgets, alternate visualizations like third party charting engines and rich Internet applications.

The Mashup Service transforms all IBM Cognos content into a single format called Layout Data (LDX) format. This format allows you to customize the presentation of IBM Cognos content using a simple API. The LDX format captures the logical structure of the content, as well as some formatting information. For example, list grouping, crosstab dimensions, data values and styling information are represented in an LDX instance.

The Mashup Service transforms LDX instances into in a variety of formats, including HTML, HTMLFragment, and JSON, to facilitate the integration of IBM Cognos content into your applications.

The Mashup Service allows you to access existing IBM Cognos content but does not provide any authoring functionality.

The following diagram illustrates how the Mashup Service interfaces link to the underlying IBM Cognos services, or providers; how they move in LDX format through selections, such as XPATH or ObjectID; and how they can be represented, such as in XML, HTML or JSON.

Figure 1: Mashup Service interfaces

Programming interfaces

The Mashup Service offers you the choice of two programming interfaces, REST and SOAP.

REST interface

The representational state transfer (REST) interface is a lightweight interface that use HTTP requests to communicate with the IBM Cognos Analytics server. This interface requires the consuming application to understand the response and has a low overhead when dealing with large amounts of data.

Mashup Service REST requests use the following syntax:

http://webservername:portnumber/ibmcognos/bi/v1/disp/ids/resource_type/source_type/source_id?option1=val1&option2=val2...
For example, the following request retrieves the output for the report with storeID icb01bd1241024cc5bf2086fb10cb40d2 in LDX format:

http://localhost/ibmcognos/bi/v1/disp/rds/reportData /report/icb01bd1241024cc5bf2086fb10cb40d2

**SOAP interface**

The simple object access protocol (SOAP) interface provides an interface in which SOAP messages are used to pass requests and responses between the client application and the IBM Cognos Analytics server. This interface provides an object-oriented model that is easily integrated into Java™ or .NET applications. The SOAP interface has an overhead cost that makes it unsuitable for applications that work with large amounts of data. Use of the SOAP interface requires the use of a toolkit that can consume "document/literal" WSDL files and create methods and classes, such as the Eclipse IDE or Microsoft Visual Studio.

You can use the SOAP interface to create generic applications that work with any report or report-specific applications that use a simplified "per-report" WSDL file that makes writing an application to work with a specific report easier. To create a SOAP application that works with any report, import the generic WSDL file into your toolkit using the following URL:

http://webservicename:portnumber/ibmcognos/bi/v1/disp/rds/.wsdl

**Identifying reports**

You can specify reports to run in three different ways with the Mashup Service, by using the report path, storeID, or searchPath. The storeID identifier for the same report will differ in different IBM Cognos Analytics server installations. However, the storeID remains unchanged if the report is moved within a content store.

You can manually find report identifiers using IBM Cognos Connection or programmatically inside an application. See “Finding reports” on page 31 for more information.

**path**

The path identifier represent a report by its simplified path. A path can have as its root:

- Public%20Folders for objects contained in "Public Folders"
- a tilde (~) for the "My Folders" of the current user
- CAMID(user) for the "My Folders" of another user

A sample path identifier is shown here.

Public%20Folders/Samples/Models/GO%20Sales%20(query)/Report%20Studio%20Report%20Samples/Order%20Invoices%20-%20Donald%20Chow%2c%20Sales%20Person

**storeID**

The path identifier represent a report by its storeID.

A sample storeID identifier is shown here.

i0E13089A0A21463582535CF2D47B45F8

**searchPath**

The path identifier represent a report by its search path.
A sample search path identifier is shown here.

```
/content/folder[@name='Samples']/folder[@name='Models']/package[@name='GO Sales (query)']/folder[@name='Reporting Report Samples']/report[@name='Order Invoices - Donald Chow, Sales Person']
```

## Output formats

You can choose to retrieve report information through the IBM Cognos Mashup Service in a number of different formats, giving you maximum flexibility to choose the type of output you need, depending on how you are going to process the data.

When writing applications that consume these formats, you should not assume that the outputs produced by the Mashup Service will not change over time. Although the outputs will always conform to the specifications described, the actual outputs returned may vary with new releases of this product.

### Layout Data (LDX)

Layout Data (LDX) is an XML format, based on the Layout Data Schema Reference, that is an abstraction of rendered IBM Cognos content. LDX is a suitable output if you are writing a generic application for use with any IBM Cognos resource.

See Chapter 7, “Understanding the Layout Data format,” on page 53 for a detailed description of this format.

### Simple format

Simple format is an XML format that is less complex than the LDX format. This format is suitable for use when you are writing a report-specific application. This format is deprecated and will be removed in a future release of this product.

See Chapter 8, “Understanding the Simple format,” on page 67 for a detailed description of this format.

### HTML

Requesting a report output in HTML format returns a complete Web page containing the requested output. An inline stylesheet in the head element contains style information. Use this format when you want to display the output as a Web page without any additional processing.

The following features of a report rendered in IBM Cognos Viewer are not supported by the Mashup Service HTML output:

- drill up and down links
- tooltips

### HTML fragment

Requesting a report output in HTML Fragment format returns a portion of a Web page containing the requested output. Style information is included within the elements in the fragment. Use this format when you want to add the output to a Web page without any additional processing.

The report output is returned as a `div` root element. This element contains child `div` elements that contain the report parts as HTML.

The limitation regarding HTML output also apply to this form of output.

### JavaScript Object Notation

JavaScript Object Notation (JSON) is a lightweight data interchange notation that is easy for programs to parse. It is suitable for use in programming environments where XML processing is not convenient.

The JSON output contains the same information as the LDX output.
**DataSet**

DataSet format is a simplified XML format that contains only the report data without any formatting information.

See Chapter 9, "Understanding the DataSet format," on page 75 for a detailed description of this format.

**DataSetAtom**

DataSetAtom format consists of DataSet output in an ATOM wrapper.

**DataSetJSON**

DataSetJSON format consists of DataSet output in a JSON wrapper.

**Image**

Image format returns the report output as a portable network graphic (.png) image.

---

**Sample programs**

The IBM Cognos Mashup Service includes sample programs that illustrate how to use the SOAP and REST interfaces to develop mashup applications. There are 3 sets of code samples:

- **Java samples** that illustrate the SOAP interface using the Java™ programming language.
- **C# samples** that illustrate the SOAP interface using the C# programming language.
- **JavaScript samples** that illustrate the REST interface.

These samples use the Mashup Service to get report outputs from the IBM Cognos Analytics samples. You can use them as learning tools or as examples to help you develop your own applications. See Chapter 3, "Cognos Mashup Service samples," on page 11 for more information on the samples.
Chapter 3. Cognos Mashup Service samples

The IBM Cognos Mashup Service includes code samples that illustrate how to use the SOAP and REST interfaces to develop mashup applications. There are 3 sets of code samples:

- Java samples that illustrate the SOAP interface using the Java programming language. For more information, see Java samples.
- C# samples that illustrate the SOAP interface using the C# programming language. For more information see C# samples.
- JavaScript samples that illustrate the REST interface. For more information, see JavaScript samples.

These samples use the Mashup Service to get report outputs from the IBM Cognos Analytics samples. You can use them as learning tools or as examples to help you develop your own applications.

In order to run these samples, you must have installed the Sample Outdoors Company sample databases and imported the sample packages from the sample deployment archive.

Java samples

The IBM Cognos Mashup Service includes Java program samples that show you some types of applications you can design. The samples include source files so that you can test making changes to the sample code, and batch files or shell scripts for compiling and running the samples.

The source files contain comments that describe the main purpose of each sample. The batch files and shell scripts contain instructions that you must follow before you run them. Each program sample also has an HTML page that explains the purpose of the sample, and provides instructions on how to run the sample.

Java sample file locations

The program samples are installed in folders under the installation_location/sdk/cms_samples/java folder. The contents of each folder are described here.

Authentication
  This sample program lets you pass the user credentials to the IBM Cognos server, retrieve the given report output in LayoutDataXML format, and display and save report output.

AuthenticationPrompt
  This sample program runs a report for a given search path and saves the layoutDataXML output to a file.

common_class
  This folder contains the class libraries generated by the Web services. These class libraries are used by all of the Java sample programs.

ExecReports
  This sample program runs a report and outputs the first page of report output in HTML format. You can then use First Page, Previous Page, Next Page, and Last Page buttons to retrieve subsequent output pages.

ExpandTreePrompt
  This sample program prompts for tree prompts for the Tree prompt sample report and then runs the report.

PromptAnswers
  This sample program runs the Returns by Order Method - Prompted Chart report using the Simple format and specifies values to satisfy the report prompts. It then outputs the value of the largest return quantity for Defective products for the Web order method that was specified by the prompt.
This sample program illustrates the use of Search & Select prompts using the Search Prompt Product report.

This sample program runs a report and returns a single report part.

**Running the Java samples**

You can run the Java sample programs from a command line or in the Eclipse IDE.

Each sample subdirectory contains the following files:

- A build.bat file that builds the Java sample on Windows operating systems.
- A run.bat file to run the Java samples on 32-bit Windows installations.
- A run64.bat file to run the Java samples on 64-bit Windows installations.
- A build.sh file that builds the Java sample on UNIX or Linux operating systems.
- A run.sh file to run the Java sample on UNIX or Linux operating systems.
- A `<sample_name>_Explain.html` file that describes the sample and lists any prerequisites for running it.
- One or more .java source files.
- .class files corresponding to each .java source file.

In addition, the Java directory contains the following files:

- A build-samples.bat file that allows you to build all the samples at once on Windows operating systems.
- A build-samples.sh file that allows you to build all the samples at once on UNIX or Linux operating systems.
- A JavaSamples.html file that lists all the samples and links to the individual description .html files.

You can run the Java sample programs from the command line or by using the Eclipse IDE, as shown here.

**Running the Java samples on Windows operating systems**

1. Ensure that a Java Development Kit, version 1.5 or higher, is installed.
2. Modify the .bat or .bat64 files so the JAVA_HOME variable points to the JDK location.
3. Run build-samples.bat to build all the samples or an individual build.bat to build a single sample.
4. Read the `<sample_name>_Explain.html` to get the instructions for running an individual sample.
   Note that some samples require anonymous access to the IBM Cognos server, while other samples can be used to test authenticated access.
5. Run run.bat (for 32-bit installations) or run64.bat (for 64-bit installations) for the sample you want to try.

**Running the Java samples on UNIX or Linux operating systems**

1. Ensure that a Java Development Kit, version 1.5 or higher, is installed.
2. Modify the .sh files so the JAVA_HOME variable points to the JDK location.
3. Run build-samples.sh to build all the samples or an individual build.sh to build a single sample.
4. Read the `<sample_name>_Explain.html` to get the instructions for running an individual sample.
   Note that some samples require anonymous access to the IBM Cognos server, while other samples can be used to test authenticated access.
5. Run run.sh for the sample you want to try.
Running the Java samples on the Eclipse IDE

1. Create a project in the Eclipse IDE with the installation_location/sdk/cms_samples/java folder as the source.
2. Add the .jar files referenced in the build.bat files to the build path.
3. Read the <sample_name>_Explain.html to get the instructions for running an individual sample.
   Note that some samples require anonymous access to the IBM Cognos server, while other samples can be used to test authenticated access.
4. Run the sample program from within the Eclipse IDE.

C# samples

The IBM Cognos Mashup Service includes C# program samples that show you some types of applications you can design. The samples include source files so that you can test making changes to the sample code, and batch files or shell scripts for compiling the samples.

The source files contain comments that describe the main purpose of each sample. The batch files and shell scripts contain instructions that you must follow before you run them. Each program sample also has an HTML page that explains the purpose of the sample, and provides instructions on how to run the sample.

C# sample file locations

The sample files are installed in folders under the installation_location/sdk/cms_samples/csharp folder. The contents of each folder are described here.

**Authentication**
This sample program lets you pass the user credentials to the IBM Cognos server, retrieve the given report output in LayoutDataXML format, and display and save report output.

**AuthenticationPrompt**
This sample program runs a report for a given search path and saves the layoutDataXML output to a file.

**bin**
This folder contains executable versions of all of the C# sample programs.

**CMSCommon**
This folder contains files common to all of the C# sample programs. It also contains the Web references generated from the Web services.

**ExecuteReports**
This sample program runs a report and outputs the first page of report output in HTML format. You can then use **First Page**, **Previous Page**, **Next Page**, and **Last Page** buttons to retrieve subsequent output pages.

**ExpandTreePrompt**
This sample program prompts for tree prompts for the **Tree prompt sample** report and then runs the report.

**PromptAnswers**
This sample program runs a report using the report-specific interface with defined prompt values.

**SearchPromptValue**
This sample program illustrates the use of Search & Select prompts using the **Search Prompt Product** report.

**SingleReportPartFetch**
This sample program runs a report and returns a single report part.
Running the C# samples

You can run the C# sample programs from a command line or in Microsoft Visual Studio or the Microsoft Visual C# IDE.

Each sample subdirectory contains the following files:

- A build.bat file that builds the C# sample.
- A `<sample_name>_Explain.html` file that describes the sample and lists any prerequisites for running it.
- A `<sample_name>_.csproj` Microsoft Visual Studio project file.
- One or more source files.

In addition, the csharp directory contains the following files:

- A CMS_Samples.sln Microsoft Visual Studio solution file.
- A CSharpSamples.html file that lists all the samples and links to the individual description .html files.

To run the C# samples, you can run the executable versions of the sample programs from the bin folder or, if you want to examine the sample programs in more detail, perform the following.

**Procedure**

1. Ensure that the Microsoft Visual Studio or Microsoft Visual C# IDE, version 2005 or later, is installed.
2. Open CMS_Samples.sln in the Microsoft Visual Studio or Microsoft Visual C# IDE.
3. Read the `<sample_name>_Explain.html` to get the instructions for running an individual sample.
   - Note that some samples require anonymous access to the IBM Cognos server, while other samples can be used to test authenticated access.
4. Run the sample in the Microsoft Visual Studio or Microsoft Visual C# IDE.

JavaScript samples

The IBM Cognos Mashup Service includes JavaScript program samples that show you some types of applications you can design. The samples include source files so that you can test making changes to the sample code.

The source files contain comments that describe the main purpose of each sample. Each program sample also has an HTML page that explains the purpose of the sample, and provides instructions on how to run the sample.

**JavaScript sample file locations**


The contents of cms.zip are described below.

- **atom**
  - This sample program explores the Mashup Service atom feed for a report.

- **authentication**
  - This sample program displays an HTML Fragment of a given report by passing the user credentials to the IBM Cognos Analytics server.

- **cmsExplorer**
  - This sample program traverses the Content Store and provides the URL to link to specific report parts.

- **common**
  - This folder contains files common to all of the JavaScript sample programs.

- **drillDown**
  - This sample program runs a report and drills down.
drillDownFromChart
   This sample program runs a report with a drillable chart and drills down when a specific area of the chart is clicked.

drillThrough
   This sample program performs a drill through using the Mashup Service.

drillThroughFromChart
   This sample program performs a drill through from one report to another report.

execReportPart
   This sample program displays an HTML Fragment of a report part and retrieves report outputs one page at a time.

getSavedReport
   This sample program displays an HTML Fragment of a saved report.

htmlAuthenticationPrompt
   This sample program retrieve an HTML fragment for a report part, and shows how to open the standard IBM Cognos Analytics logon/logoff pages in a separate window.

htmlPromptValue
   This sample program displays an HTML Fragment of a given report and prompts the user using HTML prompting if required.

htmlTreePrompt
   This sample program prompts for tree prompts and then runs the report with the selected prompts.

json
   This sample program runs a report in JSON format.

xpath
   This sample program retrieves a piece of the report using an XPath expression.

Running the JavaScript samples
   You can run the JavaScript sample programs in a Web browser.

   Each sample subdirectory contains the following files:
   • A <sample_name>_Explain.html file that describes the sample and lists any prerequisites for running it. The file also provides a link to run the sample.
   • One or more HTML source files.

   In addition, the cms directory contains a JavaScriptSamples.html file that lists all the samples and links to the individual description .html files. All the JavaScript samples can be run from the links in this file. It can be accessed using the following URL:

   http://webservername:portnumber/ibmcognos/samples/sdk/cms/JavaScriptSamples.html
Chapter 4. Developing Mashup Service applications using the REST interface

You can develop IBM Cognos Mashup Service applications that use the representational state transfer (REST) interface. REST is a lightweight interface that uses HTTP requests to communicate with the IBM Cognos Analytics server. This interface has a low overhead when dealing with large amounts of data.

The REST interface uses HTTP requests to communicate with the IBM Cognos Analytics server. The sample REST programs included with the Mashup Service use the XMLHttpRequest API to implement this communication. This API allows JavaScript programs to send HTTP requests directly to a server and to load the server responses into JavaScript objects. For simplicity, the REST code in this guide use HTML form GET action URLs to communicate with the BI server.

Creating a Mashup Service application includes the following steps common to all applications.

- Logging on and logging off
- Running Mashup Service methods
- Retrieving report data

Additional topics are covered in Chapter 6, “Performing additional tasks using the Mashup Service,” on page 31.

Considerations when using the HTTP POST action

If you use the HTTP POST action with the REST interface and your posted data is not just xmlData, you must include the request header Content-Type: application/x-www-form-urlencoded.

Logging on and logging off

If your IBM Cognos Analytics server requires authentication, you must log on before accessing report outputs. To log on, use either the standard IBM Cognos Analytics logon page or the authentication methods included with the Mashup Service.

Logging on using the standard IBM Cognos Analytics logon page

To log on using the standard IBM Cognos Analytics logon page, submit the following URL:

```
http://localhost/ibmcognos/bi/v1/disp?
b_action=xts.run&m=portal/close.xts&h_CAM_action=logonAs
```

The BI server returns a logon page that closes automatically after you enter your logon credentials. The htmlAuthenticationPrompt JavaScript sample uses this authentication method.

Logging on using the Mashup Service authentication methods

You can use the IBM Cognos Mashup Service authentication methods to logon.

**Important:** If you use a custom authentication provider to handle authentication, the provider must be able to use form fields to authenticate users. For more information, see the topics on authentication request flow scenarios and the JDBCSample sample program in the *IBM Cognos Custom Authentication Provider Developer Guide*.

Use the auth/logon resource type, submitting a credentials element with the xmlData option.
You can determine which credentials the server requires by submitting an empty credentials element:

```
http://localhost/ibmcognos/bi/v1/disp/rds/auth/logon?
xmlData=<credentials/>
```

The server response is a `credentialPrompt` element that lists `actualValue` elements for which the server has values and `missingValue` elements whose values must be supplied.

You can then submit an `auth/logon` request with a `credentials` element that contains values for the `missingValue` elements.

If your logon attempt is successful, the server sends a response containing an `accountInfo` element. If your logon request contains incorrect data, or still has missing values, the server response is another `credentialPrompt` element.

The following JavaScript code snippet illustrates how you can code a logon request.

To see this code in context, view the following sample:

`installation_location/webcontent/samples/sdk/cms/javascript/authentication/reportOutput.html`

```javascript
function doLogon()
{
    var myNameSpace=document.getElementById("nameSpace").value;
    var myUserName=document.getElementById("userName").value;
    var myPassword=document.getElementById("password").value;

    var xmlData =
    "xmlData=<credentials>"
    +"<credentialElements><name>CAMNamespace</name><label>Namespace:</label>
    +"<value><actualValue>"+myNameSpace+"</actualValue></value>
    +"</credentialElements>";
    +"<credentialElements><name>CAMUsername</name><label>User ID:</label>
    +"<value><actualValue>"+myUserName+"</actualValue></value>
    +"</credentialElements>";
    +"<credentialElements><name>CAMPassword</name><label>Password:</label>
    +"<value><actualValue>"+myPassword+"</actualValue></value>
    +"</credentialElements>";

    try
    {
        objXHR.open("POST", parent.settings.document.getElementById("serverURL").value + "/rds/auth/logon", false);
        objXHR.send(xmlData);
        checkLoginStatus();
    }
    catch (e)
    {
        alert("Error occurs when doing logon.\r\n"+e);
    }
}
```

**Logging off using the standard IBM Cognos Analytics user interface**

To log off from the BI server, submit the following URL:

```
http://localhost/ibmcognos/bi/v1/disp?b_action=xts.run&m=portal/logoff.xts
```

**Logging off using the Mashup Service authentication methods**

You can use the Mashup Service authentication methods to logoff.

Use the `auth/logoff` resource type as shown in the example here.

```
http://localhost/ibmcognos/bi/v1/disp/rds/auth/logoff
```
Running Mashup Service methods

The REST interface syntax for initial requests is

http://webservername:portnumber/ibmcognos/bi/v1/disp/zds/resource_type/source_type/source_id?option1=val1&option2=val2...

Some Mashup Service tasks require several interactive steps to complete. Examples include retrieving report output one page at a time, collecting report prompts, and drilling up or down in a report. In these cases, the initial request has the syntax displayed above. Secondary requests have the following syntax:

http://webservername:portnumber/ibmcognos/bi/v1/disp/zds/sessionOutput/conversationID/conv_ID/secondary_request?option1=val1&option2=val2...

For more information about the resource types, source types, options, and secondary requests, see Chapter 13, “REST interface reference,” on page 107.

Running asynchronous versus synchronous requests

Reports can be run synchronously or asynchronously. Asynchronous execution is the preferred, default method, because it significantly improves scalability.

The value of the async option determines how the report is run. Some operations, such as Drilling up and down in reports, are only supported with the asynchronous interface.

To run a report asynchronously without manual redirection by the Web client, use the following syntax:


The Web server returns the http redirect response code 303 and a redirect URL. If the Web client follows redirects, this process continues automatically until the report output is displayed. This is the default behavior if the async option is omitted.

To run a report asynchronously with manual redirection by the Web client, use the following syntax:


The Web server returns the http response code 202 and a response that includes a redirect URL. If this redirect URL is followed, then eventually the report output is displayed. The exact format of the response depends on the Web server that is running the IBM Cognos Analytics server.

To run a report synchronously, use the following syntax:


The response from the server is the report in the requested format.

Secondary operations

For some resource calls, secondary calls can be used to retrieve additional output after the initial call has completed.

For example, after using pagedReportData to get the first page of the report output, the next secondary method can be called to get the next page of report output. To make a secondary resource call, use the URL that accompanies the response to the initial call, append the secondary request name along with any options, and submit this URL to the BI server. For example, the response to a request for the first page of report output could include the following URL:

http://localhost/ibmcognos/bi/v1/disp/zds/sessionOutput/conversationID/ia1204bcaaa004c64b74921108f07c2277v=3
Submitting the following URL will retrieve the next page of report output:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/ia1204bcaaa004c64b74921108f07c227/next?v=3
```

**Retrieving report data**

You can retrieve report output or parts of it.

The `reportData` resource type retrieves the entire report output while the `pagedReportData` resource type retrieves report output one page at a time. For more information, see Obtaining paged report outputs.

**Obtaining report outputs in different formats**

You can choose output formats other than LDX.

Use the `fmt` option to specify output formats. See “Output formats” on page 9 for descriptions of the possible output formats.

When using the Image output format, use the `height` and `width` options to specify the size of the graphic returned.

**Obtaining paged report outputs**

Use the `pagedReportData` resource type to retrieve report outputs one page at a time. This output is similar to the paged HTML output from IBM Cognos Viewer.

The following example uses the sample report `Public Folders > Samples > Models > GO Data Warehouse (query) > Reporting Report Samples > Bursted Sales Performance Report` which has 16 pages of output when viewed with IBM Cognos Viewer. Running the following report:

```
http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/report/i475989eebe9e44dab3409a1e3d72d62?v=3
```

returns the data contained in the first page of the report, when viewed in IBM Cognos Viewer.

You can now retrieve additional pages of report output by submitting the `next` secondary request. See “Secondary operations” on page 19 for more information. Repeat this process to retrieve subsequent pages of report output.

You can also use `previous` to retrieve the previous page of report output, `first` to retrieve the first page of output, and `last` to retrieve the last page of report output. If you are retrieving the report in LDX format, the `secondaryOperations` element in the report output indicates which secondary requests are available. HTML and HTMLFragment outputs also indicate available secondary requests in a `div` element.
You can develop IBM Cognos Mashup Service applications that use a simple object access protocol (SOAP) interface in which SOAP messages are used to transmit requests and responses between client applications and the IBM Cognos Analytics server. This interface provides an object-oriented model that is easily integrated into Java™ or .NET applications.

Creating a Mashup Service application includes the following steps common to all applications:

- Setting up the integrated development environment (IDE)
- Logging on and logging off
- Creating a report service instance
- Running Mashup Service methods
- Retrieving report data
- Handling exceptions

Additional topics are covered in Chapter 6, “Performing additional tasks using the Mashup Service,” on page 31.

Generic versus report-specific applications

When developing applications using the SOAP interface, you can choose between a generic set of methods and classes that can be used with any IBM Cognos Analytics report, or a set of methods and classes that are specific to a particular report.

The generic methods are suitable when you use the LDX report format (see Chapter 7, “Understanding the Layout Data format,” on page 53) while the report-specific methods are suitable when you use the Simple report format (see Chapter 8, “Understanding the Simple format,” on page 67). One disadvantage of using the LDX report format is that the highly nested structure of LDX documents requires complex commands to access report data. However, the report-specific methods provide shortcuts to accessing report data, which results in less complex applications. For more information, see “Retrieving report data” on page 26.

Setting up the integrated development environment (IDE)

After creating a new project in the Eclipse IDE or in Microsoft Visual Studio, add a Web Service Client (Eclipse IDE) or a Web reference (Microsoft Visual Studio).

To create a generic application, access the generic service WSDL file with the following URL:

```
http://webservername:portnumber/ibmcognos/bi/v1/disp/ids/wsdl
```

To create a report-specific application, instead of importing the generic service WSDL file, access the report-specific service WSDL file with the following URL:

```
http://webservername:portnumber/ibmcognos/bi/v1/disp/ids/wsdl/source_type/source_id
```

`source_type` is either `path`, `report`, or `searchPath`, and is used to identify the report to use. The IDE consumes the WSDL file and create the Mashup Service-specific methods and classes for your application.
Logging on and logging off

If your IBM Cognos Analytics server requires authentication, import the authentication methods and classes using the following URL:

```
http://webservername:portnumber/ibmcognos/bi/v1/disp/ids/auth/wsd1
```

Use the `logon` method to log on to the Cognos Analytics server using the Mashup Service authentication methods.

You can determine which credentials the server requires by submitting an empty `credentials` element.

The server response includes a `credentialPrompt` element that lists `actualValue` elements for which the server has values and `missingValue` elements whose values must be supplied.

You can then submit another logon request with a `credentials` element that contains values for the `missingValue` elements.

If your logon attempt is successful, the server response includes an `accountInfo` element that provides authentication details.

If your log on request contains incorrect data, or still has missing values, the server response is another `credentialPrompt` element.

C# example

To see this code in context, view the following sample program:

```
installation_location/sdk/cms_samples/csharp/Authentication/genericAuthentication.cs
```

```csharp
AuthService authService = new AuthService();
authService.Url = url;

LogonRequestType authRequest = new LogonRequestType();
authRequest.credentials = new CredentialType();
authRequest.credentials.credentialElements = new CredentialElementType[3];
authRequest.credentials.credentialElements[0] = new CredentialElementType();
authRequest.credentials.credentialElements[0].name = "CAMNamespace";
authRequest.credentials.credentialElements[0].value = new ValueElementType();
authRequest.credentials.credentialElements[0].value.Item = nameSpace;
authRequest.credentials.credentialElements[1] = new CredentialElementType();
authRequest.credentials.credentialElements[1].name = "CAMUsername";
authRequest.credentials.credentialElements[1].value = new ValueElementType();
authRequest.credentials.credentialElements[1].value.Item = userName;
authRequest.credentials.credentialElements[2] = new CredentialElementType();
authRequest.credentials.credentialElements[2].name = "CAMPassword";
authRequest.credentials.credentialElements[2].value = new ValueElementType();
authRequest.credentials.credentialElements[2].value.Item = passWord;

LogonResponseType authResp = authService.logon(authRequest);
```

Java example

To see this code in context, view the following sample program:

```
installation_location/sdk/cms_samples/java/Authentication/genericAuthentication.java
```

```java
String nameSpaceStr=strNameSpace;    //namespace
String userNameStr=strUserName;      //username
String userPasswordStr=strPassword;  //password
String reportIDStr=strReportID;      //reportID

AuthServiceLocator authlocator = new AuthServiceLocator();
AuthServicePort authService = authlocator.getAuthServicePort(new URL(serverURL));
CredentialType credentialType = new CredentialType();

CredentialElementType nameSpaceElement = new CredentialElementType();
```
ValueElementType nameSpaceValue = new ValueElementType();
nameSpaceValue.setActualValue(nameSpaceStr);
nameSpaceElement.setName("CAMNamespace");
nameSpaceElement.setValue(nameSpaceValue);

CredentialElementType userNameElement = new CredentialElementType();
ValueElementType userNameValue = new ValueElementType();
userNameValue.setActualValue(userNameStr);
userNameElement.setName("CAMUsername");
userNameElement.setValue(userNameValue);

CredentialElementType passWordElement = new CredentialElementType();
ValueElementType passWordValue = new ValueElementType();
passWordValue.setActualValue(userPasswordStr);
passWordElement.setName("CAMPassword");
passWordElement.setValue(passWordValue);

//Login IBM Cognos server using the CMS Authentication Service
credentialType.setCredentialElements(new CredentialElementType[]{nameSpaceElement, userNameElement, passWordElement});
LogonRequestType logonRequest = new LogonRequestType(credentialType, null);
LogonResponseType logonResponse = authService.logon(logonRequest);

//Copy the SOAP header from the Authentication Service to CMS

When the application has completed, log off the user if your server requires authentication.

C# example

LogoffRequestType logoffRequest = new LogoffRequestType();
logoffResponseType logoffResp = authService.logoff(logoffRequest);

Java example

LogoffRequestType LogoffRequest = new LogoffRequestType();
LogoffResponseType logoff = authService.logoff(LogoffRequest);

Creating a report service instance

To create a report service instance that is used to run Mashup Service methods, create a ReportDataServicePort object (Java application) or a ReportDataService object (C# application).

C# example

ReportDataService svc = new ReportDataService();

Java example

static String serverURL = "http://localhost/ibmcognos/bi/v1/disp";
...
ReportDataServiceLocator rdslocator = new ReportDataServiceLocator();
ReportDataServicePort rdsservice = rdslocator.getReportDataServiceBinding(new URL(serverURL));

If you are creating a report-specific application, create a report_name object. The following example is based on the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Returns by Order Method - Prompted Chart used in the Prompt Answers sample programs.

C# example

CMSCommon.CCS_1.Returns__by__Order__Method___Prompted__Chart_Service service =
new CMSCommon.CCS_1.Returns__by__Order__Method___Prompted__Chart_Service();
service.Url = url + suffix;
If your application requires authenticated access to the server, copy the authentication credentials to the service object.

C# example

```csharp
svc.biBusHeaderValue = new CMSCommon.CCS_Generic.biBusHeader();
svc.biBusHeaderValue.Any = authService.biBusHeaderValue.Any;
svc.Url = url;
```

Java example

```java
((org.apache.axis.client.Stub) rdsservice).setHeader(headers[0]);
```

### Running Mashup Service methods

After authenticating with the IBM Cognos Analytics server and creating a IBM Cognos Mashup Service object, you can start issuing Mashup Service requests to the server.

All Mashup Service SOAP methods are asynchronous requests, except for the logon, logoff, getCognosURL, getOutputFormat, getOutputFormats, getPromptAnswers, getPromptPage, and release methods. When an asynchronous methods requests output from the server, the response from the server includes a session element, which contains a conversationID element and a status element. The conversationID element contains an identifier that allow subsequent method calls to refer to the same asynchronous conversation. The status element consists of either the value working or complete. When the value is complete, the server response also includes the requested output.

For a generic application, all asynchronous methods have GetOutputResponse as the response class, and the getOutput method is used to poll the BI server until the requested output is available. The session element is copied from the GetOutputResponse element to the subsequent GetOutputRequest element.

C# example

```csharp
while (response.session.status == SessionTypeStatus.working)
{
    GetOutputRequest waitRequest = new GetOutputRequest();
    waitRequest.session = response.session;
    response = svc.getOutput(waitRequest);
}
```

Java example

```java
while (response.getSession().getStatus() == SessionTypeStatus.working)
{
    GetOutputRequest oreq = new GetOutputRequest(response.getSession(), null);
    headers = ((org.apache.axis.client.Stub) rdsservice).getResponseHeaders();
    ((org.apache.axis.client.Stub) rdsservice).setHeader(headers[0]);
    response = rdsservice.getOutput(oreq);
}
```

For a report-specific application, the method used to poll the server is the same as the method used to initiate the asynchronous conversation. As in the case of a generic application, copy the session element from the response element to the next request element.

```java
result=response.getOutput().getFormatOutput();
```
C# example

```csharp
CMSCommon.CCS_1.GetReportResponseType response = service.getReport(request);
while (response.session.status == CMSCommon.CCS_1.StatusEnum.working) {
    request.session = response.session;
    response = service.getReport(request);
}
```

Java example

This application does not use authenticated access to the server, and the response header is not copied to the next method call.

```java
GetReportResponseType response = mashupService.getReport(request);
/* This loop is necessary when running asynchronously */
while (response.getSession().getStatus()== StatusEnum.working) {
    request.setSession(response.getSession());
    response=mashupService.getReport(request);
}
```

Secondary operations

For some method calls, secondary operations can be used to retrieve additional output after the initial method call has completed.

For example, after using `getPagedReportData` to get the first page of report output, the next secondary method can be called to get the next page of report output. When calling a secondary method, the session element is copied from the initial method response to the secondary method request. The following examples illustrate the use of secondary operations.

C# example

```csharp
GetPagedReportDataRequest req = new GetPagedReportDataRequest();
...
GetOutputResponse resp = svc.getPagedReportData(req);
resp = waitForOutput(resp);
...
NextRequest nextreq = new NextRequest();
nextreq.session = resp.session;
...
resp = svc.next(nextreq);
resp = waitForOutput(resp);
...
```

Java example

```java
GetPagedReportDataRequest req = new GetPagedReportDataRequest();
...
GetOutputResponse resp = svc.getPagedReportData(req);
resp = waitForOutput(resp);
...
NextRequest nextreq = new NextRequest();
nextreq.setSession(resp.getSession());
...
resp = svc.next(nextreq);
resp = waitForOutput(resp);
```
private GetOutputResponse waitForOutput(GetOutputResponse resp)
    throws RemoteException, CCSAuthenticationFault, CCSPromptFault, CCSGeneralFault
{
    while (resp.getSession().getStatus() == SessionTypeStatus.working)
    {
        GetOutputRequest waitReq = new GetOutputRequest(resp.getSession(), null);
        headers = ((org.apache.axis.client.Stub) svc).getResponseHeaders();
        ((org.apache.axis.client.Stub) svc).setHeader(headers[0]);
        resp = svc.getOutput(waitReq);
    }
    return resp;
}

You can also use previous to retrieve the previous page of report output, first to retrieve the first page
of output, and last to retrieve the last page of report output. If you are retrieving the report in LDX
format, the secondaryOperations element in the report output indicates which secondary requests
are available. HTML and HTMLFragment outputs also indicate available secondary requests in a div
element.

Retrieving report data

Report outputs can be retrieved using the Mashup Service methods in a variety of ways.

Generic applications

There are two methods you can use to retrieve report data in a generic application:

- The getPagedReportData method retrieves the first page of report output. The secondary methods
  next, previous, first, and last can be used to retrieve additional pages of report output.
- The getReportData method retrieves the complete report output. The output is retrieved as a single
  page unless includePageBreaks is true, in which case the report output is separated into pages.

To retrieve report output in a generic application, identify the report, using the sourceID and
sourceType elements in the request. For more information, see “Identifying reports” on page 8.

When the asynchronous report data request completes, the report output is contained in the output
child of GetOutputResponse. If the format option in the report data request is not used, the report
output will be contained in the LDXOutput child of output, and this report data can be accessed using
additional methods. If the format option is set, the report output will be contained in the FormatOutput
child of output as a string object.

Report-specific applications

When you create an application using a report-specific WSDL file, a number of customized methods are
available for retrieving report data.

These are the get_<element> and getFormatted_<element> methods. The <element> parts of the
method names correspond to the Simple format element names that are derived from LDX id elements,
see Chapter 8, “Understanding the Simple format,” on page 67. For example, the Simple format
structure of the Employee Satisfaction 2012 report is shown in Chapter 8, “Understanding the Simple
format,” on page 67. The versions of the get_<element> method for this report are:

- get_Page1
- get_FirstPage_x005FReportTitle2121
- get_FirstPage_x005FSubtitle1121
- get_Combination__Chart___x002D__survey__topic__scores__by__department
- get_Combination__Chart___x002D__survey__scores__and__benchmark
- get_Crosstab1
- get_RunDate1
There are two sets of methods that report-specific applications can use to retrieve report output:

- The `getReport` and `get_<element>` methods retrieve report output in Simple format and the report output can be accessed using additional methods.
- The `getFormattedReport` and `getFormatted_<element>` methods retrieve report output in the format specified in the `format` object in the request. The response is contained in a string object.

### Report-specific method limitations for some reports

The customized methods are not available for reports with certain structural elements. In addition, the `getReport` method returns the report output in Layout Data (LDX) format, not in Simple format. The response is returned in the report-specific namespace, not in the generic LDX namespace.

Reports with the following structural elements are subject to this limitation:

- Lists that contain list, crosstab, repeater, or repeater table objects. This case includes lists that are split into sections.
- Crosstabs that contain dimensions with the same label but different data items.
- Lists that use report expressions or data item values as the column title.

### Report output examples

The following examples illustrate different ways of accessing the same data item in a report. The report is **Employee Satisfaction 2006** and we are retrieving the value in the **Employee rankings and terminations by department** crosstab for the row **Human Resources** and column **Satisfactory Employee ranking**.

#### Generic application with pagedReportData method

This example retrieves the entire report, and then parts of it are selected.

The report is run using the `getPagedReportData` method with the default options. A snippet of the LDX output is shown here.

```xml
<document...>
    <pages>
      <page>
        <id>Page1</id>
        ...
        <body>
          <item>
            <tbl>
              <tr>
                ...
              </tr>
              <tr>
                <td>
                  ...
                </td>
              </tr>
            </tbl>
            <ctab>
              <id>Crosstab1</id>
              <table>
                <row>
                  <cell>
                    ...
                  </cell>
                  <cell>
                    ...
                  </cell>
                  <item>
                    <txt>
                      <val>0.0294117647058824</val>
                      ...
                    </txt>
                  </item>
                </row>
                ...
              </table>
            </ctab>
          </item>
          ...
        </body>
      </page>
    </pages>
</document>
```

The following code snippets show how the highlighted value can be retrieved.
C# example

```csharp
LDXOutputType ldx = response.output.Item as LDXOutputType;
Document doc = ldx.Item as Document;
pagesType[] pgs = doc.pages as pagesType;
Page pge = pgs[0].Item as Page;
ReportElement body = pge.body as ReportElement;
ReportElementTbl[] tbl = body.Item as ReportElementTbl;
CrossTab ctab = tbl[0].trow[1].tcell[1].item[0].Item as CrossTab;
TextFrame txt = ctab.table[0].cell[1].item[0].Item as TextFrame;
String value = txt.val as String;
```

Java example

```java
value = resp.getOutput().getLDXOutput().getDocument().getPages(0).getPage().getBody()
    .getTbl()[0].getTrow(0).getTcell(0).getItem(0).getCtab().getTable()[0]
    .getCell(1).getItem(0).getTxt().getVal();
```

Generic application with pagedReportData method using filter and includeLayout options

This example retrieves a portion of the report, and then parts of it are selected. The report is run using the `getPagedReportData` method with a `filters` element to select the crosstab (`filterType` = `OBJECT_ID` and `filterValue` = `Crosstab1`). A snippet of the LDX output is shown here.

```xml
<reportElement>
  <ctab>
    <id>Crosstab1</id>
    ...<table>
      <row>
        <cell>...</cell>
      </row>
      <cell><item><txt><val>0.0294117647058824</val>...</txt></item></cell>
      ...<cell><item><txt><val>28</val>...</txt></item></cell>
    </table>
  </ctab>
</reportElement>
```

The following code snippets show how the highlighted value can be retrieved.

C# example

```csharp
LDXOutputType ldx = response.output.Item as LDXOutputType;
FilterResultSet frs = response.output.Item as FilterResultSet;
CrossTab ctab = frs.filterResult[0].reportElement[0].Item as CrossTab;
TextFrame txt = ctab.table[0].cell[1].item[0].Item as TextFrame;
String value = txt.val as String;
```

Java example

```java
value = resp.getOutput().getLDXOutput().getFilterResultSet().getFilterResult(0)
    .getReportElement(0).getCtab().getTable()[0].getCell(1).getItem(0).getTxt().getVal();
```

Report-specific application with `get_Crosstab1` method

The report is run using the `get_Crosstab1` method with the default options. A snippet of the Simple output is shown here.

```xml
<results xmlns="...">
  <Crosstab1>
    ...<table>
      <row>
        <cell>...</cell>
      </row>
      <cell><item><txt><val>28</val>...</txt></item></cell>
    </table>
  </Crosstab1>
</results>
```
The following code snippets show how the highlighted value can be retrieved.

**C# example**

```csharp
cmscommon.CCS_1.TextFrame tframe = (CMSCommon.CCS_1.TextFrame)response.
    results.Crosstab1.table[0].cell[1].item[0].Item;
String value = (String)tframe;
```

**Java example**

```java
TextFrame txt = (TextFrame)resp.results.Crosstab1.table[0].cell[1].item[0].Item;
String value = txt.val;
```

### Handling exceptions

Your application will need to handle both Mashup Service-specific exceptions and general exceptions.

**C# example**

```csharp
try
{
    if (ex.Detail != null)
    {
        if (ex.Detail.FirstChild.LocalName == "CCSPromptFault")
        {
            System.Console.WriteLine(ex.ToString());
            return "Please make sure the report ID is correct ...";
        }
        else if (ex.Detail.FirstChild.LocalName == "CCSAuthenticationFault")
        {
            System.Console.WriteLine(ex.ToString());
            return "Login Failed. Please try again.";
        }
        else if (ex.Detail.FirstChild.LocalName == "CCSGeneralFault")
        {
            System.Console.WriteLine(ex.ToString());
            return "Please make sure the report ID is correct ...";
        }
        else
        {
            return (ex.Message);
        }
    }
    else
    {
        System.Console.WriteLine("ERROR: " + ex.Message);
        return (ex.Message);
    }
}
```

**Java example**

```java
try
{
    catch (CCSGeneralFault e) {
        e.printStackTrace();
        return "Please make sure the report ID is correct ...";
    }
    catch (CCSPromptFault e) {
        e.printStackTrace();
        return "Please make sure the report ID is correct ...";
    }
    catch (CCSAuthenticationFault e) {
        e.printStackTrace();
        return "Login Failed. Please try again.";
    }
    catch (RemoteException e) {
        e.getMessage();
        return e.getMessage();
    }
}
```
catch (ServiceException e) {
    e.printStackTrace();
    return e.getMessage();
}
catch (Exception e) {
    e.printStackTrace();
}
Chapter 6. Performing additional tasks using the Mashup Service

You can use the Mashup Service to perform a number of tasks related to running reports. You can perform the following tasks:

- Finding reports
- Finding report parts
- Accessing parts of a report output
- Saving report versions
- Accessing saved report versions
- Running reports and retrieving output in IBM Cognos Viewer formats
- Accessing report outputs saved by IBM Cognos Analytics studios
- Running reports with prompts
- Drilling up and down in reports
- Drilling through to another report
- Using a URL to display a report in IBM Cognos Viewer

The following topics provide general descriptions on how to perform these tasks using the Mashup Service.

Finding reports

In order to retrieve report output using the Mashup Service, you first need to identify a report. Report identifiers can be either directly given in an application, either supplied by a user or hardcoded into the application, or they can be discovered programmatically.

Identifying reports programmatically

SOAP applications can discover reports in a content store by using methods from the IBM Cognos Software Development Kit. The Content Store Explorer sample program included with the IBM Cognos Software Development Kit demonstrates the use of these methods. See the IBM Cognos Software Development Kit Developer Guide for more information.

REST applications can use the Web Service Inspection Language (WSIL) to recursively explore a content store and reveal reports within it. Typing http://localhost/ibmcognos/bi/v1/disp/rdss/wsil in a Web browser will generate the XML output shown here.

```xml
...<inspection xmlns="http://schemas.xmlsoap.org/ws/2001/10/inspection/"
 xmlns:wsilwsi="http://schemas.xmlsoap.org/ws/2001/10/inspection/wsi/"
 location="http://localhost:80/ibmcognos/bi/v1/disp/rdss/wsil
 /path/Public%20Folders/sales_and_marketing">
 <link referencedNamespace="http://schemas.xmlsoap.org/ws/2001/10/inspection/"
 location="http://localhost:80/ibmcognos/bi/v1/disp/rdss/wsil
 /path/Public%20Folders/Samples">
 <abstract>sales_and_marketing</abstract>
 </link>
 <link referencedNamespace="http://schemas.xmlsoap.org/ws/2001/10/inspection/"
 location="http://localhost:80/ibmcognos/bi/v1/disp/rdss/wsil
 /path/Public%20Folders/Samples">
 <abstract>Samples</abstract>
 </link>
</inspection>
```
This XML output lists the subfolders of the Public Folder" folder of the IBM Cognos installation. Copying the Web address for the Samples folder into the Web browser address bar will generate the following output.

...<link referencedNamespace="http://schemas.xmlsoap.org/ws/2001/10/inspection/"
  location="http://localhost:80/ibmcognos/bi/v1/disp/rds/wsill/path/Public%20Folders/Samples/Metrics">
  <abstract>Metrics</abstract>
</link>
...<link referencedNamespace="http://schemas.xmlsoap.org/ws/2001/10/inspection/"
  location="http://localhost:80/ibmcognos/bi/v1/disp/rds/wsill/path/Public%20Folders/Samples/Models">
  <abstract>Models</abstract>
</link>
...

This procedure can be repeated until the contents of a subfolder are not other subfolders, but are reports, as shown here.

...<service>
  <name>2005 Quarterly Sales Forecast</name>
  <abstract>IBM Cognos Content service</abstract>
  <description referencedNamespace="http://schemas.xmlsoap.org/wsdl/"
</service>
...<service>
  <name>2005 Sales Summary</name>
  <abstract>IBM Cognos Content service</abstract>
  <description referencedNamespace="http://schemas.xmlsoap.org/wsdl/"
</service>
...

The paths of these reports can now be used to retrieve report outputs from these reports.

The URLs used previously are examples of the wsil and wsdl resource types.

The cmsExplorer JavaScript sample program uses the methods described to navigate a content store and run selected reports.

Finding report parts

Using the Mashup Service you can work with individual report parts, as well as with complete reports. Report parts are named parts of a report specification. Names are automatically generated by Reporting for major pieces of a report (lists, crosstabs, charts, etc.) and users can name report parts in Reporting.

Use the ATOM feed for a report to get a list of report parts. The list includes the associated URLs of the report parts and this can be used during application development to determine which report parts should be extracted. The ATOM feed can also be used at runtime to offer a list of report parts to an application user, who can then select the desired output.

To get the ATOM feed for the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Satisfaction 2006 submit the following URL to the IBM Cognos Analytics server.

http://localhost/ibmcognos/bi/v1/disp/rds/atom/path/Public%20Folders/Samples/Models/GO%20Data%20Warehouse%20%28analysis%29/Report%20Studio%20Report%20Samples/Employee%20Satisfaction%202006

The ATOM output for a report or report part contains information about the report or report part, followed by one or more atom:entry elements that contain information about, and links to, the report parts that make up the report or report part. The ATOM output contains standard ATOM elements as well as
elements that are unique to the Mashup Service. See atom for a description of the Mashup Service-
specific elements.

An annotated version of the ATOM output is shown here.

```xml
<atom:feed...>
  <atom:title>Employee Satisfaction 2006</atom:title>
  <atom:author>
    <atom:name>Anonymous</atom:name>
  </atom:author>
  <atom:link rel="self" type="application/atom+xml" href="..."/>
  <atom:link rel="alternate" type="text/html" href="..."/>
  <atom:link rel="alternate" type="application/x-pagedldx+xml" href="..."/>

  ...<d:location>Public Folders > Samples > Models > GO Data Warehouse (analysis)
  > Reporting Report Samples > Employee Satisfaction 2006</d:location>

  <d:description>This report shows employee satisfaction survey results by department, compared to targets and industry standards. It also shows employee
  rankings and terminations.</d:description>
  <d:thumbnailURL>.../d:thumbnailURL>
  <atom:entry>
    ...<d:title>Page1</d:title>
    <atom:link rel="alternate" type="application/atom+xml"
      href="http://localhost:80/ibmcognos/bi/v1/disp
      /rds/atom/path/Public%20Folders/Samples/Models
      /GO%20Data%20Warehouse%20%28analysis%29
      /Report%20Samples/Employee%20Satisfaction%202006?selection=Page1&eltype=page"/>
    <atom:link rel="alternate" type="application/x-ldx+xml"
      href="http://localhost:80/ibmcognos/bi/v1/disp/rds/reportData
      /path/Public%20Folders/Samples/Models/GO%20Data%20Warehouse%20%28analysis%29
      /Report%20Samples/Employee%20Satisfaction%202006?selection=Page1&eltype=page"/>
    <atom:link rel="alternate" type="application/x-pagedldx+xml"
      /report/13fcccdd8960f9496ae086b252c9c57?selection=Page1&version=LATEST"/>
    <cm:location>Public Folders > Samples > Models > GO Data Warehouse (analysis)
      > Reporting Report Samples > Employee Satisfaction 2006 > Page1</cm:location>
    <d:type>page</d:type>
    <d:storeID>i3fccdd8960f94960aed086b252cc9c57</d:storeID>
    <d:partID>Page1</d:partID>
  </atom:entry>
</atom:feed>
```

The ATOM feed contains a lot of information about the report, including its name, summary description, author, location, and the URLs to run the report using the pagedReportData and reportData REST resources. The atom:entry elements provide information about the report parts contained in this report. In particular, the <atom:link rel="alternate" type="application/atom+xml" href="..."/> elements can be used to recursively obtain the ATOM feed for each report part. This procedure can be repeated until the ATOM feed provides atom:entry elements for the base report parts of the report. An example is shown here.
The atom JavaScript sample program illustrates the use of ATOM feeds to identify report parts and view their Mashup Service HTML output.

**Accessing parts of a report output**

You can filter the report output that is returned from the IBM Cognos Analytics server in a number of ways. Filtering the amount of report output that is returned can improve performance considerably.

Except as noted in the following topics, filtering can be used for any output format. See “Filter output structure” on page 57 for a description of filtered LDX output and “Filter output structure in Simple format” on page 68 for a description of filtered Simple output.

**Accessing named report parts**

You can restrict the report output to specific named report parts. This option is available for all output formats.

Although report part names must be unique within a report, it is possible that a report page name will be the same as a report part name. In this case, use the `excludePage` option (REST applications) or the `excludePage` element (SOAP applications) to retrieve the report part instead of the report page.

**REST example**

In a REST application use the `selection` option to return only named report parts. To return more than one part in a single request, separate report part names with a semi-colon (;). An example is shown here:

```
selection=list1;list3
```

**SOAP example**

In a SOAP application, include `filters` objects in the report output request. The value of the `filterType` child object is `OBJECT_ID` and the value of the `filterValue` child object is the report part name. Include one `filters` object for each report part to be returned.

**Using XPath expressions to filter report output**

You can use XPath expressions to filter report output. You can only use XPath expressions to filter LDX report output. For example, the sample report `Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Satisfaction 2006` can be filtered on the XPath expression `/document/pages/page[id='Page1']/body/item/tbl/trow[2]/tcell/item/ctab[id='Crosstab1']/table`.

A portion of the layout data output is shown here.

```
<filterResultSet xmlns="http://developer.cognos.com/schemas/rds/contentmodel/1">
  <filterResult>
    <filterType>XPATHT</filterType>
    <filterValue>/document/pages/page[id='Page1']/body/item/tbl/trow[2]/tcell/item/ctab[id='Crosstab1']/table</filterValue>
    <reportElement>
      <table>
        ...
      </table>
    </reportElement>
  </filterResult>
</filterResultSet>
```

Only a subset of the full XPath 2.0 specification is supported. In particular, the only axis available is the `child` axis (either specified or implied) and the only predicate functions available are `local-name()` and `pos()`. The XPath location is evaluated relative to the LDX representation of the report, before any selection filters have been applied.
The supported syntax for the XPath query parameter includes:

- Absolute rooted paths (/document/page) and descendent path (//page)
- The XPath child axis is supported. The following examples will filter on all charts or lists:
  - /document/pages/page/body/item[cht or lst]
  - /document/pages/page/body/item[child::cht or child::lst]
- * as a wildcard matching any element, such as (//page/*/item
- Predicates based on a descendent axis, using =, <, or > comparisons, such as //page[id=Page1]
- Predicates based on index and position, such as //page[2] or //page[pos()]2
- Compound predicates with a single binary operator (either or and), such as //page[pos()]>10 and pos()<20, //item[text/ref=R19, text/ref=R21], or //styleGroup[hAlign=CENTER][vAlign=TOP]

Unsupported XPath syntax includes:

- Nested predicates, such as /a[b[(c=3)]
- Lookback predicates, such as /a[../b=3]

**Note:** The output returned will be an LDX filterResultSet object with the value of filterType being XPATH and filterValue containing the XPath expression. The response will not necessarily validate against the Layout Data schema.

**REST example**

In a REST application use the xpath option to filter on an XPath expression. An example is shown here:

```
xpath=/document/pages/page[id='Page1']/body/item/tbl/trow[2]/tcell/item/ctab[id='Crosstab1']/table
```

**SOAP example**

In a SOAP application, include filters objects in the report output request. The value of the filterType child object is XPATH and the value of the filterValue child object is the XPath expression. Set the format to be layoutDataXML. The response will be contained in the FormatOutput object in the response.

**Restricting the number of rows of output**

You can restrict the report output to a maximum number of rows by using the rowLimit option (REST applications) or the rowLimit element (SOAP applications).

**Running reports and retrieving output in IBM Cognos Viewer formats**

You can run reports and retrieve outputs in the formats used by IBM Cognos Viewer (such as PDF, CSV, Microsoft Excel).

You can use the outputFormats resource type (REST applications) or the getOutputFormats method (SOAP applications) to retrieve a list of supported output formats for a report. The list is contained in a GetOutputFormatsResponse element. You can then use the outputFormat resource type (REST applications) or the getOutputFormat method (SOAP applications) to obtain the report output in a specified format.

**REST example**

The following URL requests a list of the supported output formats for the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Satisfaction 2012.
The response from the IBM Cognos Analytics Server is shown here:

```xml
<rds:GetOutputFormatsResponse>
  <rds:supportedFormats>
    <rds:outputFormatName>CSV</rds:outputFormatName>
    <rds:outputFormatName>MHT</rds:outputFormatName>
    <rds:outputFormatName>PDF</rds:outputFormatName>
    <rds:outputFormatName>spreadsheetML</rds:outputFormatName>
    <rds:outputFormatName>XLWA</rds:outputFormatName>
    <rds:outputFormatName>XML</rds:outputFormatName>
    <rds:outputFormatName>xlsxData</rds:outputFormatName>
  </rds:supportedFormats>
</rds:GetOutputFormatsResponse>
```

To run the report and retrieve the output for the **Crosstab1** report part in PDF format, submit the following URL to the BI Server:

http://localhost/ibmcognos/bi/v1/disp/rds/outputFormat/report/i1AD695527913442D92D07DB3425740F/PDF?v=3&selection=Crosstab1

**SOAP example**

The following code snippets shows how to perform the same actions as in the REST example.

**C# sample**

```csharp
rds.ReportDataService svc = new rds.ReportDataService();
rds.GetOutputFormatsRequest formatsreq = new rds.GetOutputFormatsRequest();
    formatsreq.sourceID = "i1AD695527913442D92D07DB3425740F";
    formatsreq.sourceType = rds.SourceTypeEnum.report;
    rds.GetOutputFormatsResponse formats = svc.getOutputFormats(formatsreq);
    foreach (String format in formats.supportedFormats.outputFormatName)
    {
        System.Console.WriteLine("Supporting: " + format);
    }

rds.Filter report_part = new rds.Filter();
    report_part.filterType = rds.FilterTypeEnum.OBJECT_ID;
    report_part.filterValue = "Crosstab1";
    formatreq.sourceID = "i1AD695527913442D92D07DB3425740F";
    formatreq.sourceType = rds.SourceTypeEnum.report;
    formatreq.outputFormatName = "PDF";
    formatreq.filters = new rds.Filter[] { report_part };
    rds.GetOutputFormatResponse formatresp = svc.getOutputFormat(formatreq);
    System.Console.WriteLine("URL: " + formatresp.outputFormatURL);
```

**Java sample**

```java
ReportDataServiceLocator rdslocator = new ReportDataServiceLocator();
ReportDataServicePort rdsservice =
    rdslocator.getReportDataServiceBinding(new URL(url));
GetOutputFormatsRequest formatsreq = new GetOutputFormatsRequest();
    formatsreq.setSourceID("i1AD695527913442D92D07DB3425740F");
    formatsreq.setSourceType(SourceTypeEnum.report);
GetOutputFormatsResponse formatsresp =
    rdsservice.getOutputFormats(formatsreq);
for (String str : formatsresp.getSupportedFormats().getOutputFormatName())
    { System.out.println("Supporting: " + str); }

GetOutputFormatRequest req = new GetOutputFormatRequest();
    req.setSourceID("i1AD695527913442D92D07DB3425740F");
    req.setSourceType(SourceTypeEnum.report);
```
saving report versions

Use the saveOutput option (REST applications) or the saveOutput option (SOAP applications) when running a Mashup Service report to save a version of the report output in the Content Store. In order to save report versions in the Content Store, the report properties must be set to save report output versions. The option Enable enhanced user features in saved output versions does not need to be checked on the Advanced options report properties page.

accessing saved report versions

You can retrieve reports that have been saved using the IBM Cognos Mashup Service as well as reports saved in IBM Cognos Viewer.

Use the version and versionID options (REST application) and the versionType and versionName elements (SOAP application) to retrieve a saved version of a report.

Tip: The value of the versionID option or versionName element for a saved report can only be determined by using the IBM Cognos Software Development Kit. The ContentStoreExplorer sample program included with the Software Development Kit can be used to determine the version names of stored reports. See the IBM Cognos Software Development Kit Developer Guide for more information.

accessing report outputs saved by IBM Cognos Analytics studios

You can retrieve reports outputs saved by Analysis Studio, Query Studio, and Reporting.

Use the outputFormat resource type (REST application) or the getOutputFormat method (SOAP application) to retrieve reports outputs. The report output can only be retrieved in the format it was saved in, and it cannot be filtered. However, the burstID and burstKey options can be specified

- If the fmt option is specified, the report output will be retrieved in the specified format if there is a version saved in that format. Otherwise, the IBM Cognos Analytics server will return an error page of type 404.
- A particular version of a saved report cannot be retrieved.
Running reports with prompts

To run reports with prompts, you need to determine prompt values and then submit them to the IBM Cognos Analytics server when running the report.

Collecting prompts

You can use the standard IBM Cognos user interface to collect prompt answers, or you can collect the answers yourself.

Using the IBM Cognos prompt page interface

You can use the standard IBM Cognos prompt page interface to display prompts to the users.

Submit a `promptPage` request (REST) or a `getPromptPage` request (SOAP) to the BI server. The server response includes a url than can be used to display the prompt page. A sample prompt request page is shown here.

![Prompt request page](image)

Figure 2: Prompt request page

After the user submits prompt answers using this interface the browser window closes. You can then retrieve the prompt answers by submitting a `promptAnswers` request (REST) or a `getPromptAnswers` request (SOAP) to the BI server.

You can then run the report, submitting the prompt answers along with the report request. See “Running a report with prompts” on page 49 for more information.

Examples using the REST and SOAP interfaces are shown here. The examples are based on the sample report `Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Global Bonus Report`.

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You can then run the report, submitting the prompt answers along with the report request. See “Running a report with prompts” on page 49 for more information.

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**Running a report with prompts**

To run reports with prompts, you need to determine prompt values and then submit them to the IBM Cognos Analytics server when running the report.

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You can use the standard IBM Cognos user interface to collect prompt answers, or you can collect the answers yourself.

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You can use the standard IBM Cognos prompt page interface to display prompts to the users.

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Figure 2: Prompt request page

After the user submits prompt answers using this interface the browser window closes. You can then retrieve the prompt answers by submitting a `promptAnswers` request (REST) or a `getPromptAnswers` request (SOAP) to the BI server.

You can then run the report, submitting the prompt answers along with the report request. See “Running a report with prompts” on page 49 for more information.

Examples using the REST and SOAP interfaces are shown here. The examples are based on the sample report `Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Global Bonus Report`.
REST example
Submit the following URL to the server using the promptPage resource type. In this case we are using the ID of the report:

```
http://localhost/ibmcognos/bi/v1/disp/rds/promptPage/report
/ia195960a5e77488cb4583d74b56c78d6?v=3
```

The response looks like the following:

```xml
<rds:GetPromptPageResponse>
  <rds:promptID>ieb88ba5380774c85b13491fc90acdd32</rds:promptID>
  <rds:url>
    &m=ccs/ccs_prompt.xts
    &ui.object=storeID("ia195960a5e77488cb4583d74b56c78d6")
    &promptID=ieb88ba5380774c85b13491fc90acdd32
  </rds:url>
</rds:GetPromptPageResponse>
```

Typing the url element into a Web browser address bar returns the standard IBM Cognos prompt page.

After the user submit prompt answers using this interface the browser window closes. You can retrieve the prompt answers by using the following URL with the promptAnswers resource type, in which the conversationID field contains the value of the promptID field in the initial response from the server:

```
http://localhost/ibmcognos/bi/v1/disp/rds/promptAnswers
/conversationID/ieb88ba5380774c85b13491fc90acdd32?v=3
```

If you selected the Asia Pacific branch region and the year 2006 as the prompt values, the server returns the following response.

```xml
<rds:promptAnswers>
  <rds:promptValues>
    <rds:name>pYear</rds:name>
    <rds:values>
      <rds:item>
        <rds:SimplePValue>
          <rds:inclusive>true</rds:inclusive>
          <rds:useValue>
            [Employee summary].[Time].[Time].[Year]->[Time].[2006]
          </rds:useValue>
          <rds:displayValue>2006</rds:displayValue>
        </rds:SimplePValue>
      </rds:item>
    </rds:values>
  </rds:promptValues>
  <rds:promptValues>
    <rds:name>pRegion</rds:name>
    <rds:values>
      <rds:item>
        <rds:SimplePValue>
          <rds:inclusive>true</rds:inclusive>
          <rds:useValue>
            [Employee summary].[Employee by region].[Employee by region].
            [Branch region]->[Employee by region].[740]
          </rds:useValue>
          <rds:displayValue>Asia Pacific</rds:displayValue>
        </rds:SimplePValue>
      </rds:item>
    </rds:values>
  </rds:promptValues>
</rds:promptAnswers>
```

SOAP example
Submit a getPromptPage request to the BI server, specifying the sourceType and sourceID of the report.

The response from the server includes promptID and url objects. Display the url to the user in a Web browser.
After the user enters prompt values, the Web page closes. Submit a `getPromptAnswers` request to the server, including in the request the `promptID` that was in the response from the `getPromptPage` request. The server response contains `promptValues` elements that include the chosen values for the prompts.

**Note:** The generic and report-specific versions of `getPromptPage` and `getPromptAnswers` differ slightly. The generic versions use `promptID` to link the two methods, while the report-specific versions use `session` for this purpose.

**Collecting prompts with an alternate interface**

You can collect prompt answers using a custom interface.

Use the `reportPrompts` resource type (REST application) or the `getReportPrompts` method call (SOAP application).

The response is an LDX document that describes the possible prompt values for the report. (See Prompt request page in LDX format for more information.)

This method of retrieving possible prompt values is not available for report-specific SOAP applications.

**Collecting prompts from a tree prompt page**

Some reports have a tree prompt page. An example of such a report is the sample report `Public Folders > Samples > Models > GO Data Warehouse (query) > SDK Report Samples > Tree prompt sample`.

If you use the IBM Cognos prompt user interface, the prompt page has a hierarchical tree structure that you can use to drill down to a product category or product.
After you submit prompt values, they can be retrieved in the same way as any other prompted report. If you collect prompts yourself, retrieve the prompt information that is associated with the first level hierarchy (Products). For more information, see “Collecting prompts with an alternate interface” on page 40.

To drill down to lower levels in the prompt tree, use the treePromptNode secondary operation, to specify the pname and use values from the response. The response is an RDS page that contains a treePromptNode element. For example:

```xml
    <rds:options>
        <rds:useValue>
            [Sales].[Products].[Products].[Product line]->[all].[991]
        </rds:useValue>
        <rds:displayValue>Camping Equipment</rds:displayValue>
    </rds:options>
    <rds:options>
        <rds:useValue>
            [Sales].[Products].[Products].[Product line]->[all].[992]
        </rds:useValue>
        <rds:displayValue>Mountaineering Equipment</rds:displayValue>
    </rds:options>
    <rds:options>
        <rds:useValue>
            [Sales].[Products].[Products].[Product line]->[all].[993]
        </rds:useValue>
    </rds:options>
</rds:treePromptNode>
```
You can submit a prompted report to run by submitting the `pname` and `useValue` values, or you can submit extra `treePromptNode` requests by specifying the original `pname` value and a `useValue` value from the response. If you attempt to drill down below the lowest level, the response is an empty `treePromptNode` element.

**REST example**

This example is based on the Tree prompt sample report available in the sample database. Submit the following URL to the IBM Cognos Analytics server:

```
/iAB3DAAF3A4A9446E9445C6C0C1693EC2?v=3
```

The response is an LDX page that contain the **Products** category. Note the URL that is associated with the response page: Submit the following secondary request:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput
/conversationID/iD41D1EE47B1148EB97B57C7CB4AEBBB
/treePromptNode?v=3&p_ProductPara=[Sales].[Products].[Products].[Products]->[all]
```

The response is the `treePromptNode` element. Select the **Personal Accessories** category to drill down further, by using the following request:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput
/conversationID/iD41D1EE47B1148EB97B57C7CB4AEBBB
/treePromptNode?p_ProductPara=[Sales].[Products].[Products].[Product line]->[all].[993]
```

You can use the response to run the report on the **Binoculars** category as described in “Running a report with prompts” on page 49 by using the following parameter:

```
p_ProductPara=[Sales].[Products].[Products].[Product type]->[all].[993].[963]
```

**SOAP example**

For examples of using tree prompts in the C# and Java programming languages, see the ExpandTreePrompt samples programs.

**Collecting Select & Search prompt values**

Some reports collect prompt values that are based on search criteria that are specified by the report user. An example of such a report is **Public Folders > Samples > Models > GO Data Warehouse (query > SDK Report Samples > Search Prompt Product**.

If you use the IBM Cognos prompt user interface, you see the following prompt page.
After you type keywords into the search box, the selected keywords are submitted to the IBM Cognos Analytics server and the Choice list box is populated with all possible values that match one or more of the keywords. The values that you choose from the list box are submitted to the server when you click Finish and can then be retrieved as with any other prompted report.

If you are collecting prompts with an alternative interface, the response from the reportPrompts resource type (REST application) or the getReportPrompts method call (SOAP application) is an LDX file that contains the following snippet.

```xml
<item>
  <p_srch>
    <id>_P288725932</id>
    <ref>R5</ref>
    <style>S5</style>
    <pname>product</pname>
    <rows>5000</rows>
    <mtchany>false</mtchany>
    <mtchall>false</mtchall>
    <showopt>false</showopt>
    <cname>Product</cname>
  </p_srch>
</item>
```

Use the reprompt secondary request to submit search values and other parameters. For example, by using the REST interface you can submit

```xml
<gateway>/ids/sessionOutput/conversationID/<conversation_ID>/reprompt?v=3&szrchval=edge&swsID=_P288725932&pname=product&nocase=true&mtchAny=true
```

to use edge as the search keyword. A portion of the response is shown here.

```xml
<item>
  <p_srch>
    <id>_P288725932</id>
    <ref>R6</ref>
    <style>S6</style>
  </p_srch>
</item>
```
<pname>product</pname><rows>5000</rows><mtchany>true</mtchany><mtchall>false</mtchall><showopt>false</showopt><srchval>edge</srchval><cname>Product</cname><selOptions><sval><use>Bear Edge</use><disp>Bear Edge</disp></sval><sval><use>Bear Survival Edge</use><disp>Bear Survival Edge</disp></sval><sval><use>Double Edge</use><disp>Double Edge</disp></sval><sval><use>Edge Extreme</use><disp>Edge Extreme</disp></sval><sval><use>Single Edge</use><disp>Single Edge</disp></sval></selOptions></p_srch></item>

You can reprompt again with a different search string to collect different prompts or use one of returned values and run the report.

**REST example**

Submit the following URL to the Cognos Analytics server:

```
```

The response is an LDX page containing information about the prompt, in this case, the comparison country. Note the URL associated with the response page:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/i689320782E8D45B1A4A18A9D41445048?v=3
```

In order to get the search values that match the keyword edge, submit the following URL, using the reprompt secondary request:

```
```

The response is an LDX page containing the search terms that match the keyword edge. To select the search result Bear Edge, submit the following URL:

```
```

The response from the Cognos Analytics server is a promptAnswers response that you can use to submit to run the report for the Bear Edge product category.
**SOAP example**

For an example of using select & search prompts in SOAP applications, see the SearchPromptValue Java and C# sample programs.

**Collecting prompts from multiple prompt pages**

Some reports have multiple prompt pages. An example of such a report is the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Training by Year.

If you use the IBM Cognos prompt user interface, the prompt page has Back and Next buttons, enabling you to provide responses to the prompts.

A single prompt with navigation buttons is shown here.

![Employee Training Prompt](image)

*Figure 5: Single prompt with navigation buttons*

After you submit prompt values, they can be retrieved as with any other prompted report.

If you are collecting prompts yourself, retrieve the prompt information associated with the first prompt page using the procedure described in “Collecting prompts with an alternate interface” on page 40.

To retrieve subsequent pages of prompt information, use the forward secondary operation, including the responses to prompts on the current page in the request. When the forward secondary operation for the last page has been submitted, the response from the server will include all prompt values.

Examples using the REST and SOAP interfaces are shown here.

**REST example**

Submit the following URL to the BI server:

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportPrompts
/report/i20b89f17f37c4818a2e887614ccbb11f?v=3
```
The response is an LDX page containing information about the first prompt, in this case, the year. Note the URL associated with the response page:

http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/i2f24a760fae047958356a7a0a9e99c1f?v=3

In order to get the second prompt page request, for the quarter, submit the following URL, using the forward secondary request along with the selected response to the prompt for the year (in this case, 2010).

http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/i2f24a760fae047958356a7a0a9e99c1f/forward?v=3& p_P_Year=[Employee training].[Time].[Time].[Year]->[Time].[2010]

The response is an LDX page containing the prompt request for the quarter of 2010 to be selected. When you have selected the quarter, submit the following URL to the server.

http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/i2f24a760fae047958356a7a0a9e99c1f/forward?v=3& p_P_Quarter=[Employee training].[Time].[Time].[Quarter]->[Time].[2010].[20103]

Since there are only two prompt pages, the response from the IBM Cognos Analytics server is a promptAnswers response as in the case with non-cascading prompt pages.

**SOAP example**

Submit a getReportPrompts request to the BI server. When the asynchronous conversation completes, the output from the server includes a PromptAnswerOutput object, which contains the promptValues objects, that contain the prompt information for the first prompt page.

After you have determined the prompt answers for the first prompt page, submit them to the BI server in a forward secondary request. The server response will include the promptValues for the second page of prompts. The server will return a PromptAnswerOutput object for the second prompt page.

When there are no more prompt pages to process, the response from the forward request will include promptValues for all the prompts in the report, which can now be run.

**Notes**

- Although this sample report uses cascading prompts, the procedures are no different if the report has multiple, independent prompts.
- If default values are available for prompts, you can use the finish secondary request to skip any subsequent prompt pages. This is equivalent to pressing the Finish button on a prompt page.
- You can use the back secondary request to return to the previous prompt page. This is equivalent to pressing the Back button on a prompt page.
- You can use the reprompt secondary request to submit one or more prompt responses and have the current prompt page refreshed instead of moving to the next prompt page. Use this request if the prompt page contains cascading prompts and you need to submit a prompt response before getting the next prompt request.

**Collecting cascading prompts from a single prompt page**

Some reports collect source and cascading prompts from a single prompt page. An example of such a report is Public Folders > Samples_PowerCube > Cubes > Sales and Marketing (cube) > Reporting Report Samples > Selected Retailer Country.

If you use the IBM Cognos prompt user interface you will get the following prompt page.
Figure 6: Cascading prompts request

After you select the **Select Baseline Retailer Country** value from the drop-down box, the selected value is automatically submitted to the IBM Cognos Analytics server and the **Select Retailer Countries To Compare To** list box is populated with all possible values. The values you choose are submitted to the server when you click the **Finish** button and can then be retrieved as with any other prompted report.

Part of the LDX document is shown here:

```xml
<document xmlns="http://www.ibm.com/xmlns/prod/cognos/layoutData/200904">
  ...
  <item>
    <p_value>
      <id>_P2884238914</id>
      <ref>R11</ref>
      <style>S11</style>
      <pname>comparison country</pname>
      <rows>5000</rows>
      <selectUI>DROP_DOWN</selectUI>
      <auto>true</auto>
      <cname>Retailer country</cname>
      <autocascade>true</autocascade>
      <selOptions>
        <sval>
          <use>[sales_and_marketing].[Retailers].[Retailers].[Retailer country] -:[PC].[@MEMBER].[90001]</use>
          <disp>United States</disp>
        </sval>
        ...
        <sval>
          <use>[sales_and_marketing].[Retailers].[Retailers].[Retailer country] -:[PC].[@MEMBER].[90021]</use>
          <disp>Spain</disp>
        </sval>
      </selOptions>
    </p_value>
  </item>
  ...
  <item>
    <p_value>
      <id>_P3964241042</id>
      <ref>R13</ref>
      <style>S13</style>
      <pname>compared countries</pname>
      <multi>true</multi>
      <cascadeon>comparison country</cascadeon>
      <rows>5000</rows>
      <disabled>true</disabled>
      <selectUI>LIST_BOX</selectUI>
      <cname>Retailer country</cname>
      <selOptions/>
    </p_value>
  </item>
  ...
</document>
```

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The first prompt item, comparison country, has the \texttt{autocascade} element set to \texttt{true}. This means that when this prompt is submitted, the prompt page should be refreshed with possible values for the compared countries prompt. The compared countries prompt has \texttt{disabled} set to \texttt{true}. This specifies that this prompt is disabled until the first prompt has been selected. When a value for the \textbf{Retailer country} is submitted to the BI server, a prompt page for the compared countries can be retrieved, parts of which are shown here.

A value for the comparison country prompt can then be submitted using the \texttt{forward} secondary request, setting the prompt name to \texttt{comparison country} and the prompt value to \texttt{[sales_and_marketing].[Retailers].[Retailers].[Retailer country]->:[PC].[@MEMBER].[90002]}.

The response is an LDX document that contains the possible values for the compared countries prompt which can then be submitted to run the report.

**REST example**

Submit the following URL to the Cognos Analytics server:

\begin{verbatim}
http://localhost/ibmcognos/bi/v1/disp/rds/reportPrompts
/report/13D3D474CA8864E5CB05607752956363?v=3
\end{verbatim}

The response is an LDX page containing information about the first prompt, in this case, the comparison country. Note the URL associated with the response page:

\begin{verbatim}
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput
/conversationID/1CE65F380014C4469B125F626DEBACBD7?v=3
\end{verbatim}

In order to get the second prompt page request, for the comparison country, submit the following URL, using the \texttt{forward} secondary request along with the selected response to the prompt for the year (in this case, the United States).

\begin{verbatim}
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/1CE65F380014C4469B125F626DEBACBD7/forward?v=3&p_comparison country=[sales_and_marketing].[Retailers].[Retailers].[Retailer country]->:[PC].[@MEMBER].[90001]
\end{verbatim}
The response is an LDX page containing the prompt request for the compared country to be selected. When you have selected the country, in this case Canada, submit the following URL to the server.

```
```

Since there are only two prompts required, the response from the Cognos Analytics server is a promptAnswers response that you can use to submit to run the report.

**Running a report with prompts**

After collecting the prompt answers, you can run the report by submitting the prompt answers with the request.

**REST example**

The report can be run by including the promptAnswers element in an xmlData option as shown here.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/report/ia195960a5e77488cb4583d74b56c78d6?v=3&xmlData=
  <promptAnswers>
    <promptValues>
      <name>pYear</name>
      <values>
        <item>
          <SimplePValue>
            <inclusive>true</inclusive>
            <useValue>[Employee summary].[Time].[Time].[Year]-%gt;[Time].[2006]</useValue>
            <displayValue>2006</displayValue>
          </SimplePValue>
        </item>
      </values>
    </promptValues>
    <promptValues>
      <name>pRegion</name>
      <values>
        <item>
          <SimplePValue>
            <inclusive>true</inclusive>
            <useValue>[Employee summary].[Employee by region].[Employee by region].[Branch region]-%gt;[Employee by region].[740]</useValue>
            <displayValue>Asia Pacific</displayValue>
          </SimplePValue>
        </item>
      </values>
    </promptValues>
  </promptAnswers>
```

Alternatively, you can use a simplified expression using the **p_parameter** option.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/report/ia195960a5e77488cb4583d74b56c78d6?v=3&p_pYear=[Employee summary].[Time].[Time].[Year]-%gt;[Time].[2006] & p_pRegion=[Employee summary].[Employee by region].[Employee by region].[Branch region]-%gt;[Employee by region].[740]
```

In this case the value of each prompt is the value of the corresponding useValue element of the promptAnswers response.

**SOAP example**

To run a report with prompts, include promptValues objects (generic applications) or a PromptAnswersType object (report-specific application) in the report request.

**Considerations if the display value is omitted when running a report with prompts**

If you submit a prompted report and omit the display value, either by using the simplified expression in a REST application, or by omitting the optional displayValue parameter in a SOAP application, and the report uses the ParamDisplayValue function to display the prompt value, the prompt value shown in the report output will be the use value.

**Drilling up and down in reports**

You can drill up or down in an existing report session if the underlying report supports drill operations. You can get drill information from LDX output (for both SOAP and REST applications) and from HTML output (for REST applications only).

The sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Customer Returns and Satisfaction supports drilling up and drilling down. See
“Sample drill-up and drill-down report in LDX format” on page 63 for a description of the LDX elements that support drilling up and drilling down.

REST example for LDX output

In a REST application use the drill secondary resource type to perform a drill up or down operation. An example is shown here based on the above report:

`drill?contextId=50&direction=DOWN`

SOAP example for LDX output

In a generic SOAP application, use the drill secondary method to perform a drill up or drill down, populating the direction and contextID of the DrillRequest as above.

REST example for HTML output

By default, reports returned in HTML format do not include drill-up or drill-down information. Use the drillurls option to include drill-up or drill-down information in the HTML output. For the report above, drill-up or drill-down information will be included for 1 for 1 Sports shop as shown here.

<table>
<thead>
<tr>
<th>&lt;td class=&quot;S66&quot;&gt;</th>
<th>&lt;span class=&quot;S65&quot; drill=&quot;{&quot;down&quot;:&quot;./drill?contextId=50&amp;direction=DOWN&quot;,&quot;up&quot;:&quot; ./drill?contextId=50&amp;direction=UP&quot;&quot;&gt;1 for 1 Sports shop&lt;/span&gt;</th>
</tr>
</thead>
</table>

In a REST application use the drill secondary resource type to perform a drill up or down operation. An example is shown here based on the report snippet:

`drill?contextId=50&direction=DOWN`

Drilling through to another report

You can drill through from one report to another using the Mashup Service REST interface. You can get drill-through information from LDX and HTML outputs.

This example is based on a drill-through link from the source sample report Recruitment Report to the target sample report Positions to Fill, which are included in the GO Data Warehouse (analysis) package. See “Sample drill-through definitions in LDX format” on page 64 for a description of the LDX elements that support drilling up and drilling down.

By default, reports returned in HTML format do not include drill-through information. Use the drillurls option to include drill-through information in the HTML output.

The equivalent HTML snippet for the drill-through definition for this report is as follows.

<table>
<thead>
<tr>
<th>&lt;td class=&quot;S50&quot;&gt;</th>
<th>&lt;div style=&quot;display:none&quot; class=&quot;ctx&quot;&gt;102&lt;/div&gt;</th>
<th>&lt;span class=&quot;S45&quot; drill=&quot;{&quot;drillthroughs&quot;:&quot;/rds/reportData/searchPath/content/folder[@name='Samples']/folder[@name='Models']/package[@name='GO Data Warehouse (analysis)']/report[@name='Positions to Fill']/?p_Year selection=&lt;![CDATA[[Employee recruitment].[Time].[Time].[Year]-&gt;[Time].[2011]]]&gt;&quot;&quot;&gt;Days to fill&lt;/span&gt;</th>
</tr>
</thead>
</table>

The drillDefinitions element contains a drill element that contains the search path (targetPath) of the report to drill through to and parameter name (name) to use in the prompt request.

To drill through to the Positions to Fill report, run a report using the targetPath value as the search path and including a prompt with a prompt name of pYear and a value of 2011.
The drillThrough JavaScript sample program illustrates the use of drill through.

### Embedding images in HTML output

You can have HTML output from the IBM Cognos Mashup Service contain image data inline instead of containing URLs to images on the server.

By default, HTML output from the Cognos Mashup Service contains links to the IBM Cognos Analytics server for any images contained in the HTML output. If embedImages is true, any images in the HTML output will be contained inside the HTML content as data, so that a link to the server is not required in order to render the report.

The encoding scheme for the embedImages option adheres to the IETF RFC 2397 "data" URL scheme standard.

### Using a URL to display a report in IBM Cognos Viewer

You can use the IBM Cognos Mashup Service to obtain a URL that lets you run a report and display its output in IBM Cognos Viewer.

To retrieve the URL that runs a report and deploys it in IBM Cognos Viewer, use the cognosURL REST resource type or the getCognosURL SOAP method. The response from the IBM Cognos Analytics server includes a URL that can be used to display the report in IBM Cognos Viewer.

### Retrieving a relative prompt page URL

If the internal dispatcher URI of your IBM Cognos Analytics server is hidden behind a firewall, you can receive the prompt page URL based on the external gateway URI instead.

Use the useRelativeURL option (REST applications) or the useRelativeURL option (SOAP applications) to receive the prompt page URL based on the external gateway URI.

A request to run a report that requires prompts returns a response that contains a URL to a page that you use to request prompts from a user. The prompt request URL is based on the internal dispatcher URI of your Cognos Analytics server. If this address is hidden behind a gateway, you can retrieve a relative URL instead that you can use to form a URL based on the external gateway URI.

For example, the response to the following URL:

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/report/i3D3D474CA3804E5CB0D5607752950303?v=3&useRelativeURL=true
```

includes a URL as follows:

```
<rds:url>/ibmcognos/bi/v1/disp?b_action=xts.run&m=ccs/ccs_prompt.xts
&promptID=i3D3D474CA3804E5CB0D5607752950303&ui.object=storeID("i3D3D474CA3804E5CB0D5607752950303")</rds:url>
```

It is up to your application to form a correct URL from this relative URL.
Chapter 7. Understanding the Layout Data format

A Layout Data (LDX) document instance is an XML document that is an abstraction of rendered IBM Cognos content. This content is referred to in this document as a resource and can be a:

- Reporting report
- Query Studio query
- Analysis Studio analysis
- PowerPlay report
- PowerPlay Studio report

The Mashup Service provides these IBM Cognos resources in the LDX format, a consistent format that can then be rendered in other applications.

The LDX instance includes all of the data and formatting from the resource, including list grouping, crosstab dimensions and styling information.

Please note that the LDX instance that represents a specific IBM Cognos resource may change, but will always comply with the layoutDataXMLV2.xsd schema. Do not assume that LDX output will always be exactly the same from one run to the next.

The LDX schema file in an IBM Cognos Analytics installation can be found at installation_location/templates/ccs/wsdl/layoutDataXMLV2.xsd. You can open this file in an XML schema editor to examine its structure. For reference information, see Chapter 16, “Layout Data (LDX) schema reference,” on page 167.

You can easily obtain the LDX representation of a report by using the REST interface to run the report. The LDX document is rendered in a Web browser and you can view the XML in the browser or save the document and examine it using an XML editor. See “Retrieving report data” on page 20 for more information.

The LDX samples used in the following topics are based on the Sample Outdoors Company sample databases and reports included in IBM Cognos Analytics.

Basic structure of a layout data document

Each layout data document contains a representation of all the data and layout information from the source resource output.

The root element in a layout data document is either document, if the layout data document represents the entire source resource, or filterResultSet if the layout data document represents a filtered subset of the source resource.

An LDX document contains the following elements:

- secondaryOperations elements that indicate which secondary operations are allowed. See “Secondary operations” on page 54 for more information.
- A versionBase element if the report is a saved report.
- locationReference elements at the beginning of a layout data document that specify locations in the source resource. These locations are referenced by layout elements in the layout data document. See “Location references” on page 54 for more information.
- The report output is contained in
  - pages elements if the root element is document. There will be one pages element for each page in the source resource. See “Report output structure” on page 55 for more information.
  - filterResult elements if the root element is filterResultSet. There will be one pages element for each selected report element. See “Filter output structure” on page 57 for more information.
• **drillDefinitions** elements if there are drill throughs defined in the report. See “Sample drill-through definitions in LDX format” on page 64 for more information.

• **styleGroup** elements that contain style information for the report content. See “Style information” on page 54 for more information.

**Secondary operations**

Many IBM Cognos Mashup Service applications require multiple interactions with the IBM Cognos Analytics server for a single report. These interactions include:

• Retrieving report output one page at a time.

• Collecting report prompts.

• Drilling up or down in a report.

The contents of the `value` child element of the **secondaryOperations** element indicate which secondary operations are available for the report.

See the chapters on developing mashup applications for information about how to send secondary requests to the BI server.

**Location references**

You can specify locations in the source based on the report specification.

**locationReference** elements are referenced by elements further down in the layout data document. An example is shown here.

```xml
<locationReference>
  <ref>R40</ref>
  <loc>./layouts/layout/reportPages/page/pageBody/contents/list</loc>
</locationReference>
```

In this example, the `ref` element is referenced in the body of the report in the following way:

```xml
<lst>
  <id>List1</id>
  <ref>R40</ref>
</lst>
```

The `ref` element provides the report specification location of the `lst` element in the report. See the *IBM Cognos Software Development Kit Developer Guide* for more information about report specifications.

**Style information**

Styles are defined within each layout data document in a series of **styleGroup** elements. Each **styleGroup** element represents one style used in the document and has a `name` element to specify a name. This name is referenced in a layout element using the `style` child element.

For example, the following cell,

```xml
<cell>
  <ref>R9</ref>
  <style>S9</style>
  <item>
    <txt>
      <ref>R8</ref>
      <ctx>12:11</ctx>
      <style>S8</style>
      <val>Lanterns</val>
      <valTyp>text</valTyp>
      <fmtVal>Lanterns</fmtVal>
    </txt>
  </item>
</cell>
```

references the following style:

```xml
<styleGroup>
  <name>S9</name>
```


Report output structure

This sample illustrates the main parts of a layout data document.

This example is based on the sample report **Employee Satisfaction 2012**.

The REST URL to run this report and obtain the LDX output is shown here:

http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData
/path/Public%2520Folders/Samples/Models
/GO%2520Data%2520Warehouse%2528analysis%2529
/Report%2520Studio%2520Report%2520Samples/Employee%2520Satisfaction%25202012

The HTML output of the report is shown here.

![Employee Satisfaction by Department 2012](image)

*Figure 7: Employee Satisfaction 2012 report*

This report output displays the following items:

- A header containing a graphic and the text **Employee Satisfaction by Department 2012**.
- A body containing two charts, a crosstab, and a sentence with a single data element.
- A footer containing the report run date and time, and the page number.
### Combination Chart - survey topic scores by department

<table>
<thead>
<tr>
<th>Department</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singleton1</td>
<td>-0.121%</td>
</tr>
</tbody>
</table>

### Combination Chart - survey scores and benchmark
A `<t1>` element is used to layout the principal report parts. The first `<t1>` contains a `<c1>` with the `Survey topic scores by department` combination chart. In the same cell following the chart is a `<blk>` element containing `Customer Service average score is -12.1% compared to the company average`. A `<sng>` element contains the calculated value in the sentence. The second `<t1>` contains the `Survey topic scores, targets and industry standard` combination chart.

The last `<t1>` spans two cells and contains a `<blk>` element containing the crosstab title followed by a `<ct>` element that contains the crosstab. See “Sample crosstab in LDX format” on page 61 for more information on crosstabs.

**Reports with multiple pages**

Many reports span several pages when viewed in IBM Cognos Viewer. You can retrieve reports a page at a time, or you can retrieve the entire report, using the Mashup Service. When retrieving an entire report, you can choose to receive the report in one page or split into separate pages corresponding to the pagination displayed by IBM Cognos Viewer.

For example, the sample report `Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Budget vs. Actual` spans three pages when viewed in Cognos Viewer. This report can be retrieved in one page using the following URL.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/path/Public%20Folders/Samples/Models/GO%20Data%20Warehouse%20%28analysis%29/Report%20Studio%20Report%20Samples/Budget%20vs.%20Actual?includeLayout=true
```

The report output will contain a single `<pages>` that contains the entire report. If the report is retrieved using the following URL, it will contain three `<pages>` elements, each containing the same data as each page of the Cognos Viewer output.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/path/Public%20Folders/Samples/Models/GO%20Data%20Warehouse%20%28analysis%29/Report%20Studio%20Report%20Samples/Budget%20vs.%20Actual?includePageBreaks=true&includeLayout=true
```

**Filter output structure**

You can request a filtered output containing parts of a report output.

Using the same report as in “Report output structure” on page 55, you can request a filtered output containing one of the combination charts and the crosstab.
The REST URL to run this report and obtain the LDX output is shown here:

http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528analysis%2529/Report%2520Studio%2520Samples/Employee%2520Satisfaction%25202006?selection=Combination

Chart - survey scores and benchmark;Crosstab1

The following sample XML is the filtered report in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```xml
<filterResultSet...
  <filterResult>
    <filterType>OBJECT_ID</filterType>
    <filterValue>Combination Chart - survey scores and benchmark</filterValue>
    <reportElement>
      <cht>
        <id>Combination Chart - survey scores and benchmark</id>
        ...
      </cht>
    </reportElement>
  </filterResult>
  <filterResult>
    <filterType>OBJECT_ID</filterType>
    <filterValue>Crosstab1</filterValue>
    <reportElement>
      <ctab>
        <id>Crosstab1</id>
        ...
      </ctab>
    </reportElement>
  </filterResult>
...
```

Since this is a filtered report, the root element is a `filterResultSet` element. This element contains two `filterResult` elements, one for each requested report part. The value of the `filterType` elements is `OBJECT_ID`, indicating that we filtered on a named report part, which is contained in the value of `filterValue` elements.

Each `reportElement` element contains a requested chart or crosstab.

**Sample grouped list in LDX format**

This sample illustrates the main parts of a layout data document for a grouped list report.

This example is based on the sample report Product Quantity and Price.

The REST URL to run this report is shown here:

http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528analysis%2529/Report%2520Studio%2520Samples/Employee%2520Satisfaction%25202006

The HTML output of the grouped list report is shown here.
The following sample XML is the grouped list report in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```xml
<document>
...  
<pages>
...  
<page>
  <id>Page1</id>
  <header>
    ...
  </header>
  <body>
    <item>
      <list>
        <id>List1</id>
        <ref>R4B</ref>
        <style>S40</style>
        <colTitle>
          <ref>R2B</ref>
          <style>S20</style>
          <item>
            <txt>
              ...  
              <val>Product type</val>
            </txt>
          </item>
          ...
        </colTitle>
        <group>
          <di>Product type</di>
          <dv>Binoculars</dv>
        </group>
        ...  
      </list>
    </item>
    ...  
  </body>
</page>
...  
</pages>
</document>
```

**Figure 8: HTML output of the grouped list report**

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The sample XML includes one page of rendered content, represented by the page element. The list is located on the body of the page and is represented by the lst element. Within the list there are four columns, each with a colTitle element for the titles.

Because this is a grouped list, each value from the grouped data item in the report output appears in the layout data document, represented by a grp element. The di child element specifies the data item name, and the dv child element specifies the data item value.

Sample crosstab in LDX format

This sample illustrates the main parts of an layout data document for a crosstab report.

This example is based on the sample report Returns by Order Method.

This report is run using a filter to return just the crosstab. The REST URL to run this report is shown here:


Part of the HTML output of the crosstab report is shown here.

Figure 9: Crosstab report sample

The following sample XML is the crosstab report in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).
The crosstab is represented by the ctab element. The text that appears in the corner of the crosstab, Return quantity, is represented by the corner element. The header values that appear at the top of each
column are represented by \texttt{txt} elements inside a series of \texttt{column} elements. The header values for the row dimension appear in a series of \texttt{row} elements.

The \texttt{start} element in each row and column specifies the row or column to which the header corresponds. For example, the value in the first column header is 2004, and the \texttt{start} value is 0. This means that \textbf{Defective product} is the header for the first column in the data table. The \texttt{start} value for the second column header is 1, and the \texttt{start} values for each column header increase incrementally from left to right. The \texttt{size} element specifies the row or column span. In this example, each column and row header span a single row or column, therefore the value of the \texttt{size} element is always 1.

The measure values that appear in the centre of the crosstab are represented by a \texttt{table} element.

**Sample drill-up and drill-down report in LDX format**

In some reports, you can drill up or drill down to move through a hierarchy of information. The ability to drill up or drill down is indicated by the presence of \texttt{drillAction} elements.

This example uses the sample report \texttt{Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Customer Returns and Satisfaction}.

This portion of the report in IBM Cognos Viewer displays a drillable report element.

![Figure 10: Drillable report element](image)

The following sample XML is the report output in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```
<di>Retailer name</di>
<dv>1 for 1 Sports shop</dv>
<grp>
  <di>Retailer type</di>
  <dv>Outdoors Shop</dv>
  <grp><di>Retailer topic score</di><dv>0.7179375</dv></grp>
  <row>
    <cell>
      <ref>R66</ref>
      <style>S66</style>
      <item>
        <txt>
          <ref>R65</ref>
          <ctx>50</ctx>
          <style>S65</style>
          <drillAction>
            <direction>UP</direction>
          </drillAction>
          <drillAction>
            <direction>DOWN</direction>
          </drillAction>
          <val>1 for 1 Sports shop</val>
          <valTyp>text</valTyp>
          <fmtVal>1 for 1 Sports shop</fmtVal>
        </txt>
      </item>
    </cell>
  </row>
```

The \texttt{drillAction} element indicates that we can drill UP or DOWN on \textbf{1 for 1 Sports shop}. 

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Sample drill-through definitions in LDX format

Using drill-through access, you can move from one report to another within a session while maintaining your focus on the same piece of data.

Drill throughs are defined in two places in each layout data document. The first place is the drill-through definition, the second is the drill-through instance.

This example is based on a drill through in the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Satisfaction 2006. See the topic about using drill-through access in the IBM Cognos Analytics Reporting User Guide for more information on this report.

The drill-through definitions are defined in drill elements that are children of the drillDefinitions element. Each definition specifies the general information for a drill through, including whether or not it is prompted, the list of parameters available, and whether or not to show the target resource in a new window. Each drill element has a drillRef child element that specifies the identifier for the drill-through definition. For example:

```
<drillDefinitions>
  <drill>
    <drillRef>0</drillRef>
    <label>DrillToHiddenRep</label>
    <showInNewWindow>false</showInNewWindow>
    <sendFilterContext>false</sendFilterContext>
    <prompt>no</prompt>
    <outputFormat/>
    <method>execute</method>
    <targetPath>/content/folder[@name='Samples']/folder[@name='Models']/package[@name='GO Data Warehouse (query)']/folder[@name='Reporting Report Samples']/report[@name='Compensation (hidden)']</targetPath>
    <parameters>
      <parameter>
        <name>pPosition</name>
        <type>xsdString</type>
      </parameter>
    </parameters>
    <modelPaths>
      <objectPath>storeID("i81b8b50c4a284aa66253b3b4a1267f")</objectPath>
      <objectPath>/package[@name='GO Data Warehouse (query)']/folder[@name='Models']/package[@name='GO Data Warehouse (analysis)']/folder[@name='Reporting Report Samples']/report[@name='Compensation (hidden)']</targetPath>
      <locale>en-us</locale>
    </modelPaths>
  </drill>
</drillDefinitions>
```

A drill-through instance is represented by a drill element on a layout element. The drill-through instance references a drill through definition using the drillRef element. For example, the following drill-through instance references the preceding drill-through definition:

```
<item>
  <txt>
    <ref>R50</ref>
    <ctx>110</ctx>
    <style>S50</style>
    <drills>
      <drill>
        <drillRef>0</drillRef>
        <parm>
          <name>pPosition</name>
          <value>Human Resources</value>
        </parm>
      </drill>
    </drills>
  </txt>
</item>
```
Sample prompt request page in LDX format

This sample illustrates the main parts of a layout data document for a prompt request page. This sample is based on the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Training by Year.

This prompt page is shown here when displayed using the standard IBM Cognos prompt interface.

![Employee Training for Selected Year and Quarter(s)](http://localhost/ibmcognos/bi/v1/disp/rds/reportPrompts/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528analysis%2529/Report%2520Studio%2520Report%2520Samples/Employee%2520Training%2520by%2520Year)

*Figure 11: Report prompt page*

The REST URL to obtain the prompt request page in LDX format is shown here:

http://localhost/ibmcognos/bi/v1/disp/rds/reportPrompts/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528analysis%2529/Report%2520Studio%2520Report%2520Samples/Employee%2520Training%2520by%2520Year

The following sample XML is the returned prompt page in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```xml
<document xmlns="http://www.ibm.com/xmlns/prod/cognos/layoutData/200904">
  ...
  <pages>
    <page>
      <canFinish>false</canFinish>
      <canNext>true</canNext>
      <canBack>false</canBack>
      ...
    </page>
    ...
  </pages>
  ...
</document>
```
The **canBack**, **canFinish**, and **canNext** elements specify which secondary operations can be used with this page. The **p_value** element specifies that this is a **Value Prompt** control. Most of the child elements of this control correspond directly to the prompt properties exposed in Reporting. The **p_btn** elements in the document correspond to the buttons displayed on the prompt page.

For more information about prompt pages, see “Running reports with prompts” on page 38.
Chapter 8. Understanding the Simple format

You can render an IBM Cognos resource in Simple format when you are developing a client application that works with specific reports or other resources and you need a format that is smaller and simpler than the layout data (LDX) format. This format is deprecated and will be removed in a future release of this product.

If you are writing a generic application for use with any IBM Cognos resource, use the LDX format. For more information, see Chapter 7, “Understanding the Layout Data format,” on page 53.

An IBM Cognos resource rendered in Simple format is similar to a resource rendered in layout data (LDX) format, but the element names are derived from object IDs and other information from the source resource.

Source resource objects that have id elements will use the value as the element name in Simple format. For example, the following element in LDX format:

```xml
<txt>
  <id>Text1</id>
  <ref>R5</ref>
  <style>S5</style>
  <val>2007</val>
  <valTyp>text</valTyp>
</txt>
```

becomes the following element in Simple format:

```xml
<Text1>
  <style>S5</style>
  <val>2007</val>
  <valTyp>text</valTyp>
</Text1>
```

Source resource objects that do not have id elements are not included in the Simple format instances.

Some resource objects have additional transformations applied in Simple format. For more information and examples, see “List in Simple format” on page 69, “Grouped list in Simple format” on page 70, “Multiple items in a cell in Simple format” on page 71, and “Crosstab in Simple format” on page 71.

Simple format XML encoding

Because special characters are not supported in XML element tags, all special characters in Simple format are encoded as follows:

- If an ID starts with a special character or a number, then the element name will become the ID preceded by the letter e. Element names in XML must start with a letter.
- A space will be encoded as two underscore characters: __
- Special characters will be encoded as _x<code>, where <code> is the 4-digit hex code that corresponds to the code for that character.

Report output structure in Simple format

You can retrieve report output in Simple format by including the fmt=Simple option in the URL.

The sample report from “Report output structure” on page 55 can be retrieved in Simple format with the following URL:

http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2520analysis%2529
The root element of the document is a report element. The main element names in Simple format are the values of the id elements of the corresponding report parts. For example, the ccht with an id value of Combination Chart - survey topic scores by department is rendered as a Combination__Chart___x002d__survey__topic__scores__by__department element in Simple format. The blk elements that do not have id child elements are omitted from the Simple report output.

The Simple report output contains StyleGroup elements that share the structure of the styleGroup elements in LDX report output.

### Filter output structure in Simple format

You can retrieve filtered output in Simple format.

Using the same report as in “Report output structure in Simple format” on page 67, you can request a filtered output containing one of the combination charts and the crosstab.

The REST URL to run this report and obtain the Simple format output is shown here:

```
http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/path/
Public%2520Folders/Samples/Models/GO%2520data%2520Warehouse%2520Analysis%2529/
Report%2520Studio%2520Report%2520Samples/Employee%2520Satisfaction%25202006?
selection=Combination%20Chart%20-%20survey%20scores%20and%20benchmark;Crosstab1&fmt=Simple
```

The following sample XML is the filtered report in Simple format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).
Since this is a filtered report, the root element is a results element. This element contains a Combination__Chart__x002d__survey__scores__and__benchmark element and a Crosstab1 element, as specified in the request.

**List in Simple format**

For a list in Simple format, the column titles are used as the element names for the detail rows. If no titles are available in the report then columns are identified as Column1, Column2, etc.

Here is an example based on the sample report Public Folders > Samples > Models > GO Data Warehouse (query) > SDK Report Samples > Order Product List.

The REST URL to run this report is shown here:

```
http://localhost/ibmcognos/bi/v1/disp/rds/pagedReportData/path/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528query%2529/SDK%2520Report%2520Samples/Order%2520Product%2520List?fmt=Simple
```

The following sample XML is the list output in Simple format. This sample XML does not include the entire document. Removed sections are represented by ellipses (...).

```
<List1>
  <columnTitle>
    <ref>R22</ref>
    <item>
      <txt>
        ...<val>Order number</val>
        <valTyp>text</valTyp>
      </txt>
    </item>
  </columnTitle>
  <columnTitle>
    <ref>R24</ref>
    <item>
      <txt>
        ...<val>Product</val>
        <valTyp>text</valTyp>
      </txt>
    </item>
  </columnTitle>
  <row>
    <Order__number>
      <style>S26</style>
      <val>100003</val>
    </Order__number>
    <Product>
      <style>S28</style>
      <val>Polar Extreme</val>
    </Product>
  </row>
  <row>
    <Order__number>
      <style>S26</style>
      <val>100009</val>
    </Order__number>
    <Product>
      <style>S28</style>
      <val>BugShield Natural</val>
    </Product>
  </row>
</List1>
```
Grouped list in Simple format

For a grouped list in LDX format, the grouping levels are identified using the column titles. In a grouped list in Simple format:

- The grp element is replaced with the column title.
- The dv element value for the group is a nested element with the same name as the column title again.
- The cell value for a group only appears on the first row of that group.

Here is an example based on the sample report used in “Sample grouped list in LDX format” on page 58:

The REST URL to run this report is shown here:

```
http://localhost/ibmcognos/bi/v1/disp/rdspagedReportData/searchPath/ 
  content/folder[@name='Samples']/folder[@name='Models']/package[@name='GO 
  Data Warehouse (query)']/folder[@name='SDK Report Samples']/report[@name='Product 
  Quantity and Price']?fmt=Simple
```

The following sample XML is the grouped list output in Simple format. This sample XML does not include the entire document. Removed sections are represented by ellipses (…).

```
<List1>
  <style>S40</style>
  <columnTitle>
    <ref>R20</ref>
    <style>S20</style>
    <item>
      <txt>
        ...
      </txt>
      <val>Product type</val>
    </item>
  </columnTitle>
  ...
  <Product__type>
    <Product__type>Binoculars</Product__type>
    <row>
      <Product__type>
        <val>Binoculars</val>
        <valTyp>text</valTyp>
        <fmtVal>Binoculars</fmtVal>
      </Product__type>
      <Product>
        <val>Opera Vision</val>
        <valTyp>text</valTyp>
        <fmtVal>Opera Vision</fmtVal>
      </Product>
      <Quantity>
        <val>82016</val>
        <valTyp>number</valTyp>
        <fmtVal>82,016</fmtVal>
        <fmtPatrn>#,##0</fmtPatrn>
        <exclPatrn>\[$\,-409\]\#,#\#0.00</exclPatrn>
      </Quantity>
      <Unit__sale__price>
        <val>109.436407</val>
        <valTyp>number</valTyp>
        <fmtVal>$109.44</fmtVal>
        <fmtPatrn>¤#,##0.00;\(¤#,##0.00\)</fmtPatrn>
        <exclPatrn>\[$$-409\]\#,#\#0.00;\(\[$$-409\]\#,\#0.00\)</exclPatrn>
      </Unit__sale__price>
    </row>
  </Product__type>
</List1>
```
Multiple items in a cell in Simple format

If there is only one item in a cell, then the cell is flattened so that the element name becomes the column associated with the cell.

If there are multiple items in a cell, then the items are identified based on their type and a number based on how many of that type of item have preceded it in that cell.

To illustrate this transformation, here is a sample cell in LDX format followed by the same cell in Simple format.

Multiple items in a cell in LDX format

```xml
<cell>
  <ref>R18</ref>
  <style>S18</style>
  <item>
    <txt>
      <ref>R16</ref>
      <ctx>6:4:5</ctx>
      <val>332986338.06</val>
      <valTyp>number</valTyp>
      <fmtVal>332,986,338.06</fmtVal>
      <fmtPatrn>#,##0.##</fmtPatrn>
      <exclPatrn>\#,\#0\.\#</exclPatrn>
    </txt>
  </item>
  <item>
    <img>
      <ref>R17</ref>
      <style>S17</style>
    </img>
  </item>
</cell>
```

Multiple items in a cell in Simple format

```xml
<Revenue>
  <TextFrame1>
    <style>S16</style>
    <val>332986338.06</val>
    <valTyp>number</valTyp>
    <fmtVal>332,986,338.06</fmtVal>
    <fmtPatrn>#,##0.##</fmtPatrn>
    <exclPatrn>\#,\#0\.\#</exclPatrn>
  </TextFrame1>
</Revenue>
```

Crosstab in Simple format

A table of crosstab cells is the same in Simple format as it is in LDX format. The crosstab corner is also the same in both formats. The element names for columns and rows, however, are transformed to use the data item name.

Here is an example based on the sample report used in “Sample crosstab in LDX format” on page 61

The REST URL to run this report is shown here:

http://localhost/ibmcognos/bi/v1/disp/rsds/pagedReportData/path/Public%20Folders/Samples/Models/GO%20Data%20Warehouse%20%28analysis%29/
The following sample XML is the crosstab output in Simple format. This sample XML does not include the entire document. Removed sections are represented by ellipses (...).

```
<results xmlns="http://developer.cognos.com/schemas/raas/Returns__by__Order__Method">
  <Crosstab1>
    <style>S13</style>
    <corner>
      <ref>R1</ref>
      <style>S1</style>
      <val>Return quantity</val>
      <valTyp>text</valTyp>
    </corner>
    <Return__reason>
      <name>
        <ref>R5</ref>
        <ctx>2</ctx>
        <style>S5</style>
        <item>
          <txt>
            <ref>R2</ref>
            <ctx>2</ctx>
            <style>S2</style>
            <val>Defective product</val>
            <valTyp>text</valTyp>
          </txt>
        </item>
      </name>
      <start>0</start>
      <size>1</size>
    </Return__reason>
    <Return__reason>
      <name>
        <ref>R5</ref>
        <ctx>3</ctx>
        <style>S5</style>
        <item>
          <txt>
            <ref>R2</ref>
            <ctx>3</ctx>
            <style>S2</style>
            <val>Incomplete product</val>
            <valTyp>text</valTyp>
          </txt>
        </item>
      </name>
      <start>1</start>
      <size>1</size>
    </Return__reason>
    ...
    <Product__line>
      <name>
        <ref>R9</ref>
        <ctx>10</ctx>
        <style>S9</style>
        <item>
          <txt>
            <ref>R8</ref>
            <ctx>10</ctx>
            <style>S8</style>
            <val>Camping Equipment</val>
            <valTyp>text</valTyp>
          </txt>
        </item>
      </name>
      <start>0</start>
      <size>1</size>
    </Product__line>
  </Crosstab1>
</results>
```
Mountaineering Equipment

<table>
<thead>
<tr>
<th>Ref</th>
<th>Context</th>
<th>Style</th>
<th>Value</th>
<th>Format Value</th>
<th>Exclusion Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11</td>
<td>11::10::2</td>
<td>S11</td>
<td>36046</td>
<td>36,046</td>
<td>#,#0</td>
</tr>
<tr>
<td>R10</td>
<td>11::10::2</td>
<td>S10</td>
<td>36046</td>
<td>36,046</td>
<td>#,#0</td>
</tr>
</tbody>
</table>

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Chapter 9. Understanding the Data{Set} format

You can render an IBM Cognos resource in the Data{Set} format when you are only interested in the data contained in the report output, and not in any formatting data.

Data{Set} format output consists of a data{Set} root element containing one or more data{Table} elements. Each data{Table} element corresponds to a report part, or to a page of report part output if the report is requested with page breaks.

Requests for Data{Set} formatted output will usually be for a single report part without page breaks.

Sample grouped list in Data{Set} format

This sample illustrates the main parts of a Data{Set} document for a grouped list report.

Here is an example based on the sample report used in “Sample grouped list in LDX format” on page 58

The REST URL to run this report is shown here:

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/path
/Public%2520Folders/Samples/Models/GO%2520Data%2520Warehouse%2520%2528analysis%2529
/Report%2520Studio%2520Report%2520Samples
/Employee%2520Satisfaction%25202006?fmt=DataSet
```

The following sample XML is the grouped list report in Data{Set} format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```
< dataSet >
  < dataTable >
    < id >List1</ id >
    < row >
      < Product__type >Binoculars</ Product__type >
      < Product >Opera Vision</ Product >
      < Quantity >82016</ Quantity >
      < Unit__sale__price >109.436407</ Unit__sale__price >
    </ row >
    ...
    < row >
      < Product__type >Binoculars</ Product__type >
      < Product >Seeker Mini</ Product >
      < Quantity >172851</ Quantity >
      < Unit__sale__price >75.681431</ Unit__sale__price >
    </ row >
    ...
    < row >
      < Product__type >Binoculars</ Product__type >
      < Product >Firefly Charger</ Product >
      < Quantity >302114</ Quantity >
      < Unit__sale__price >51.817049</ Unit__sale__price >
    </ row >
    ...
  </ dataTable >
</ dataSet >
```

The id child element of the data{Table} contains the name of the report part from Reporting. each row in the table is represented by a row element. Element names inside the row element are based on the column title names in the report, and the content of these elements is the cell value from the table.

Sample crosstab in Data{Set} format

This sample illustrates the main parts of a Data{Set} document for a crosstab report.

Here is an example based on the sample report used in “Sample crosstab in LDX format” on page 61
This report is run using a filter to return just the crosstab. The REST URL to run this report is shown here:

```
```

The following sample XML is the crosstab report in LDX format. This sample XML does not include the entire layout data document. Removed sections are represented by ellipses (...).

```
<dataSet>
  < dataTable >
    < id > Crosstab1 </ id >
    < row >
      < Product_line > Camping Equipment </ Product_line >
      < Defective_product > 36046 </ Defective_product >
      < Incomplete_product > 57043 </ Incomplete_product >
      < Wrong_product_shipped > 52199 </ Wrong_product_shipped >
      < Unsatisfactory_product > 61549 </ Unsatisfactory_product >
      < e2004 > 33817 </ e2004 >
      < e2005 > 50769 </ e2005 >
      < e2006 > 57013 </ e2006 >
      < e2007 > 65238 </ e2007 >
    </ row >
    ...
    < row >
      < Product_line > Golf Equipment </ Product_line >
      < Defective_product > 6221 </ Defective_product >
      < Incomplete_product > 5817 </ Incomplete_product >
      < Wrong_product_shipped > 13105 </ Wrong_product_shipped >
      < Unsatisfactory_product > 10068 </ Unsatisfactory_product >
      < e2004 > 6287 </ e2004 >
      < e2005 > 6731 </ e2005 >
      < e2006 > 14047 </ e2006 >
      < e2007 > 8146 </ e2007 >
    </ row >
  </ dataTable >
</ dataSet >
```

As with the grouped list example, element names in the row elements are derived from the column title names in the original report.

**Sample chart in DataSet format**

This sample illustrates the main parts of a DataSet document for a chart report.

This example is based on the sample report Public Folders > Samples > Models > GO Data Warehouse (analysis) > Reporting Report Samples > Employee Satisfaction 2012.

The REST URL to run this report and obtain the LDX output is shown here:

```
```

The HTML output of the report is shown here.
Figure 12: Chart from Employee Satisfaction 2012 report

An abbreviated version of the **Data** element is shown here.

```xml
<dataSet>
  <dataTable>
    <id>Combination Chart - survey scores and benchmark</id>
    <row>
      <Survey_topic>Overall Satisfaction</Survey_topic>
      <Actual_score/>Employee survey topic score</Actual_score>
      <Topic_target_score>0.722459</Topic_target_score>
      <Industry_Standard/>
      <dim5/>
      <dim6/>
      <dim7/>
    </row>
    ...
    <row>
      <Survey_topic>Overall Satisfaction</Survey_topic>
      <Actual_score/>
      <Topic_target_score/>
      <Industry_Standard>Employee survey topic target score</Industry_Standard>
      <dim5>0.740000</dim5>
      <dim6/>
      <dim7/>
    </row>
    ...
    <row>
      <Survey_topic>Overall Satisfaction</Survey_topic>
      <Actual_score/>
      <Topic_target_score/>
      <Industry_Standard>Employee survey benchmark</Industry_Standard>
      <dim5>0.730000</dim5>
      <dim6>
      <dim7/>
    </row>
    ...
  </dataTable>
</dataset>
```

This chart contains three data points for each of five rows, giving a total of 15 data points. The DataSet report output contains 15 row elements, one for each data point. The preceding code snippet displays the three data points for the first row, **Overall Satisfaction**.
Chapter 10. Troubleshooting Mashup Service applications

This section provides information about potential problems you may encounter when using the IBM Cognos Mashup Service and provides solutions and workarounds.

For troubleshooting information that is not specific to the Mashup Service, see the Troubleshooting section of the IBM Cognos Analytics Troubleshooting Guide. You can also refer to component-specific documents.

In IBM Cognos Connection, the service that supports the Mashup Service is called the report data service. You can set logging levels for this service for use when debugging Mashup Service problems. See the IBM Cognos Analytics Administration and Security Guide for instruction on setting up logging.

Attempting to access a saved report version causes the report to be run

If your report is run when you are attempting to retrieve a saved report version, ensure you have modified the report properties in IBM Cognos Connection.

See “Saving report versions” on page 37 for more information.

SOAP application loops indefinitely while waiting for output

If your SOAP application loops indefinitely while waiting for output, ensure you are copying the response session element to the request session element inside the loop that waits for report output.

See “Running Mashup Service methods” on page 24 for details.

SOAP application cannot get response from server

If your REST application requires authentication, you must copy the headers from the authentication object to the report data service object.

See “Creating a report service instance” on page 23 for details.

Web server responses vary for "async=MANUAL" REST option

If your REST application uses the async=MANUAL option and also examines the body of this http response, you should be aware that the contents of the body will differ depending on which Web server is being used by IBM Cognos.

XPath limitations in REST requests

If your REST application uses the xpath option you should be aware that only a subset of XPath can be used.

For more information, see “Using XPath expressions to filter report output” on page 34.
Cookies are required for REST authentication

If your REST application needs to authenticates users to the IBM Cognos server, you must have cookies enabled in your Web browser.

A page not found error is returned for a Mashup Service request

Cognos Mashup Service requests may return a page not found error.

There are two possible solutions for this error as explained here:

• Ensure that the Gateway URI in IBM Cognos Configuration is set to the name of the server and not to localhost.
• If you are using the path or searchPath source types, try using the report source type. If this works, the path or searchPath you tried may have been incorrect.

Updated content is not returned when using the Windows Internet Explorer browser for development work

In the **Temporary Internet Files and History Settings** dialog box, check for newer versions of Web pages every time the browser visits the Web page.

REST requests do not work when the path or searchPath contains non-Latin-1 characters

Some Web servers do not correctly handle URLs containing URL encodings of characters that are not in the Latin-1 character set.

This can occur if your IBM Cognos Analytics installation is in a language that has characters that are not in the Latin-1 character set and you are using the path or searchPath source types.

In this case, instead of using the standard URL-encoding (%xx), encode non-Latin-1 characters in the path or searchPath as _xCCCC, where CCCC is the hexadecimal UTF-8 code point for the character.

Notes

• SOAP applications are not affected by this issue.
• If you have the sequence _x in the URL, encode it as _x005Fx.
• The sequence __ (two underscores) is interpreted as a space character. If you have __ in the URL, encode it as _x005F_x005F.
• REST options appearing after the question-mark symbol (?) in a URL are not affected since they are not decoded by the Web server. They should be URL-encoded using the standard URI-encoding procedure.
Asynchronous REST requests do not work when the Web server uses the Apache HttpClient

Asynchronous REST requests use redirects to the same URL while waiting for the report request to complete. If your server uses the Apache HttpClient, ensure that the value of the HTTP client parameter http.protocol.allow-circular-redirects is true.

Adding a service reference in Microsoft Visual Studio 2008 or later fails

Using Add Service Reference in Microsoft Visual Studio 2008 or later fails. The service reference assumes a SOAP 1.2 interface but the IBM Cognos Mashup Service uses a SOAP 1.1 interface.


Missing report-specific SOAP methods for some reports

The following methods are missing from the report-specific WSDL for some reports.

• drill_<element>
• getFormatted_<element>
• get_<element>

In addition, the response to a getReport method request consists of the report output in Layout Data (LDX) format, not in Simple format.

Note: The response is returned in the report-specific namespace, not in the generic LDX namespace.

Reports with certain structural elements are subject to this limitation. For more information, see “Report-specific method limitations for some reports” on page 27.

Retrieving multiple report outputs in a single-signon authentication environment fails

When attempting to retrieve multiple report outputs in a single-signon authentication environment, one or more of the retrievals fails with the error code RDS-ERR-1000.

This problem occurs because session cookies are being overwritten by multiple asynchronous report requests.

Resolve this issue with one of the following workarounds.

• Wait until a report output is retrieved before requesting a subsequent report.
• Request each report from a different HTML iframe element.
• Use a URL to run each report and display it in Cognos Viewer. For more information, see “Using a URL to display a report in IBM Cognos Viewer” on page 51.

Cognos Mashup Service session expires before timeout limit for authentication provider

When attempting to run a report using the IBM Cognos Mashup Service, the error message "RDS-ERR-1020 The currently provided credentials are invalid. Please provide the..."
logon credentials." is displayed even though the inactivity timeout for the authentication provider has not been reached.

This problem occurs because when you log on a CAM passport is created for your Web browser session. This passport is checked first when you send a Cognos Mashup Service and, if it has expired, a new logon page is returned by the dispatcher.

You can resolve this issue in one of two ways.

- Set the inactivity timeout in IBM Cognos Configuration to a value greater than the inactivity timeout of your authentication provider. The timeout values is set in the Security > Authentication window in Cognos Configuration.
- Log off from the Cognos Mashup Service before sending additional requests. This action will clear the CAM passport.

**RDS-ERR-1031 error message is displayed when running a report**

When attempting to run a report using the IBM Cognos Mashup Service, the error message "RDS-ERR-1031 Report Data Service was unable to retrieve the metadata..." is displayed.

This problem can occur if the user only has EXECUTE and TRAVERSE permissions for the report package.

You can resolve this issue by giving the user READ permission for the report package.
Chapter 11. Upgrading Mashup Service applications

To take advantage of new features in the IBM Cognos Mashup Service, upgrade your Mashup Service applications to comply with the latest version. Some features of previous releases are deprecated in a current release, and will not be available in future releases. You can make minor changes so that your existing applications can function with a current release, however, we recommend that you fully upgrade your applications to the latest version if possible.

Before you can upgrade your Mashup Service applications, you must upgrade your server software from the previous version and install the IBM Cognos Software Development Kit.

Upgrading to version 10.2.2

If you have Mashup Service applications created in previous versions of IBM Cognos Analytics, you can modify them to take advantages of the new features introduced in version 10.2.2.

You should review the new features described in “New features in version 10.2.2” on page 1 to see if their use could enhance your applications.

If you are upgrading from IBM Cognos Analytics version 8.4.1, you should also review “New features in version 10.1.0” on page 4.

If you are upgrading Mashup Service applications from IBM Cognos Analytics version 8.4.0 you will need to make the changes described in “Upgrading to version 8.4.1” on page 85.

Upgrading SOAP applications

If you have a SOAP application, created in a previous version of IBM Cognos Analytics, you simply need to update the WSDL reference in your integrated development environment (IDE) to point to a web server running IBM Cognos Analytics version 10.2.2. Your application will now use the latest versions of the Layout Data and RDS schemas.

If you are creating SOAP messages yourself, you should change the SOAPAction header to http://www.ibm.com/xmlns/prod/cognos/rds/201310.

Upgrading REST applications

You will need to modify your REST application to use the latest versions of the Layout Data and RDS schemas. Use the v REST option with a value of 3 to specify the latest schema versions.

The syntax of secondary requests differs when using the v option. If you specify the option v=3 on a resource call, the web server response look like this:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/ia1284bcaaa004c64b74921108f07c227?v=3
```

You would submit the following URL to receive the next page of output:

```
http://localhost/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/ia1284bcaaa004c64b74921108f07c227/next?v=3
```
Upgrading to version 10.2.1

If you have Mashup Service applications created in IBM Cognos Analytics versions 10.2, 10.1.1, 10.1.0 or 8.4.1, you do not need to make any changes to run them in version 10.2.1.

However, you should review the new features described in “New features in version 10.2.1” on page 2 to see if their use could enhance your applications.

If you are upgrading from IBM Cognos Analytics version 8.4.1, you should also review “New features in version 10.1.0” on page 4.

If you are upgrading Mashup Service applications from IBM Cognos Analytics version 8.4.0 you will need to make the changes described in “Upgrading to version 8.4.1” on page 85.

Upgrading to version 10.2

If you have Mashup Service applications created in IBM Cognos Analytics versions 10.1.1, 10.1.0 or 8.4.1, you do not need to make any changes to run them in version 10.2.

However, you should review the new features described in “New features in version 10.2” on page 3 to see if their use could enhance your applications.

If you are upgrading from IBM Cognos Analytics version 8.4.1, you should also review “New features in version 10.1.0” on page 4.

If you are upgrading Mashup Service applications from IBM Cognos Analytics version 8.4.0 you will need to make the changes described in “Upgrading to version 8.4.1” on page 85.

Upgrading to version 10.1.1

If you have Mashup Service applications created in IBM Cognos Analytics versions 10.1.0 or 8.4.1, you do not need to make any changes to run them in version 10.1.1.

However, you should review the new features described in “New features in version 10.1.1” on page 3 to see if their use could enhance your applications.

If you are upgrading from Cognos Analytics version 8.4.1, you should also review “New features in version 10.1.0” on page 4.

If you are upgrading Mashup Service applications from Cognos 8 BI version 8.4.0 you will need to make the changes described in “Upgrading to version 8.4.1” on page 85.

Upgrading to version 10.1.0

If you have Mashup Service applications created in IBM Cognos Analytics version 8.4.1, you do not need to make any changes to run them in version 10.1.0.

However, you should review the new features described in “New features in version 10.1.0” on page 4 to see if their use could enhance your applications.

If you are upgrading Mashup Service applications from Cognos Analytics version 8.4.0 you will need to make the changes described in “Upgrading to version 8.4.1” on page 85.

If you use the deprecated promptDescription (REST applications) or the getPromptDescription (SOAP applications) methods, you should consider replacing them with the reportPrompts (REST applications) or the getReportPrompts (SOAP applications) methods. The deprecated methods will be removed in a later version of this product. See “Running reports with prompts” on page 38 for information on how to use the new methods.
Upgrading to version 8.4.1

There have been changes made to the IBM Cognos Mashup Service in IBM Cognos Analytics version 8.4.1. There have been changes to the layout formats, the schemas, and to the SOAP and REST programming interfaces. These changes are described in the following topics. Applications created with the previous version of the Mashup Service will run correctly on an Cognos Analytics version 8.4.1 server but you can also upgrade your Mashup Service applications using the procedures shown here.

SOAP programming changes

The SOAP programming changes for Java and C# Mashup Service applications are shown here. There are no changes to report-specific applications, only to generic applications.

Applications created with the previous version of the Mashup Service will work correctly, even if they use methods and classes that have been removed from the current version of the Mashup Service. However, you can also update these applications to use the current classes and methods as described here.

You will need to update the Web services you created using the WSDL from the IBM Cognos Analytics server version 8.4 with the WSDL from the IBM Cognos Analytics server version 8.4.1. If you also created a Web service from the authentication WSDL, you do not need to recreate it, since the authentication WSDL has not changed. After updating the Web service, you can make the class and method changes described here.

A number of classes and methods have been renamed in the current version of the Mashup Service. These changes affect the service definitions and the method calls.

Java service definitions

Replace

```java
RDSLocator rdslocator = new RDSLocator();
RDSService rdsservice = rdslocator.getRDS(new URL(serverURL));
```

with

```java
ReportDataServiceLocator rdslocator = new ReportDataServiceLocator();
ReportDataServicePort rdsservice = rdslocator.getReportDataServiceBinding(new URL(serverURL));
```

Replace

```java
RDSServiceProxy proxy = new RDSServiceProxy();
RDSService mashupService = proxy.getRDSService();
```

with

```java
ReportDataServicePortProxy proxy = new ReportDataServicePortProxy();
ReportDataServicePort mashupService = proxy.getReportDataServicePort();
```

Java method calls

Calls to `GetReportContent` and `GetReportFormatted` are replaced by calls to `getReportData`.

For example, the following code

```java
GetReportContentRequest req = new GetReportContentRequest();
... GetOutputResponse resp = svc.getReportContent(req);
```
is replaced with

```csharp
GetReportDataRequest req = new GetReportDataRequest();
...
GetOutputResponse resp = svc.getReportData(req);
```

When retrieving report output, replace calls to `getContentOutput` with calls to `getLDXOutput`. In addition, you may need to add calls to `getPages`.

For example, the following code

```csharp
resp.getOutput().getContentOutput().getDocument().getPage().getBody()
```

is replaced with

```csharp
resp.getOutput().getLDXOutput().getDocument().getPages()[0].getPage().getBody()
```

### C# service definitions

Replace

```csharp
RDS svc = new RDS();
```

with

```csharp
ReportDataService svc = new ReportDataService();
```

### C# method calls

Calls to `GetReportContent` and `GetReportFormatted` are replaced by calls to `getReportData`.

For example, the following code

```csharp
GetReportFormattedRequest request = new GetReportFormattedRequest();
...
GetOutputResponse response = svc.getReportFormatted(request);
```

is replaced with

```csharp
GetReportDataRequest request = new GetReportDataRequest();
...
GetOutputResponse response = svc.getReportData(request);
```

When retrieving report output, replace calls to `ContentOutput` with calls to `LDXOutput`. In addition, you may need to add calls to `Pages`.

For example, the following code

```csharp
```

is replaced with

```csharp
```
REST programming changes

The REST programming changes for Mashup Service applications are shown here.

The output resource type has been replaced by the reportData resource type.

The paged option has been replaced by the includePageBreaks option.

If you use the xpath option, you will need to modify XPath expressions that use pageGroup or page elements to include the new pages element. For example, the following XPath expression

```
/document/pageGzoup[1]/page/body/...
```

is replaced with

```
/document/pages[1]/pageGzoup/pages/page/body/...
```
Chapter 12. SOAP methods reference

You can use the methods described in this chapter to retrieve and manipulate report outputs.

SOAP faults and exceptions

SOAP faults encountered during execution of an application are converted into one of three different exceptions as shown here.

**CCSAuthenticationFault**
Exception raised for authentication errors.

**CCSPromptFault**
Exception raised if unanswered prompts prevent a report from running.

**CCSGlobalFault**
Exception raised for other errors.

Authentication methods

Use these methods to log on to, and off from, a server that requires authentication.

**logon**
Supplies the credentials for authenticated access to the IBM Cognos Analytics server.
See “Logging on and logging off” on page 22 for more information.

**Method signatures**

**C# programming language**

```csharp
public LogonResponseType logon(LogonRequestType logonRequest)
```

**Java programming language**

```java
public com.cognos.developer.schemas.ccs.auth.types._1.LogonResponseType logon(com.cognos.developer.schemas.ccs.auth.types._1.LogonRequestType parameter)
```

**Output parameter**

“logonResponse” on page 128

**Input parameter**

“logonRequest” on page 128

**logoff**
Logs the user off.

**Method signatures**

**C# programming language**

```csharp
public logoffResponseType logoff(LogoffRequestType logoffRequest)
```
Java programming language

```java
public com.cognos.developer.schemas.ccs.auth.types._1.LogoffResponseType logoff(com.cognos.developer.schemas.ccs.auth.types._1.LogoffRequestType parameter)
```

**Output parameter**

“logoffResponse” on page 127

**Input parameter**

“logoffRequest” on page 127

---

**Generic methods**

Use these methods when developing a generic C# or Java application.

**getCognosURL**

Retrieves the URL of a report to display in IBM Cognos Viewer.

See “Using a URL to display a report in IBM Cognos Viewer” on page 51 for more information.

**Secondary methods**

none

**Method signatures**

**C# programming language**

```csharp
public GetCognosURLResponse getCognosURL(GetCognosURLRequest request)
```

**Java programming language**

```java
```

**Output parameter**

“GetCognosURLResponse” on page 140

**Input parameter**

“GetCognosURLRequest” on page 140

**getOutput**

Polls the IBM Cognos Analytics server until an asynchronous method completes. This method is then used to retrieve the report output.

See “Running Mashup Service methods” on page 24 for more information.

**Secondary methods**

Any secondary method that is valid for the original asynchronous method.

**Method signatures**

**C# programming language**

```csharp
public GetOutputResponse getOutput(GetOutputRequest request)
```
Java programming language

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
    getOutput(com.cognos.developer.schemas.rds.Types._2.GetOutputRequest request)
```

**Output parameter**

“GetOutputResponse” on page 141

**Input parameter**

“GetOutputRequest” on page 141

**getOutputFormat**

Retrieves a URL that can be used to retrieve a report in an IBM Cognos Viewer format.

See “Running reports and retrieving output in IBM Cognos Viewer formats” on page 35 for more information.

**Secondary methods**

None.

**Method signatures**

**C# programming language**

```csharp
public getOutputFormatResponse getOutputFormat( getOutputFormatRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputFormatResponse
```

**Output parameter**

getOutputFormatResponse

**Input parameter**

getOutputFormatRequest

**getOutputFormats**

Retrieves the list of supported provider output formats for the specified report.

See “Running reports and retrieving output in IBM Cognos Viewer formats” on page 35 for more information.

**Secondary methods**

None.

**Method signatures**

**C# programming language**

```csharp
public getOutputFormatsResponse getOutputFormats( getOutputFormatsRequest request)
```
Java programming language

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputFormatsResponse
GetOutputFormats(public
com.cognos.developer.schemas.rds.types._2.GetOutputFormatsRequest request)
```

**Output parameter**

getOutputFormatsResponse

**Input parameter**

GetOutputFormatsRequest

**getPagedReportData**

Retrieves the first page of the output of a content store object, such as a report. You can then use secondary requests to retrieve additional pages of the output.

**Secondary methods**

`drill, first, last, next, previous, release`

**Method signatures**

**C# programming language**

```csharp
public GetOutputResponse getPagedReportData(GetPagedReportDataRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
getPagedReportData(com.cognos.developer.schemas.rds.types._2.GetPagedReportDataRequest request)
```

**Output parameter**

“GetOutputResponse” on page 141

**Input parameter**

“GetPagedReportDataRequest” on page 141

**getPromptAnswers**

Retrieves the prompt answers chosen by a user in a prompt page.

This method is used following a `getPromptPage` request.

**Secondary methods**

None.

**Method signatures**

**C# programming language**

```csharp
public GetPromptAnswersResponse getPromptAnswers(GetPromptAnswersRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetPromptAnswersResponse
getPromptAnswers(com.cognos.developer.schemas.rds.types._2.GetPromptAnswersRequest request)
```
Output parameter  
“GetPromptAnswersResponse” on page 142

Input parameter  
“GetPromptAnswersRequest” on page 142

getPromptDescription  
Gets the prompts associated with a prompt page.
This method is deprecated and will be removed in a future version of this product. Use the getReportPrompts resource type to retrieve prompt descriptions.

Secondary methods  
getCodePromptTreeNode, release

Method signatures  
C# programming language

```csharp
public GetPromptDescriptionResponse getPromptDescription( GetPromptDescriptionRequest request)
```

Java programming language

```java
```

Output parameter  
“GetPromptDescriptionResponse” on page 142

Input parameter  
“GetPromptDescriptionRequest” on page 142

gGetPromptPage  
Collects prompt answers using the IBM Cognos prompt user interface.

Secondary methods  
None.

Method signatures  
C# programming language

```csharp
public GetPromptPageResponse getPromptPage( GetPromptPageRequest request)
```

Java programming language

```java
```

Output parameter  
“GetPromptPageResponse” on page 143
getReportData
Retrieves the content of a report.

Secondary methods
drill, release

Method signatures
C# programming language
public GetOutputResponse getReportData( GetReportDataRequest request)

Java programming language

Output parameter
“GetOutputResponse” on page 141

Input parameter
“GetReportDataRequest” on page 143

getReportPrompts
Retrieves a prompt page in LDX format.

Secondary methods
back, finish, forward, getTreePromptNode, release, reprompt

Method signatures
C# programming language
public GetOutputResponse getReportPrompts( GetReportPromptsRequest request)

Java programming language

Output parameter
“GetOutputResponse” on page 141

Input parameter
“GetReportPromptsRequest” on page 143

Secondary methods
The secondary methods available for generic methods are described here.
See “Secondary operations” on page 25 for more information.
back
Returns to the previous prompt page.

Method signatures
C# programming language
public GetOutputResponse back( BackRequest request)

Java programming language

Output parameter
“GetOutputResponse” on page 141

Input parameter
“BackRequest” on page 131

drill
Drills up or down in an existing report session.

Method signatures
C# programming language
public GetOutputResponse drill( DrillRequest request)

Java programming language

Output parameter
“GetOutputResponse” on page 141

Input parameter
“DrillRequest” on page 136

finish
Skip subsequent prompt pages. You can use this method if subsequent prompts have default values.

Method signatures
C# programming language
public GetOutputResponse finish( ForwardRequestType request)

Java programming language

Output parameter
“GetOutputResponse” on page 141
**Input parameter**
ForwardRequestType

**first**
Retrieves the first page of report output.

**Method signatures**

**C# programming language**

```csharp
public GetOutputResponse first(FirstRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
   first(com.cognos.developer.schemas.rds.types._2.FirstRequestType request)
```

**Output parameter**

“GetOutputResponse” on page 141

**Input parameter**

“FirstRequest” on page 138

**forward**
Retrieves the next prompt page.

**Method signatures**

**C# programming language**

```csharp
public GetOutputResponse forward(ForwardRequestType request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
   forward(com.cognos.developer.schemas.rds.types._2.ForwardRequestType request)
```

**Output parameter**

“GetOutputResponse” on page 141

**Input parameter**

ForwardRequestType

**getTreePromptNode**
Retrieves the next child level for a specified node.

**Method signatures**

**C# programming language**

```csharp
public GetTreePromptNodeResponse getTreePromptNode(GetTreePromptNodeRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetTreePromptNodeResponse
   getTreePromptNode(com.cognos.developer.schemas.rds.types._2.GetTreePromptNodeRequest
   parameters)
```
Output parameter
“GetTreePromptNodeResponse” on page 144

Input parameter
“GetTreePromptNodeRequest” on page 144

last
Retrieves the last page of report output.

Method signatures
C# programming language
public GetOutputResponse last( LastRequest request)

Java programming language
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
last(com.cognos.developer.schemas.rds.types._2.LastRequest request)

Output parameter
“GetOutputResponse” on page 141

Input parameter
“LastRequest” on page 147

next
Retrieves the next page of report output.

Method signatures
C# programming language
public GetOutputResponse next( NextRequest request)

Java programming language
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
next(com.cognos.developer.schemas.rds.types._2.NextRequest request)

Output parameter
“GetOutputResponse” on page 141

Input parameter
“NextRequest” on page 149

previous
Retrieves the previous page of report output.

Method signatures
C# programming language
public GetOutputResponse previous( PreviousRequest request)
Java programming language

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
previous(com.cognos.developer.schemas.rds.types._2.PreviousRequest request)
```

Output parameter

“GetOutputResponse” on page 141

Input parameter

“PreviousRequest” on page 152

**release**

Removes inactive requests from the service cache earlier than they would be removed automatically by the system. Removing inactive requests makes more resources available for other requests, which can improve performance.

**Method signatures**

**C# programming language**

```csharp
public ReleaseResponse release( ReleaseRequest request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.ReleaseResponse
release(com.cognos.developer.schemas.rds.types._2.ReleaseRequest request)
```

Output parameter

“ReleaseResponse” on page 156

Input parameter

“ReleaseRequest” on page 155

**reprompt**

Use this secondary method on a prompt page that has multiple prompts to submit one or more prompt values and have the current prompt page refreshed, instead of moving to the next prompt page. Use this request if the page contained cascading prompts and you needed to submit a prompt response before receiving the subsequent prompt request.

**Method signatures**

**C# programming language**

```csharp
public GetOutputResponse reprompt( ForwardRequestType request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.rds.types._2.GetOutputResponse
reprompt(com.cognos.developer.schemas.rds.types._2.ForwardRequestType request)
```

Output parameter

“GetOutputResponse” on page 141

Input parameter

ForwardRequestType
Report-specific methods

Use these methods when developing a report-specific C# or Java application.

getCognosURL

Gets the URL of a report to display in IBM Cognos Viewer.

Secondary methods

none

Method signatures

C# programming language

```csharp
public GetCognosURLResponseType getCognosURL( object request))
```

Java programming language

```java
public com.cognos.developer.schemas.raas.<report_name>.GetCognosURLResponseType
getcognosURL( java.lang.Object request)
```

Output parameter

GetCognosURLResponseType

Input parameter

Not applicable.

getFormattedReport

Retrieves the content of a report in a specified format.

Secondary methods

drillFormatted, release

Method signatures

C# programming language

```csharp
public GetFormattedReportResponseType getFormattedReport( GetFormattedReportRequestType
request)
```

Java programming language

```java
public com.cognos.developer.schemas.raas.<report_name>.GetFormattedReportResponseType
getFormattedReport(com.cognos.developer.schemas.raas
.<report_name>.GetFormattedReportRequestType request)
```

Output parameter

“GetFormattedReportResponseType” on page 104

Input parameter

“GetFormattedReportRequestType” on page 104
**getFormatted_<element>**
Retrieves a specific report element in a specified format.

**Note:** This method is not available for certain reports. For more information, see “Report-specific method limitations for some reports” on page 27

**Secondary methods**
drill_<element>, release

**Note:** The element name in the drill secondary request must match the element name in the getFormatted request.

**Method signatures**

**C# programming language**
```csharp
public GetFormattedReportResponseType getFormatted_<element>( GetFormatted_<element>RequestType request)
```

**Java programming language**
```java
public com.cognos.developer.schemas.raas.<report_name>.GetFormattedReportResponseType
getFormatted_<element>RequestType request)
```

**Output parameter**
“Get_<element>ResponseType” on page 104

**Input parameter**
“GetFormatted_<element>RequestType” on page 104

**getPromptAnswers**
Retrieves the prompt answers chosen by a user in a prompt page.

This method is used following a getPromptPage request.

**Secondary methods**
none

**Method signatures**

**C# programming language**
```csharp
public PromptAnswersResponseType getPromptAnswers( PromptAnswersRequestType request)
```

**Java programming language**
```java
public com.cognos.developer.schemas.raas.<report_name>.PromptAnswersResponseType
getPromptAnswers(com.cognos.developer.schemas
.raas.<report_name>.PromptAnswersRequestType request)
```

**Output parameter**
“PromptAnswersResponseType” on page 105

**Input parameter**
“PromptAnswersRequestType” on page 105
getPromptPage

Collects prompt answers using the IBM Cognos prompt user interface.

Secondary methods

none

Method signatures

C# programming language

```csharp
public PromptPageResponseType getPromptPage(PromptPageRequestType request)
```

Java programming language

```java
```

Output parameter

“PromptPageResponseType” on page 105

Input parameter

“PromptPageRequestType” on page 105

getReport

Retrieves the content of a report.

This method retrieves the report output in LDX format for some reports.

For more information, see “Report-specific method limitations for some reports” on page 27

Secondary methods

drillFormatted, release

Method signatures

C# programming language

```csharp
public GetReportResponseType getReport(GetReportRequestType request)
```

Java programming language

```java
```

Output parameter

“GetReportResponseType” on page 104

Input parameter

“GetReportRequestType” on page 104

get_<element>

Retrieves the requested report element only.

This method is not available for certain reports. For more information, see “Report-specific method limitations for some reports” on page 27
Secondary methods

`drill_<element>`, `release`

**Note:** The element name in the drill secondary request must match the element name in the getFormatted request.

Method signatures

**C# programming language**

```csharp
public Get_<element>ResponseType get_<element>(Get_<element>RequestType request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.raas.<report_name>.Get_<element>ResponseType
    getOutput(com.cognos.developer.schemas.raas.<report_name>.Get_<element>RequestType request)
```

Output parameter

“`Get_<element>ResultsType`” on page 104

Input parameter

“`Get_<element>RequestType`” on page 104

Secondary methods

The secondary methods available for report-specific methods are described here. See “Secondary operations” on page 25 for more information.

`drillFormatted`

Drills up or down in an existing formatted report session.

Method signatures

**C# programming language**

```csharp
public GetFormattedReportResponseType drillFormatted(DrillRequestType request)
```

**Java programming language**

```java
public com.cognos.developer.schemas.raas.<report_name>.GetFormattedReportResponseType
    drillFormatted(com.cognos.developer.schemas.raas.<report_name>.DrillRequestType request)
```

Output parameter

“`GetFormattedReportResponseType`” on page 104

Input parameter

`DrillRequestType`

`drill_<element>`

Drills up or down in a specific element in an existing report session.

This method is not available for certain reports. For more information, see “Report-specific method limitations for some reports” on page 27.
Method signatures

C# programming language

```csharp
public Get_<element>ResponseType drill( DrillRequestType request)
```

Java programming language

```java
public com.cognos.developer.schemas.raas.<report_name>.Get_<element>ResponseType
drill(com.cognos.developer.schemas.raas.<report_name>.DrillRequestType request)
```

Output parameter

“Get_<element>ResponseType” on page 104

Input parameter

DrillRequestType

**release**

Removes inactive requests from the service cache earlier than they would be removed automatically by the system. Removing inactive requests makes more resources available for other requests, which can improve performance.

Method signatures

C# programming language

```csharp
public object release( ReleaseRequestType request)
```

Java programming language

```java
public java.lang.Objectrelease(com.cognos.developer.schemas.raas
.<report_name>.ReleaseRequestType request)
```

Output parameter

Not applicable.

Input parameter

ReleaseRequestType

---

**Request and response elements not included in the RDS schema**

Some request and response elements are not included with the schemas documented in this guide. The following table maps elements that have a direct equivalent element in the RDS Schema Reference.

<table>
<thead>
<tr>
<th>Report-specific method element</th>
<th>RDS schema element</th>
</tr>
</thead>
<tbody>
<tr>
<td>DrillRequestType</td>
<td>DrillRequest</td>
</tr>
<tr>
<td>ForwardRequestType</td>
<td>ForwardRequest</td>
</tr>
<tr>
<td>GetCognosURLResponseType</td>
<td>GetCognosURLResponse</td>
</tr>
<tr>
<td>ReleaseRequestType</td>
<td>ReleaseRequest</td>
</tr>
</tbody>
</table>
XML elements reference

The following XML elements are not part of the schemas documented elsewhere in this guide.

**GetFormattedReportRequestType**
Retrieves the formatted report content.

**Content Model**

session then format then PromptAnswersType *(any number)*

**GetFormattedReportResponseType**
Contains the formatted report content.

**Content Model**

session then results *(optional)* then extension *(optional)*

**GetFormatted_<element>RequestType**
Retrieves the formatted report content for a specific report part.

**Content Model**

version then session then format then PromptAnswersType

**GetReportRequestType**
Retrieves the report content.

**Content Model**

version then session *(optional)* then PromptAnswersType *(any number)*

**GetReportResponseType**
Contains the report content.

**Content Model**

session then report *(optional)* then extension *(optional)*

**Get_<element>RequestType**
Retrieves the report content for a specific report part.

**Content Model**

version then session *(optional)* then PromptAnswersType *(any number)*

**Get_<element>ResponseType**
Contains the report content for a specific report part.

**Content Model**

session then Get_<element>ResultsType *(optional)*

**Get_<element>ResultsType**
Contains the report output for a named report part.

**Content Model**

The content of this element varies depending on which report part is being retrieved. You can determine the content from the report-specific WSDL file or the tools in your integrated development environment.
**PromptAnswersRequestType**
Retrieves the prompt answers associated with the session identifier.
This command is used after the `getPromptPage` command.

**Content Model**

```
session then extension (optional)
```

**PromptAnswersResponseType**
Contains the prompt answers.

**Content Model**

```
PromptValue (any number) then extension (optional)
```

**PromptPageRequestType**
Retrieves a url from the IBM Cognos server to fulfill prompt answers.
It also retrieves a session identifier to use in the `getPromptAnswers` method.

**Content Model**

```
extension (optional)
```

**PromptPageResponseType**
Contains the prompt page response.
This command follows a `getPromptPage` command.

**Content Model**

```
session then url then extension (optional)
```

**PromptValue**
Represents one or more prompt values.

**Content Model**

```
name then PValueArrayItem (any number)
```

**PValueArrayItem**
Contains a prompt value.

**Content Model**

```
SimplePValue or RangePValue or TreePValue or extension (optional)
```
**report**
Contains the report output.

**Content Model**
The content of this element varies depending on which report part is being retrieved. You can determine the content from the report-specific WSDL file or the tools in your integrated development environment.

**results**
Contains the report output.

**Content Model**
Content type is string.

**TreePValue**
Specifies a tree prompt value.

**Content Model**
inclusive then TreePValue then SimplePValue
Chapter 13. REST interface reference

The REST interface syntax for initial requests is

```
http://webservename:portnumber/ibmcognos/bi/v1/disp/rds/resource_type/source_type/source_id?option1=val1&option2=val2...
```

Some Mashup Service tasks require several interactive steps to complete. Examples are retrieving report output one page at a time, collecting report prompts, and drilling up or down in a report. In these cases, the initial request has the syntax that is displayed above. Secondary requests have the syntax shown here.

```
http://webservename:portnumber/ibmcognos/bi/v1/disp/rds/sessionOutput/conversationID/conv_ID/secondary_request?option1=val1&option2=val2...
```

The resource types, source types, options, and secondary requests are described in the following topics. Most of the XML structures that are inputs to, or responses from, the REST commands are part of the Authentication Schema Reference, Layout Data Schema Reference, or the RDS Schema Reference. However, there are some XML structures that are unique to the URL interface and are not part of these three schemas. These are documented in “XML elements reference” on page 122.

**Resource types**

Resource types are the commands that you use to communicate with the IBM Cognos Analytics server.

**auth/logon**

Supplies the credentials for authenticated access to an IBM Cognos Analytics server.

On the initial call, an empty `credentials` elements is passed using the `xmlData` option.

**Source types**

None.

**Options**

`xmlData`

**Secondary requests**

None.

**Output**

The output from the server consists of a `credentials` element in which `actualValue` elements contain credential elements whose value has been determined and `missingValue` elements contain credential elements whose values need to be supplied. The logon request is sent again, with the missing values supplied. If all missing values are entered and the use can be authenticated, the server responds with an `accountInfo` element that contains the user’s account information.

**auth/logoff**

Logs the user off.

**Source types**

None.
Options
None.

Secondary requests
None.

Output
The output from the server consists of a noerror element.

auth/wsdl
Retrieves the WSDL file for the authentication service. This is used by SOAP applications that must authenticate with the IBM Cognos Analytics server.

Source types
None.

Options
None.

Secondary requests
None.

Output
The output from the server consists of the WSDL file for the authentication service.

atom
Retrieves the description of a report as an ATOM feed.

Source types
path, report, searchPath

Options
eltype, selection

Secondary requests
None.

Output
The ATOM output for a report or report part contains information about the report or report part, followed by one or more atom:entry elements that contain information about, and links to, the report parts that make up the report or report part. The ATOM output contains standard ATOM elements as well as elements that are unique to the Mashup Service.

Top level (report) feed
The top level feed for a report contains standard ATOM elements as well as the following Mashup Service specific elements.

<atom:link rel="self" type="application/atom+xml" href="..."/>
A URL to the ATOM feed for the report.
<atom:link rel="alternate" type="text/xml" href="..."/>
A URL to run the report using the reportData resource type.

<atom:link rel="alternate" type="application/x-lidx+xml" href="..."/>
A URL to run the report using the reportData resource type.

<atom:link rel="alternate" type="application/x-pagedldx+xml" href="..."/>
A URL to run the report using the pagedReportData resource type.

d:owner
The display name of the owner of the report.

d:ownerEmail
The email address of the owner, if available.

d:contact
The display name of the contact for the report.

d:contactEmail
The email address of the contact, if available.

d:location
The path to the report.

d:description
The description of the report.

d:thumbnailURL
The URL of a thumbnail view of the report.

Report part feed
The feed for a report part can contain the following additional Mashup Service specific elements.

  d:type
  The element type of this report part.

  d:storeID
  The Content Manager storeID of the report that contains this part.

  d:partID
  The name of the part.

  cm:location
  The content manager location of the part.

cognosurl
Retrieves the URL that displays the report output using IBM Cognos Viewer.

Source types
path, report, searchPath

Options
None.

Secondary requests
None.

Output
The output from the server consists of a GetCognosURLErrorResponse element.
outputFormat
Runs a report and retrieves the output in a specified format.
You can determine the possible output formats by first running the outputFormats resource type.

**Note:** The format of this REST task differs from other REST commands. The format is

http://webservername:portnumber/ibmcognos/bi/v1/disp/zds
/outputFormat/source_type/source_id/output_format

where *output_format* is the desired output format.

**Source types**
path, report, searchPath

**Options**
async, burstID, burstKey, p_parameter, saveOutput, selection, version, versionID, xmlData

**Secondary requests**
None.

**Output**
The output from the server consists of the report output in the specified format.

outputFormats
Retrieves a list of supported formats for the report.
The possible values for the output formats are described in the outputFormatEnum enumeration set documented in the Software Development Kit Developer Guide

**Source types**
path, report, searchPath

**Options**
None.

**Secondary requests**
None.

**Output**
The output from the server consists of a GetOutputFormatsResponse element.

pagedReportData
Retrieves the first page of the output of a content store object, such as a report. You can then use secondary requests to retrieve additional pages of the output.

**Source types**
path, report, searchPath
Options

*drill through parameter*, async, burstID, burstKey, drillthroughurls, drillurls, embedImages, excludePage, fmt, height, includeLayout, includePageBreaks, inlineStyles, p_parameter, rowLimit, saveOutput, selection, useRelativeURL, v, version, versionID, width, xmlData, xpath

Secondary requests

*drill*, first, last, next, previous, release

Output

The output from the server consists of the first page of the requested report, or report elements, in the requested format.

The report is run synchronously or asynchronously depending on the value of the async option.

promptAnswers

Retrieves the prompt answers chosen by a user in a prompt page.

Source types

conversationID

Use the promptID returned in the response from a promptPage request to populate the source type.

Options

v

Secondary requests

None.

Output

The output from the server consists of a promptAnswers element.

promptDescription

Retrieves the descriptions of the prompts for a report.

This resource type is deprecated and will be removed in a future version of this product. Use the reportPrompts resource type to retrieve prompt descriptions.

Source types

path, report, searchPath

Options

v, xmlData

Secondary requests

None.

Output

The output from the server consists of a GetPromptDescriptionResponse element.
promptPage
Displays the standard IBM Cognos prompt page for a report.

Source types
path, report, searchPath

Options
useRelativeURL, v

Secondary requests
None.

Output
The output from the server consists of a GetPromptPageResponse element. The url element in the response contains the URL of the IBM Cognos prompt page. The promptID element can be passed as a conversationID in a promptAnswers URL to retrieve the prompt answers selected by a user.

providerOutput
Returns a report output that has been saved in Content Manager.
This resource type is deprecated and will be removed in a future version of this product. Use the outputFormat resource type to retrieve report outputs.

Source types
path, report, searchPath

Options
burstID, burstKey, fmt

Secondary requests
None.

Output
The output from the server consists of the requested saved report.

reportData
Retrieves the output of a content store object, such as a report.

Source types
path, report, searchPath

Options
drill_through_parameter, async, burstID, burstKey, drillthroughurls, drillurls, embedImages, excludePage, fmt, height, includeLayout, includePageBreaks, inlineStyles, p_parameter, rowLimit, saveOutput, selection, useRelativeURL, v, version, versionID, width, xmlData, xpath

Secondary requests
drill, release
Output
The output from the server consists of the requested report, or report elements, in the requested format. The report is run synchronously or asynchronously depending on the value of the async option.

reportPrompts
Retrieves a prompt page in LDX format.

Source types
path, report, searchPath

Options
v

Secondary requests
finish, forward, reprompt, treePromptNode

Output
The output from the server consists of a GetPromptPageResponse element. The url element in the response contains the URL of the IBM Cognos prompt page. The promptID element can be passed as a conversationID in a promptAnswers URL to retrieve the prompt answers selected by a user.

thumbnail
Retrieves a graphical preview of the report output, run without data. If a preview cannot be generated within 5 seconds, then a default image is returned.

Source types
path, report, searchPath

Options
None.

Secondary requests
None.

Output
The output from the server is a thumbnail image.

wsdl
Retrieves the SOAP-based Web service description of a report.

Source types
path, report, searchPath

Options
None.
Secondary requests
None.

Output
The output from the server is a WSDL file that is the Web service description of the report.

wsil
Retrieves the WSIL description of the Web services and other WSIL containers within a folder.

Source types
path, report, searchPath

Options
None.

Secondary requests
None.

Output
The output from the server is a WSIL file that is the WSIL description of the Web services and other WSIL containers within the folder.

Source types
Source types are used to specify which report or asynchronous conversation the REST command is referring to.

conversationID
The source is a resource that is identified by an ID.
If the resource type is not promptAnswers, this source is a conversation ID that is stored in Content Manager for asynchronous and secondary requests.
A sample URL using a conversationID is shown here.

http://localhost/ibmcognos/bi/v1/disp/rds/reportData/conversationID/i0EDF76C5EC064255A1C4F27FB6AE147A

If the resource type is promptAnswers, this is the value of the promptID element contained in the response to a promptPage resource type.

path
The source is a resource that is referenced by its simplified path. The path can have as its root:
• Public%20Folders for objects contained in Public Folders.
• ~ for the My Folders of the current user
• CAMID(user) for the My Folders of another user
A sample URL using a path is shown here.

**report**

The source is a resource that is referenced by its storeID. Note that the storeID of the same report will differ in different IBM Cognos installations.

A sample URL using a storeID is shown here.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData
/report/i0E130B9A0A21463582535CF2D47B45F8
```

**searchPath**

The source is a resource that is referenced by its search path.

A sample URL using a search path is shown here.

```
http://localhost/ibmcognos/bi/v1/disp/rds/reportData/searchPath
/content/folder[@name='Samples']/folder[@name='Models']/package[@name='GO Sales (query)']
/folder[@name='Reporting Report Samples']/report[@name='Order Invoices - Donald Chow, Sales Person']
```

**Options**

Options enable you to provide further detail about a REST command. The options allowed vary depend on the resource type.

**drill_through_parameter**

Specifies the name and value of a drill through parameter used to run a drill through report. The name of the parameter is the name of the drill through parameter. See Drilling through to another report.

**async**

Specifies whether the report will be run synchronously or asynchronously. The possible values are shown here. The default value is AUTO.

- **AUTO**
  
The report is run asynchronously. The server returns the http redirect response code (303) and a redirect URL. If the Web client is set to follow redirects, then the client will poll automatically.

- **MANUAL**
  
The report is run asynchronously. The server returns the http response code (202) and a polling URL in the location http header. The format of the response body varies depending on the Web server being used.

- **OFF**
  
The report is run synchronously. The server will not respond to the request until the output is available.

**burstID**

If the value of version is VERSION_NAME, this option can be used to provide a burstId value.

**burstKey**

If the value of version is VERSION_NAME, this option can be used to provide a burstKey value.

**contextId**

Specifies the ctx item to drill up or down on.

**direction**

Specifies the drill direction in a report. Its value is one of the values of the direction element.
**drillthroughurls**

Specifies whether HTML output contains drill-through information. The default value is false.

- **true**
  - HTML output contains drill-through information

- **false**
  - HTML output does not contain drill-through information

For more information, see “Drilling through to another report” on page 50.

**drillurls**

Specifies whether HTML output contains drill-up and drill-down information. The default value is false.

- **true**
  - HTML output contains drill-up and drill-down information

- **false**
  - HTML output does not contain drill-up and drill-down information

For more information, see “Drilling up and down in reports” on page 49.

**eltype**

Specifies which element of a report part to return in an ATOM feed.

**embedImages**

Specifies whether images that are included in HTML output are expressed as links to images on the IBM Cognos Analytics server or are embedded as data in the HTML output. The default value is false.

- **true**
  - HTML output contains images as data.

- **false**
  - HTML output contains links to images on the Cognos Analytics server.

This option requires that **fmt** be set to HTML or HTMLFragment.

**excludePage**

Specifies that when the selection option is being used to select a report part, report pages are not considered. The default value is false.

Although report parts in a report must have unique names, it is possible for a report page to have the same name as a report part, such as a list. Setting this option to true will ensure that a report part is selected rather than a report page with the same name.

**fmt**

Specifies the format of the returned output.

If the resource type is not providerOutput (deprecated), the possible values are shown here. These values are case-sensitive. The default value is layoutDataXML.

See “Output formats” on page 9 for more information about output formats.

- **layoutDataXML**
  - Output is XML based on the LDX schema. See Layout Data Schema Reference.

- **HTML**
  - Output is a complete HTML file with style information in an inline stylesheet.

- **HTMLFragment**
  - Output is a fragment of an HTML file with inline style information.

- **JSON**
  - Output is in JavaScript Object Notation format.
Simple
Output is in Simple format. See Using the Simple Format.

Image
Output is a portable network graphic (.png) image of the report output.

DataSet
Output is XML in the DataSet format. See Using the DataSet format.

DataSetAtom
Output is XML in the Atom version of the DataSet format.

DataSetJSON
Output is XML in the JSON version of the DataSet format.

If the resource type is providerOutput (deprecated), the possible values are those in the outputFormatEnum enumeration set documented in the IBM Cognos Software Development Kit Developer Guide. The default value is the format of the default saved report.

**height**
Specifies the height of the image returned when using the Image output format (fmt). The default value provides an output that is approximately the same size as when the report is viewed in IBM Cognos Viewer.

**includeLayout**
Specifies whether the output should include all formatting elements or only a subset of them. If the value of this option is false, then the following layout elements are not included in the report output, although report elements inside these elements are returned:
- blk
- sngl
- tbl
- p_ elements
The default value is false when using the reportData resource type and true when using the pagedReportData resource type.

*Note:* This option has no effect when the value of fmt is Simple, DataSet, or DataSetAtom.

**includePageBreaks**
Specifies whether the output should be returned as one page or should be separated into pages as in Report Viewer. The default value is false.

- true
  The output is separated into pages as in Report Viewer.

- false
  The output is returned as a single page.

**inlineStyles**
Specifies where style information in HTMLFragment output is located.

- true
  The style information is included in style attributes in the HTML elements. This is the default value.

- false
  The style information is included in style elements preceding the HTML elements.
**mtchAll**
Specifies whether the search results returned match all of the search words entered. The default value is false.

- **true**
  The results returned match all of the search words entered. When mtchAny is also true, then the search can contain all the keywords in any order.

- **false**
  The results returned match any of the search words entered.

**mtchAny**
Specifies whether the search results contain or start with the keywords. The default value is false.

- **true**
  The results returned contain the key words.

- **false**
  The search results returned start with the keywords.

**nocate**
Specifies whether the search is case sensitive or case insensitive. The default value is true.

- **true**
  The search is case insensitive.

- **false**
  The search is case sensitive.

**pname**
Specifies the report parameter to search on.

**p_parameter**
Specifies the name and values of a prompt parameter. The values used are the useValue elements of a GetPromptAnswersResponse response element. For example, p_P_Year=[Promotion].[Time].[Year]-[Time].[2005]. (See Running a report with prompts.)

The following table shows the forms of this option that may also be used.

<table>
<thead>
<tr>
<th>Form</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>p__parameter=&lt;start&gt;:&lt;end&gt;</td>
<td>p_OrderNumber=1156:1156</td>
</tr>
<tr>
<td>p__parameter=&lt;MIN&gt;:&lt;end&gt;</td>
<td>p_SalesTarget=&lt;MIN&gt;:500</td>
</tr>
<tr>
<td>p__parameter=&lt;start&gt;:&lt;MAX&gt;</td>
<td>p_SalesTarget=500:&lt;MAX&gt;</td>
</tr>
<tr>
<td>p__parameter=&lt;NULL&gt;</td>
<td>p_Country=&lt;NULL&gt;</td>
</tr>
<tr>
<td>p__parameter=&lt;NONE&gt;</td>
<td>p_Country=&lt;NONE&gt;</td>
</tr>
<tr>
<td>p__parameter=&lt;![CDATA[&lt;value]]&gt;</td>
<td>p_Time=&lt;![CDATA[12:04:34]]&gt;</td>
</tr>
</tbody>
</table>

p_\_parameter=\<NONE\> is used to skip an optional parameter. It is distinct from p_\_parameter=\<NULL\>, which send a NULL value, or p_\_parameter="", which sends a blank value for the prompt.

**rowLimit**
Specifies the number of rows of data to be returned. For example, rowLimit=20.
**saveOutput**

Specifies that a copy of the report output is to be saved in the Content Store. For example, `saveOutput=true`.

**selection**

Specifies that only specific report elements is to be returned. For example, `selection=List1`.

*Note:* For resource types other than `outputFormat`, you can specify a semicolon-separated list to return multiple report elements. For example, `selection=List1,List3` will return both List1 and List3.

**srchVal**

Specifies the keywords to search on.

**swsID**

Specifies the ID of the prompt.

**useRelativeURL**

When 1, the URL returned from the IBM Cognos Analytics server will be based on the external gateway URI and not on the internal dispatcher URI.

**v**

Specifies which version of the layout data (LDX) schema to use. The default value is 2.

Use this option when the request is returning output in `layoutDataXML`, `HTML`, `HTMLFragment`, `JSON`, or `RDS` schema formats. You should also use this option for all secondary requests, if the initial request uses this option.

1. Layout data schema version 1 is used.
2. Layout data schema version 2 is used.
3. Layout data schema version 3 is used.

**version**

Specifies the version of the report to retrieve. Its value is one of the values of the `versionType` element.

**versionID**

If the value of `version` is `VERSION_NAME`, this option must be used to provide a `versionName` value.

**width**

Specifies the width of the image returned when using the Image output format (fmt). The default value provides an output that is approximately the same size as when the report is viewed in IBM Cognos Viewer.

**xmlData**

Specifies other request parameters in XML format.

**xpath**

Specifies a location of the report output as an XPath 2.0 expression. The XPath expression is relative to the `layoutDataXML` representation of the report output.

See “Using XPath expressions to filter report output” on page 34 for more information.
Secondary requests

Secondary requests are used in REST operations that require several interactive steps to complete, such as:

- Retrieving report output one page at a time.
- Collecting report prompts.
- Drilling up or down in a report.

In order to make secondary requests, the primary request must be an asynchronous request (see the `async` option).

Secondary operation requests are created by taking the URL that is returned by the IBM Cognos Analytics server, and appending to it the secondary request and any required options. The resulting URL is then submitted to the server. For an example, see Collecting prompts from multiple prompt pages.

Any secondary request can also be configured as a resource type. For example,

```
http://webservername:portnumber/ibmcognos/bi/v1/disp/ids
/sessionOutput/conversationID/conv_ID/secondary_request
?option1=val1&option2=val2...
```

is equivalent to

```
http://webservername:portnumber/ibmcognos/bi/v1/disp/ids
/secondary_request/conversationID/conv_ID
?option1=val1&option2=val2...
```

However, when coding mashup applications using the REST interface, it will usually be more convenient to use the first version of the secondary operation syntax.

back

Returns to the previous prompt page.

See Collecting cascading prompts.

Options
None.

drill

Drills up or down in a report.

Options
`contextId`, `direction`

finish

Skips subsequent prompt pages. You can use this request if subsequent prompts have default values.

Options
`p_parameter`

first

Retrieves the first page of report output.

Options
None.
forward
Retrieves the next prompt page.
See Collecting cascading prompts.

Options
p_parameter

last
Retrieves the last page of report output.

Options
None.

next
Retrieves the next page of report output.

Options
None.

previous
Retrieves the previous page of report output.

Options
None.

release
Terminates an asynchronous conversation and frees up the server resources associated with this conversation.

Options
None.

reprompt
Use this secondary request on a prompt page that has multiple prompts to submit one or more prompt values and have the current prompt page refreshed, instead of moving to the next prompt page. Use this request if the page contains cascading prompts and you need to submit a prompt response before receiving the subsequent prompt request.

Options
mtchAll, mtchAny, nocase, pname, p_parameter, srchVal, swsID

treePromptNode
Use this secondary request on a tree prompt page. Use this request to move down to the next level in the tree hierarchy.

Options
,p_parameter
XML elements reference

The following XML elements are not part of the schemas documented elsewhere in this guide.

**error**
Contains the response to a URL request that fails.

**Content Model**
message then promptID *(optional)* then *url *(optional)*

**noerror**
Contains the response to a successful log off request.

**Content Model**
empty

**promptAnswers**
Contains prompt answers.

This element contains the response to the promptAnswers URL request. This element is also submitted in the xmlData option when requesting multiple prompt pages with the promptDescription resource type or running a report that has prompts.

**Content Model**
conversationID *(optional)* then promptValues *(any number)*
Chapter 14. Authentication schema reference

For each layout data specification element, this section provides

- the name and description of the element
- sample code that demonstrates how to use the element, or a cross-reference to a topic that contains sample code
- information about attributes that apply to the element, including each attribute’s name, description, optionality, legal values, and default value, if applicable
- content model information, consisting of a list of valid child elements presented as an element model group
- a list of valid parent elements

accountID

Specifies the IBM Cognos account ID from Cognos Access Manager (CAM).

For example:

```xml
<auth:accountInfo xmlns:auth="http://developer.cognos.com/schemas/ccs/auth/types/1">
  <auth:accountID>
    CAMID("ent:u=S-1-5-21-1764567485-45980859-2736415891-4187")
  </auth:accountID>
  <auth:displayName>campbelk</auth:displayName>
</auth:accountInfo>
```

**Content model**

Content type is string.

**Parent elements**

accountInfo

accountInfo

Contains the account information returned in a logonResponse.

For sample XML, see accountID.

**Content model**

accountID then displayName then extension (optional)

**Parent elements**

result

actualValue

Specifies a known value for the credential piece specified by the name.

For sample XML, see credentialPrompt or credentials.
**Content model**

Content type is string.

**Parent elements**

value

---

**credentialElements**

Contains a piece of the credential.

**Content model**

name then label (optional) then value then extension (optional)

**Parent elements**

credentialPrompt, credentials

---

**credentialPrompt**

Contains list of credentials required for authentication, including both missing and actual values.

For example:

```xml
<auth:credentialPrompt
 xmlns:auth="http://developer.cognos.com/schemas/ccs/auth/types/1">
 <auth:credentialElements>
  <auth:name>CAMNamespace</auth:name>
  <auth:value>
   <auth:actualValue>ent</auth:actualValue>
  </auth:value>
 </auth:credentialElements>
 <auth:credentialElements>
  <auth:name>CAMNamespaceDisplayName</auth:name>
  <auth:label>Namespace:</auth:label>
  <auth:value>
   <auth:actualValue>ent</auth:actualValue>
  </auth:value>
 </auth:credentialElements>
 <auth:credentialElements>
  <auth:name>CAMUsername</auth:name>
  <auth:label>User ID:</auth:label>
  <auth:value>
   <auth:missingValue>
    <auth:valueType>text</auth:valueType>
   </auth:missingValue>
  </auth:value>
 </auth:credentialElements>
 <auth:credentialElements>
  <auth:name>CAMPassword</auth:name>
  <auth:label>Password:</auth:label>
  <auth:value>
   <auth:missingValue>
    <auth:valueType>textnoecho</auth:valueType>
   </auth:missingValue>
  </auth:value>
 </auth:credentialElements>
</auth:credentialPrompt>
```
<auth:label>Namespace:</auth:label>
<auth:value>
  <auth:actualValue>ent</auth:actualValue>
</auth:value>
</auth:credentialElements>
<auth:credentialElements>
  <auth:name>CAMUsername</auth:name>
  <auth:label>User ID:</auth:label>
  <auth:value>
    <auth:missingValue>
      <auth:valueType>text</auth:valueType>
    </auth:missingValue>
  </auth:value>
</auth:credentialElements>
<auth:credentialElements>
  <auth:name>CAMPassword</auth:name>
  <auth:label>Password:</auth:label>
  <auth:value>
    <auth:missingValue>
      <auth:valueType>textnoecho</auth:valueType>
    </auth:missingValue>
  </auth:value>
</auth:credentialElements>
</auth:credentialPrompt>

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

credentialElements (any number) then extension (optional)

Parent elements

result

credentials

Contains list of credentials to pass to the server for authentication.

For example:

```xml
<auth:credentials xmlns:auth="http://developer.cognos.com/schemas/ccs/auth/types/1">
  <auth:credentialElements>
    <auth:name>CAMNamespace</auth:name>
    <auth:value>
      <auth:actualValue>ent</auth:actualValue>
    </auth:value>
  </auth:credentialElements>
  <auth:credentialElements>
    <auth:name>CAMNamespaceDisplayName</auth:name>
    <auth:value>
      <auth:actualValue>ent</auth:actualValue>
    </auth:value>
  </auth:credentialElements>
  <auth:credentialElements>
    <auth:name>CAMUsername</auth:name>
    <auth:value>
      <auth:actualValue>myuserid</auth:actualValue>
    </auth:value>
  </auth:credentialElements>
  <auth:credentialElements>
    <auth:name>CAMPassword</auth:name>
    <auth:value>
      <auth:actualValue>mypasswd</auth:actualValue>
    </auth:value>
  </auth:credentialElements>
</auth:credentials>
```
Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

credentialElements (any number) then extension (optional)

Parent elements

logonRequest

displayName

Specifies the display name for the account, if available.
For sample XML, see accountID.

Content model

Content type is string.

Parent elements

accountInfo

enumeration

Contains a list of values that can be used for the credential. This list is provided by the server.

Content model

label then value

Parent elements

missingValue

extension

Reserved.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.
item

Reserved.

Content model
Content type is anyType.

Parent elements
extension

label

Specifies the label for the credential piece or the enumeration value.

Content model
Content type is string.

Parent elements
credentialElements , enumeration

logoffRequest

Requests a logoff.

Attributes
Adding Other Attributes
anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model
extension (optional)

logoffResponse

Contains the response to the logoffRequest command.
**logonRequest**

Requests a logon.

**Attributes**

**Adding Other Attributes**

- anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

- credentials then extension (optional)

**logonResponse**

Contains response to the logonRequest command.

**Content model**

- responseCode then responseMessage (optional) then result then extension (optional)

**missingValue**

Specifies a missing value required by the server for authentication.

For sample XML, see credentialPrompt.

**Attributes**

**Adding Other Attributes**

- anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

- valueType then enumeration (any number) then extension (optional)

**Parent elements**

- value

**name**

Specifies the name of the credential piece. This element contains an ID used by Cognos Access Manager (CAM).

For sample XML, see credentialPrompt or credentials.
noResult

Specifies that no result is returned due to an error in response to the logonRequest command. This element is returned when the responseCode element contains the value ERROR.

Content model
Empty element.

Parent elements
result

responseCode

Specifies whether an error occurred during the request. This element contains the response code to the logonRequest and logoffRequest commands.

Content model
Content type is string.

The possible values of this element are restricted to the following.

ERROR
There was an error in the request.

NO_ERROR
There was no error in the request.

Parent elements
logoffResponse, logonResponse

responseMessage

Contains the response message returned for the logonRequest or the logoffRequest commands.

Content model
Content type is string.

Parent elements
logoffResponse, logonResponse
result
Contains the result for the logonRequest command.

Content model
credentialPrompt or accountInfo or noResult or extension

Parent elements
logonResponse

value
Specifies the value for the enumeration.

Content model
actualValue or missingValue or extension

Parent elements
credentialElements

value
Container for a missing or actual value in the credential piece.

Content model
Content type is string.

Parent elements
enumeration

valueType
Specifies the type of UI control to prompt for the missing value, for example: text, textnoecho, or picklist. This type is determined by Cognos Access Manager (CAM).

Content model
Content type is string.

Parent elements
missingValue
Chapter 15. RDS schema reference

For each RDS specification element, this section provides

- the name and description of the element
- information about attributes that apply to the element, including each attribute’s name, description, optionality, legal values, and default value, if applicable
- content model information, consisting of a list of valid child elements presented as an element model group
- a list of valid parent elements

**autoSubmit**

Specifies whether to automatically submit the prompt value to the server if the selected value changes. When true, the client should immediately submit the selected value to the server when the value changes and the reprompt element should be set to true.

**Content model**

Content type is boolean.

**Parent elements**

PDateTimeBox, PListBox, PSearchAndSelect, PTextBox, PTreePrompt

**BackRequest**

A secondary request to return to the previous prompt page.

**Content model**

session then extension (optional)

**burstId**

Specifies the burstID. For more information on burstID, see the IBM Cognos Software Development Kit Developer Guide.

**Content model**

Content type is string.

**Parent elements**

burstInfo
burstInfo

Specifies the burst information required to retrieve a bursted version of a report. To identify the burst, you must specify the burstKey or the burstId.

Content model

burstKey (optional) then burstId (optional) then extension (optional)

Parent elements

GetOutputFormatRequest, GetPagedReportDataRequest, GetReportDataRequest

burstKey

Specifies the burstKey.

For more information on burstKey, see the IBM Cognos Software Development Kit Developer Guide.

Content model

Content type is string.

Parent elements

burstInfo

calendarType

Specifies the type of calendar used for the prompt.

Content model

Content type is string.

The possible values of this element are restricted to the following.

GREGORIAN

The calendar type is the standard international calendar.

IMPERIAL

The calendar type is the Japanese Imperial calendar.

Parent elements

PDateTimeBox

canExpand

Specifies whether the tree prompt can be expanded.

Content model

Content type is boolean.
**canFinish**

Indicates whether the prompt page can be the last prompt page. When `true`, the user can click the **Finish** button and run the report.

**Content model**

Content type is boolean.

**caseInsensitive**

Specifies whether case is considered when processing prompt values. When `true`, the search is not case sensitive. When `false`, the search is case sensitive. The default value is `true`.

**Content model**

Content type is boolean.

**Parent elements**

- `prompts`

**CCSAuthenticationFault**

Contains a fault that occurs when authentication is required before the request can be completed.

**Content model**

- `message` then `extension (optional)`

**CCSGeneralFault**

Contains a fault that occurs when an error prevents the request from completing.

**Content model**

- `message` then `trace (optional)`

**CCSPromptFault**

Contains a fault that occurs when prompt answers are required before the request can complete.
**columnName**

Specifies the display name of the column that contains the prompt values.

**Content model**

Content type is string.

**Parent elements**

PDateTimeBox, PListBox, PSearchAndSelect, PTextBox, PTreePrompt

**connection**

Defines the connection to the data source.

**Content model**

Content type is string.

**Parent elements**

PDataSource

**contextID**

Specifies the context information related to the object on which the drill is executed.

The value in this element matches the value in the ctx element in the layout data document.

**Content model**

Content type is string.

**Parent elements**

DrillRequest

**conversationID**

Specifies the storeID of the conversation object stored in the Content Manager.

For more information on storeID, see the *IBM Cognos Software Development Kit Developer Guide*.

**Content model**

Content type is string.

**Parent elements**

GetPromptDescriptionRequest, GetPromptDescriptionResponse, GetTreePromptNodeRequest, session
**direction**

Specifies if the drill is up or down.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**UP**

The drill direction is up, to a higher level of granularity.

**DOWN**

The drill direction is down, to a lower level of granularity.

**Parent elements**

DrillRequest

---

**displayMilliseconds**

Specifies whether the prompt control displays milliseconds.

**Content model**

Content type is boolean.

**Parent elements**

PDateTimeBox

---

**displaySeconds**

Specifies whether the prompt control displays seconds.

**Content model**

Content type is boolean.

**Parent elements**

PDateTimeBox

---

**displayValue**

Specifies the display value that appears in the prompt control.

**Content model**

Content type is string.
**DrillRequest**

Makes a secondary request to drill into a resource.

**Attributes**

**Adding Other Attributes**

`anyAttribute` indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

```
session then contextID then direction
```

**end**

Specifies the end value of the range.

**Attributes**

**Adding Other Attributes**

`anyAttribute` indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

```
inclusive then useValue then displayValue (optional)
```

**Parent elements**

`RangePValue`

**excludePage**

Specifies that when the filterType element is being used to select a report part by name, report pages are not considered. The default value is `false`.

Although report parts in a report must have unique names, it is possible for a report page to have the same name as a report part, such as a list. Setting this option to `true` will ensure that a report part is selected rather than a report page with the same name.

**Content model**

Content type is boolean.

**Parent elements**

`GetPagedReportDataRequest`, `GetReportDataRequest`
extension

Placeholder for future extensions.

Content model

Content type is anyType.

Parent elements


filters

Defines filters applied to the layout data document. Filters allow users to select report parts to return, instead of the complete report.

See “Accessing parts of a report output” on page 34 for more information.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

filterValue then filterType then extension (optional)

Parent elements

GetOutputFormatRequest, GetPagedReportDataRequest, GetReportDataRequest

filterType

Specifies the type of filter applied.

Content model

Content type is string.

The possible values of this element are restricted to the following.

OBJECT_ID

The resource is filtered on a named object.
XPATH

The resource is filtered on a XPath expression.

Parent elements

filters

filterValue

Specifies the value used in the filter.

Content model

Content type is string.

Parent elements

filters

FinishRequest

A secondary request to skip subsequent prompt pages. You can use this request if subsequent prompts have default values.

Content model

session then promptValues (any number) then searchValue (optional) then extension (optional)

firstDate

Specifies the first date that can be selected in the date and time prompt control.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

Content type is date.

Parent elements

PDateTimeBox

FirstRequest

A secondary request to retrieve the first page of report output.
### Content model

session then extension *(optional)*

---

### format

Specifies the format of the retrieved report.

See “Output formats” on page 9 for more information.

- **layoutDataXML**
  
  Output is XML based on the LDX schema. See Layout Data Schema Reference.

- **HTML**
  
  Output is a complete HTML file with style information in an inline stylesheet.

- **HTMLFragment**
  
  Output is a fragment of an HTML file with inline style information.

- **JSON**
  
  Output is in JavaScript Object Notation format.

- **Simple**
  
  Output is in Simple format. See Using the Simple Format.

- **Image**
  
  Output is a portable network graphic (.png) image of the report output.

- **DataSet**
  
  Output is XML in the DataSet format. See Using the DataSet format.

- **DataSetAtom**
  
  Output is XML in the Atom version of the DataSet format.

- **DataSetJSON**
  
  Output is XML in the JSON version of the DataSet format.

---

### Content model

Content type is string.

### Parent elements

GetPagedReportDataRequest, GetReportDataRequest

---

### FormatOutput

Contains the output from the getPagedReportData and getReportData commands when the format option is included in the request.

---

### Content model

Content type is string.

### Parent elements

output

---

### ForwardRequest

A secondary request to obtain the next prompt page
**Content model**

`session` then `promptValues (any number)` then `searchValue (optional)` then `extension (optional)`

---

**GetCognosURLRequest**

Retrieves a URL to display the resource in IBM Cognos Viewer.

**Content model**

`sourceID` then `sourceType` then `extension (optional)`

---

**GetCognosURLResponse**

Contains the response to the `GetCognosURLRequest` command.

For example:

```xml
<rds:GetCognosURLResponse xmlns:rds="http://developer.cognos.com/schemas/rds/types/2">
  <rds:url>
    http://localhost:80/install/bi/v1/disp?b_action=cognosViewer&ui.action=run &ui.object=storeID("iA230F89549548F8F1C87D8625835")
  </rds:url>
</rds:GetCognosURLResponse>
```

**Content model**

`url` then `extension (optional)`

---

**GetOutputFormatRequest**

Requests the information needed to run a report and retrieve the output in a specified format.

See “Running reports and retrieving output in IBM Cognos Viewer formats” on page 35 for more information.

**Content model**

`sourceID` then `sourceType` then `outputFormatName` then `filters (any number)` then `version (optional)` then `burstInfo (optional)` then `saveOutput (optional)` then `promptValues (any number)` then `extension (optional)`

---

**GetOutputFormatResponse**

Contains the information necessary to run a report and the retrieve the report output in a specified format.

**Content model**

`outputFormatURL` then `xmlData (optional)` then `extension (optional)`
GetOutputFormatsRequest

Requests a list of supported formats for a report.

See “Running reports and retrieving output in IBM Cognos Viewer formats” on page 35 for more information.

**Content model**

```
sourceID then sourceType then extension (optional)
```

GetOutputFormatsResponse

Contains the list of supported formats for a specific report.

**Content model**

```
supportedFormats then extension (optional)
```

GetOutputRequest

Polls the server for a response for asynchronous methods.

**Content model**

```
session then extension (optional)
```

GetOutputResponse

Contains the response to asynchronous generic commands.

See “Running Mashup Service methods” on page 24 for more information.

**Attributes**

**Adding Other Attributes**

anyAttribute indicates that any attribute within the specified namespace(s) is permitted.

Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

```
session then output (optional) then extension (optional)
```

GetPagedReportDataRequest

Runs a report interactively (if supported), retrieving the output page by page.

**Content model**

```
sourceID then sourceType then rowLimit (optional) then version (optional) then burstInfo (optional) then excludePage (optional) then filters (any number) then format (optional) then saveOutput (optional) then includeLayout (optional) then promptValues (any number) then extension (optional) then useRelativeURL (optional) then viewerStateData (optional) then inlineStyles (optional)
```
GetPromptAnswersRequest

Retrieves the prompt answers associated with the prompt ID.
This command is used after the GetPromptPageRequest command.

Content model

promptID then extension (optional)

GetPromptAnswersResponse

Contains the response to the GetPromptAnswersRequest command.

Content model

promptValues (any number) then extension (optional)

GetPromptDescriptionRequest

Retrieves a description of the prompts using the getPromptDescription command.
The getPromptDescription is deprecated and will be removed in a future version of this product. Use the getReportPrompts request instead.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

sourceID then sourceType then conversationID (optional) then reprompt (optional) then promptValues (any number) then searchPValue (optional) then extension (optional)

GetPromptDescriptionResponse

Contains the response to the getPromptDescription command.

For example:

```xml
<rds:GetPromptDescriptionResponse
  xmlns:rds="http://developer.cognos.com/schemas/rds/types/2">
  <rds:prompts>
    <canFinish>true</canFinish>
    <hasNextPage>false</hasNextPage>
    <rds:item>
      <rds:PSearchAndSelect>
        <rds:name>Product name</rds:name>
        <rds:multiSelect>true</rds:multiSelect>
        <rds:required>true</rds:required>
        <rds:id>_P1728309400</rds:id>
        <rds:parameter>Product name</rds:parameter>
        <rds:matchAll>false</rds:matchAll>
        <rds:matchAnywhere>false</rds:matchAnywhere>
        <rds:columnName>Product name</rds:columnName>
      </rds:PSearchAndSelect>
    </rds:item>
  </rds:prompts>
</rds:GetPromptDescriptionResponse>
```
The `getPromptDescription` is deprecated and will be removed in a future version of this product. Use the `getReportPrompts` instead.

**Content model**

- `prompts` then `conversationID` then `extension (optional)`

---

**GetPromptPageRequest**

Retrieves a URL from the IBM Cognos Analytics server to fulfill prompt answers, as well as a `promptID` to use in the `getPromptAnswers` command.

**Content model**

- `sourceID` then `sourceType` then `promptValues (any number)` then `extension (optional)` then
  - `useRelativeURL (optional)`

---

**GetPromptPageResponse**

Contains the response to the `getPromptPage` command.

For example:

```xml
    <rds:promptID>iC2FA4D960B9E4D3DA41481DC12697691</rds:promptID>
        &m=ccs/ccs_prompt.xts
        &ui.object=storeID("iFEEA9784505F408FA735A83979994B5")
        &promptID=iC2FA4D960B9E4D3DA41481DC12697691</rds:url>
</rds:GetPromptPageResponse>
```

**Content model**

- `promptID` then `url` then `extension`

---

**GetReportDataRequest**

Retrieves the report content using the `getReportData` command.

**Content model**

- `sourceID` then `sourceType` then `rowLimit (optional)` then `version (optional)` then `burstInfo (optional)` then
  - `excludePage (optional)` then `filters (any number)` then `format (optional)` then `includeLayout (optional)` then
    - `saveOutput (optional)` then `includePageBreaks (optional)` then `promptValues (any number)` then `extension (optional)` then
      - `useRelativeURL (optional)` then `viewerStateData (optional)` then `inlineStyles (optional)`

---

**GetReportPromptsRequest**

Retrieves a description of the prompts using the `getReportPrompts` command.
GetTreePromptNodeRequest

Retrieves the next level of children for a specified node.

This command is used with the GetPromptDescriptionRequest command for PTreePrompt requests. The nodeValue child element specifies the node.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

conversationID (optional) then session then nodeValue then extension (optional)

GetTreePromptNodeResponse

Contains the response to the GetTreePromptNodeRequest request.

Content model

treePromptNode then extension (optional)

hasNextPage

Specifies that the prompt control has a Next page.

Content model

Content type is boolean.

Parent elements

prompts

id

Specifies an identifier for the search and select prompt control. This identifier is used to perform a search for prompt values.

Content model

Content type is string.

Parent elements

PSearchAndSelect, searchPValue
includeLayout

If true, include the following layout elements in the output: blk, tbl, and sngl. For getReportData requests, the default is false. For getPagedReportData and getReportPrompts requests, the default is true.

Content model
Content type is boolean.

Parent elements
GetPagedReportDataRequest, GetReportDataRequest, GetReportPromptsRequest

includePageBreaks

Specifies whether to retrieve the physical pages of output, or to retrieve the conceptual pages from the original resource.

When true, the document returned contains each physical page of output. When false, the document returned contains each type of page from the original resource. See “Reports with multiple pages” on page 57 for more information.

The default value is false.

Content model
Content type is boolean.

Parent elements
GetReportDataRequest

inclusive

Specifies that the value range for the prompt is inclusive.

Content model
Content type is boolean.

Parent elements
end, RangePValue, SimplePValue, start

inlineStyles

Specifies where style information in HTMLFragment output is located.

When true, the style information is included in style attributes in the HTML elements. This is the default value.

When false, the style information is included in style elements preceding the HTML elements.
Content model
Content type is boolean.

Parent elements
GetPagedReportDataRequest, GetReportDataRequest

**item**
Contains a prompt value.

Attributes
Adding Other Attributes
anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model
SimplePValue or RangePValue or sval or rval or extension

Parent elements
values

**item**
Contains a prompt value.

Content model
PListBox or PTextBox or PTreePrompt or PDateTimeBox or PDataSource or PSearchAndSelect or extension (optional)

Parent elements
prompts

**lastDate**
Specifies the last date value that can be selected in the prompt control.

Attributes
Adding Other Attributes
anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model
Content type is date.
**Parent elements**
PDateTimeBox

**LastRequest**
A secondary request to retrieve the last page of report output.

**Content model**
session then extension *(optional)*

**LDXOutput**
Contains the report output in LayoutDataXML format.

**Content model**
document or filterResultSet

**Parent elements**
output

**matchAll**
Specifies whether the search results returned match all of the search words entered.
When true, the results returned match all of the search words entered. When `matchAnywhere` is also true, then the search can contain all the keywords in any order.
When false, the results returned match any of the search words entered.

**Content model**
Content type is boolean.

**Parent elements**
PSearchAndSelect, searchPValue

**matchAnywhere**
Specifies whether the search results contain or start with the keywords.
When true, the results returned contain the key words. When false, the search results returned start with the keywords.

**Content model**
Content type is boolean.

**Parent elements**
PSearchAndSelect, searchPValue
message
Contains a descriptive message about the error that occurred.

Content model
Content type is string.

Parent elements
CCSAuthenticationFault, CCSGeneralFault, CCSPromptFault

mtchAll
Specifies whether the search results returned match all of the search words entered.
When true, the results returned match all of the search words entered. When mtchAny is also true, then the search can contain all the keywords in any order.
When false, the results returned match any of the search words entered.

Content model
Content type is boolean.

Parent elements
searchValue

mtchAny
Specifies whether the search results contain or start with the keywords.
When true, the results returned contain the key words. When false, the search results returned start with the keywords.

Content model
Content type is boolean.

Parent elements
searchValue

multiSelect
Specifies whether the prompt is a multi-value prompt.
When true, this is a multi-value prompt.

Content model
Content type is boolean.
Parent elements
PDateTimeBox, PListBox, PSearchAndSelect, PTextBox, PTreePrompt

**name**

Specifies the name of the prompt parameter or value.

**Content model**

Content type is string.

Parent elements
connection, nodeValue, PDataSource, PDateTimeBox, PListBox, promptValues, PSearchAndSelect, PTextBox, PTreePrompt, signon

**NextRequest**

A secondary request to retrieve the next page of report output.

**Content model**

session then extension (optional)

**nocase**

Specifies whether the search is case sensitive or case insensitive.

**Content model**

Content type is boolean.

Parent elements
searchValue

**nodeValue**

Specifies the prompt values to retrieve from the children of the node.

**Attributes**

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

name then values
**numericOnly**

Specifies whether the prompt requires numeric values.

**Content model**

Content type is boolean.

**Parent elements**

PTextBox

**options**

Specifies the list of possible values in the prompt control.

**Content model**

useValue then displayValue *(optional)*

**Parent elements**

PListBox, PSearchAndSelect, selections, selectionsAncestry, treeNode, treePromptNode

**output**

Contains the output from an asynchronous method.

**Content model**

LDXOutput or PromptAnswerOutput or FormatOutput or extension *(optional)*

**Parent elements**

GetOutputResponse

**outputFormatName**

The name of a format supported by the specified report.

The possible values for the output formats are described in the outputFormatEnum enumeration set documented in the *IBM Cognos Software Development Kit Developer Guide*

**Content model**

Content type is string.

**Parent elements**

GetOutputFormatRequest, supportedFormats
outputFormatURL
Contains a URL that, when submitted to the IBM Cognos Analytics server, runs a report and retrieves the output in a specified format.

Content model
Content type is string.

Parent elements
GetOutputFormatResponse

parameter
Specifies the name of the parameter associated with the prompt.

Content model
Content type is string.

Parent elements
PSearchAndSelect

parameterName
Specifies the name of the parameter associated with the search.

Content model
Content type is string.

Parent elements
searchPValue

PDataSource
Represents a data source signon prompt.

Content model
name then connection then signon (any number)

Parent elements
item

PDateTimeBox
Represents any of the date and time prompt controls, including date, date and time, time, and interval. This prompt control is usually rendered with a calendar control.
Content model
name then multiSelect then range then required then valueType then autoSubmit then calendarType (optional) then displaySeconds (optional) then displayMilliseconds (optional) then firstDate (optional) then lastDate (optional) then columnName (optional) then selections (optional) then extension (optional)

Parent elements
item

PListBox
Represents a value prompt control, usually represented as either a list box for selecting multiple values or as a drop-down list for selecting a single value.

Content model
name then multiSelect then range then required then autoSubmit then columnName (optional) then selections then options (any number) then extension (optional)

Parent elements
item

pname
Specifies the report parameter to search on.

Content model
Content type is string.

Parent elements
searchValue

PreviousRequest
A secondary request to retrieve the previous page of report output.

Content model
session then extension (optional)

PromptAnswerOutput
Contains the prompt answers submitted by a user on an IBM Cognos prompt page.
See “Using the IBM Cognos prompt page interface” on page 38 for more information.

Content model
promptValues (any number) then extension (optional)
**Parent elements**

output

**promptAnswers**

Reserved.

**Content model**

promptValues *(any number)* then extension *(optional)*

**promptID**

Specifies an identifier where the prompt answers will be stored.
See “Using the IBM Cognos prompt page interface” on page 38 for more information.

**Content model**

Content type is string.

**Parent elements**

CCSPromptFault, GetPromptAnswersRequest, GetPromptPageResponse

**prompts**

Contains the retrieved prompt control descriptions.

**Attributes**

**Adding Other Attributes**

anyAttribute indicates that any attribute within the specified namespace(s) is permitted.
Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

canFinish then hasNextPage then item *(any number)* then promptValues *(optional)*

**Parent elements**

GetPromptDescriptionResponse

**promptValues**

Represents one or more prompt values.

**Attributes**

**Adding Other Attributes**

anyAttribute indicates that any attribute within the specified namespace(s) is permitted.
Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.
**Content model**

name then values

**Parent elements**

FinishRequest, ForwardRequest, GetOutputFormatRequest, GetPagedReportDataRequest, GetPromtAnswersResponse, GetPromptDescriptionRequest, GetPromptPageRequest, GetReportDataRequest, PromptAnswerOutput, promptAnswers, prompts, RepromptRequest

---

**PSearchAndSelect**

Represents a search and select prompt control.

This type of prompt retrieves values based on search criteria that a user specifies.

**Content model**

name then multiSelect then range then required then id then parameter then caseInsensitive then matchAll then matchAnywhere then autoSubmit then columnName *(optional)* then selections *(optional)* then options *(any number)* then extension *(optional)*

**Parent elements**

item

---

**PTextBox**

Represents a text box prompt control.

This type of prompt retrieves data based on a value that a user types.

**Content model**

name then multiSelect then range then required then numericOnly then autoSubmit then columnName *(optional)* then extension *(optional)*

**Parent elements**

item

---

**PTreePrompt**

Represents a tree prompt control.

This type of prompt retrieves data based on values that users select from a list. Values are organized hierarchically.

**Content model**

name then multiSelect then required then treeUI then canExpand then autoSubmit then columnName *(optional)* then selections *(optional)* then selectionsAncestry *(optional)* then treeNode then extension *(optional)*

**Parent elements**

item
range

Specifies whether this is a range prompt.

When `true`, this is a range prompt control. The client will render two text box or two list box UI elements for this type of prompt control.

**Content model**

Content type is boolean.

**Parent elements**

`PDateTimeBox`, `PListBox`, `PSearchAndSelect`, `PTextBox`

**RangePValue**

Specifies a range prompt value. The range may include a start and/or an end value, depending on the type of range prompt.

**Attributes**

**Adding Other Attributes**

*anyAttribute* indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and `processContents` parameters, respectively.

**Content model**

*inclusive* then start *(optional)* then end *(optional)* then extension *(optional)*

**Parent elements**

`item`

**ReleaseRequest**

Releases a session so that no further requests can be made.

This request cancels any currently running requests, freeing resources associated with the request. If you do not make this request, the resources remain unavailable until the session times out.

**Attributes**

**Adding Other Attributes**

*anyAttribute* indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and `processContents` parameters, respectively.

**Content model**

*session* then extension *(optional)*
**ReleaseResponse**

Contains the response to the `ReleaseRequest` command.

**Attributes**

**Adding Other Attributes**

`anyAttribute` indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and `processContents` parameters, respectively.

**Content model**

`extension (optional)`

**reprompt**

Specifies whether the user is prompted again instead of going to the next page.

When `true`, the user is prompted again. Set this element to `true` when the `autoSubmit` element is `true`.

**Content model**

Content type is boolean.

**Parent elements**

GetPromptDescriptionRequest

**RepromptRequest**

Use this secondary request on a prompt page that has multiple prompts to submit one or more prompt values and have the current prompt page refreshed, instead of moving to the next prompt page. Use this request if the page contained cascading prompts and you needed to submit a prompt response before receiving the subsequent prompt request.

**Content model**

`session then promptValues (any number) then searchValue (optional) then extension (optional)`

**required**

Specifies whether a value must be supplied for this prompt to run the report.

When `true`, a value must be specified.

**Content model**

Content type is boolean.

**Parent elements**

PDateTimeBox , PListBox , PSearchAndSelect , PTextBox , PTreePrompt
**rowLimit**

Specifies the maximum number of rows to retrieve.
The default value is 0, which returns all rows.

**Content model**
Content type is int.

**Parent elements**
GetPagedReportDataRequest, GetReportDataRequest

**saveOutput**

Specifies that a copy of the report output is to be saved in the Content Store.
The default value is false.

**Content model**
Content type is boolean.

**Parent elements**
GetOutputFormatRequest, GetPagedReportDataRequest, GetReportDataRequest

**searchPath**

Specifies a search path to the version object.

**Content model**
Content type is string.

**Parent elements**
connection, signon, version

**searchPValue**

Specifies the value entered in the search prompt control.

**Content model**
value then parameterName then id then caseInsensitive (optional) then matchAll (optional) then matchAnywhere (optional) then extension (optional)

**Parent elements**
GetPromptDescriptionRequest
**searchValue**

Specifies a Search & Select prompt value.

**Content model**

srchval then swsID then pname then nocase *(optional)* then mtchAny *(optional)* then mtchAll *(optional)* then extension *(optional)*

**Parent elements**

FinishRequest, ForwardRequest, RepromptRequest

**selected**

Specifies the selected signon or connection.

**Content model**

Content type is boolean.

**Parent elements**

connection, signon

**selections**

Contains a list of default prompt answers that user has saved.

**Content model**

options *(any number)*

**Parent elements**

PDateTimeBox, PListBox, PSearchAndSelect, PTreePrompt

**selectionsAncestry**

Defines the ancestry of the saved prompt answers defined in the `selections` element.

**Content model**

options *(any number)*

**Parent elements**

PTreePrompt

**session**

Specifies the session identifier for asynchronous and secondary requests.

See “Running Mashup Service methods” on page 24 for more information.
Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

calendarID then status then extension (optional)

Parent elements

BackRequest, DrillRequest, FinishRequest, FirstRequest, ForwardRequest, GetOutputRequest, GetOutputResponse, GetTreePromptNodeRequest, LastRequest, NextRequest, PreviousRequest, ReleaseRequest, RepromptRequest

signon

Represents the signon to the data source.

Content model

name (optional) then searchPath (optional) then selected

Parent elements

PDataSource

SimplePValue

Specifies a simple prompt value.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

inclusive then useValue then displayValue (optional)

Parent elements

item

sourceID

Specifies the identifier of the resource.

Content model

Content type is string.
**sourceType**

Specifies the type of resource.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**metrics**

Reserved.

**conversationID**

The source is a conversation resource that is stored in content manager for async and secondary requests.

**path**

The source is a resource that is referenced by its simplified path.

**report**

The source is a resource that is referenced by its storeID.

**searchPath**

The source is a resource that is referenced by its search path.

---

**srchval**

Specifies the keywords to search on.

**Content model**

Content type is string.

**Parent elements**

GetCognosURLRequest, GetOutputFormatRequest, GetOutputFormatsRequest, GetPagedReportDataRequest, GetPromptDescriptionRequest, GetPromptPageRequest, GetReportDataRequest, GetReportPromptsRequest

---

**start**

Specifies the start value for a range prompt.
Attributes

Adding Other Attributes
anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model
inclusive then useValue then displayValue (optional)

Parent elements
RangePValue

status
Specifies the async status.

Content model
Content type is string.
The possible values of this element are restricted to the following.
working
  The async status is working.
complete
  The async status is complete. The command output can now be retrieved in the output element.

Parent elements
session

supportedFormats
Contains the list of output formats supported by the specified report.

Content model
outputFormatName (any number) then extension (optional)

Parent elements
GetOutputFormatsResponse

swsID
Specifies the ID of the prompt.

Content model
Content type is string.
Parent elements
searchValue

trace
Contains additional trace data, if available.

Content model
Content type is string.

Parent elements
CCSGeneralFault

treeNode
Represents a root node in a prompt control.

Content model
options (any number) then extension (optional)

Parent elements
PTreePrompt

treePromptNode
Contains the children of the requested node.

Content model
options (any number) then extension (optional)

Parent elements
GetTreePromptNodeResponse

treeUI
Specifies the kind of tree used for the tree prompt control.

Content model
Content type is string.

Parent elements
PTreePrompt
**url**

Specifies the URL.

**Content model**

Content type is string.

**Parent elements**

CCSPromptFault, GetCognosURLResponse, GetPromptPageResponse

**useRelativeURL**

When true, the URL returned from the IBM Cognos Analytics server will be based on the external gateway URI and not on the internal dispatcher URI.

**Content model**

Content type is boolean.

**Parent elements**

GetPagedReportDataRequest, GetPromptPageRequest, GetReportDataRequest

**useValue**

Specifies the value used for the prompt control.

**Content model**

Content type is string.

**Parent elements**

end, options, SimplePValue, start

**value**

Specifies the keywords to search on.

**Content model**

Content type is string.

**Parent elements**

searchPValue

**values**

Specifies the selected prompt value(s).
Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model

item (any number)

Parent elements

nodeValue, promptValues

valueType

Specifies the type of prompt.

Content model

Content type is string.

The possible values of this element are restricted to the following.

DATE

The prompt is a date prompt.

This type of prompt retrieves data based on a date that the user selects.

TIME

The prompt is a time prompt.

This type of prompt retrieves data based on a time that the user selects.

DATETIME

The prompt is a date and time prompt.

This type of prompt retrieves data based on a date and time that the user selects.

INTERVAL

The prompt is an interval prompt.

This type of prompt retrieves data based on a time interval that the user specifies.

Parent elements

PDateTimeBox

version

Specifies the version of the report requested.

Attributes

Adding Other Attributes

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.
Content model

versionType then versionName (optional) then searchPath (optional) then extension (optional)

Parent elements
GetOutputFormatRequest, GetPagedReportDataRequest, GetReportDataRequest

versionName

Specifies the reportVersion of the report being run. For example, for the report stored in Content Manager that has the following search path

```xml
/content/folder[@name='Samples']/folder[@name='Models']/
/package[@name='GO Data Warehouse (analysis)']/folder[@name='Reporting Report Samples']/
/report[@name='Customer Returns and Satisfaction']/
/reportVersion[@name='2008-10-08T15:33:46.781Z']
```

the versionName is 2008-10-08T15:33:46.781Z

Content model

Content type is string.

Parent elements
version

versionType

Specifies the version type.

Content model

Content type is string.

The possible values of this element are restricted to the following.

NEW

The report is run to obtain content based on most recent data, instead of a stored version.

LATEST

Retrieves the latest stored version. If no stored version exists, the report is run and retrieved.

VERSION_NAME

Retrieve stored version with the specified name.

NO_DATA

The report is run without retrieving data. Artificial data is used instead of actual data from the data source.

LIMITED_DATA

The report is run with limited data based on design mode filters defined in Framework Manager.

Parent elements
version
**viewerStateData**

Reserved.

**Content model**
Content type is string.

**Parent elements**
GetPagedReportDataRequest, GetReportDataRequest

**xmlData**

Contains data that must be submitted as form data in the xmlData REST option when retrieving report output.

For example, if the report is being run with prompt values, this element will contain a string giving prompt values in the form of a promptAnswers element. See Running a report with prompts for an example.

**Content model**
Content type is string.

**Parent elements**
GetOutputFormatResponse
Chapter 16. Layout Data (LDX) schema reference

For each layout data schema element, this section provides

- the name and description of the element
- information about attributes that apply to the element, including each attribute's name, description, optionality, legal values, and default value, if applicable
- content model information, consisting of a list of valid child elements presented as an element model group
- a list of valid parent elements

**actionURL**

Reserved.

**Content model**

Empty element.

**Parent elements**

drillAction

**Alpha**

Represents the alpha value of the color which is a value between 0.0 (transparent) and 1.0 (opaque). The default value is 1.0.

**Content model**

Content type is double.

**Parent elements**

bgColor, color, fgColor

**alternateText**

If available, the alternate text to display for this image

**Content model**

Content type is string.

**Parent elements**

area, cht, img

**ancestors**

Specifies a list of ancestors of the currently selected node.
Content model
sval (any number) or rval (any number) or extension (optional)

Parent elements
p_tree

annURL
Reserved.

Content model
Content type is string.

Parent elements
blk, bmrk, cell, cht, colTitle, corner, ctab, hlink, html, img, lcr, lst, name, p_btn, p_date, p_dsrc, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value, rept, reptbl, rtxt, sngl, table, tbl, tcell, toc, txt, widget

area
Defines an area in a chart. The coord child element defines the coordinates of the area. The area can be used to define drill throughs and tooltips on a chart.

Content model
type then coord (one or more) then alternateText (optional) then drills (optional) then drillAction (any number) then label (optional) then ctx (optional) then member (any number) then measure (any number)

Parent elements
regions

attachment
Specifies whether the background image scrolls with the page. The default value is SCROLL.

Content model
Content type is string.

The possible values of this element are restricted to the following.

FIXED
The background image does not scroll with the page.

SCROLL
The background image scrolls with the page.

INHERIT
The scrolling behavior is inherited from the parent container.
**Parent elements**
bgImageProperties

---

**auto**
Specifies whether the application should submit the prompt page automatically, as soon as a value is changed.

For more information, see **Auto-Submit** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**
Content type is boolean.

**Parent elements**
p_value

---

**autocascade**
This is true if the prompt satisfies the following conditions:

- The prompt is the source of a cascading prompt and the value of auto is true.
- The cascading prompt appears on the same page as this prompt.

In this case, when a prompt value is changed, the prompt should be submitted, and the values of the cascading prompt populated based on the value chosen in the source prompt.

See “Collecting cascading prompts from a single prompt page” on page 46 for an example of the use of this element.

**Content model**
Content type is boolean.

**Parent elements**
p_value

---

**bgColor**
Defines a background color.

**Content model**
Red then Green then Blue then Alpha (optional) then extension (optional)

**Parent elements**
styleGroup

---

**bgImageProperties**
Specifies how the background image associated with this style should be displayed.
Content model
position (optional) then attachment (optional) then repeat (optional) then extension (optional)

Parent elements
styleGroup

bgImageURL

Specifies a URL that points to a background image.

Content model
Content type is string.

Parent elements
styleGroup

biDirectional

Specifies that the formatting of the text is bi-directional.

Attributes

Adding Other Attributes
anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

Content model
Content type is string.

The possible values of this element are restricted to the following.

NORMAL
The element does not open an additional level of embedding with respect to the bidirectional algorithm.

EMBED
If the element is inline-level, this value opens an additional level of embedding with respect to the bidirectional algorithm. The direction of this embedding level is given by the direction property.

OVERRIDE
For inline-level elements, this creates an override. For block-level, table-cell, table-caption, or inline-block elements this creates an override for inline-level descendants not within another block-level, table-cell, table-caption, or inline-block element.

Parent elements
textStyle
blk

Specifies a container into which you can insert other objects.

For more information, see block in the IBM Cognos Analytics Reporting User Guide.

Content model

id (optional) then ref (optional) then style (any number) then item (any number) then annURL (optional) then cname (optional) then extension (optional)

Parent elements

item, reportElement

Blue

Specifies the blue RGB color value.

Content model

Content type is int.

Parent elements

bgColor, color, fgColor

bmrk

Defines a bookmark, or target point, of a link.

Content model

id (optional) then ref (optional) then style (any number) then label then annURL (optional) then extension (optional)

Parent elements

item, reportElement

body

Contains the contents of a page body.

Content model

style (any number) then item (any number) then extension (optional)

Parent elements

page
**bold**

Specifies that the font style is bold.

**Content model**

Content type is boolean.

**Parent elements**

fontStyle

---

**booklet**

Specifies a report booklet. A report booklet is a report that references other reports.

**Content model**

id then ref then reportPath then pages (any number) then extension (optional)

**Parent elements**

pages

---

**bookmark**

Specifies the bookmark that is the target point of the drill through.

**Content model**

Content type is string.

**Parent elements**

drill

---

**bookmark**

Specifies the bookmark element that is the target point of the entry in the table of contents.

**Content model**

Content type is string.

**Parent elements**

entry

---

**border**

Defines the border of a box.
Content model

top (optional) then left (optional) then right (optional) then bottom (optional)

Parent elements

boxStyle

bottom

Defines size of margin or padding on the bottom of a box.

Content model

val then units then extension (optional)

Parent elements

margin, padding

bottom

Defines color, line style and width of the bottom of a border.

Content model

color (optional) then lineStyle (optional) then width (optional)

Parent elements

border

boxStyle

Defines box styles, including height, width, margin, padding, and border.

Content model

height (optional) then width (optional) then margin (optional) then padding (optional) then border (optional) then extension (optional)

Parent elements

styleGroup

bType

Specifies the type of prompt button.

Content model

Content type is string.

The possible values of this element are restricted to the following.
FORWARD
A forward button.

BACK
A back button.

REPROMPUT
A reprompt button.

FINISH
A finish button.

CANCEL
A cancel button.

Parent elements
p_btn

canBack
Specifies whether the Back button on a prompt page should be enabled.

Content model
Content type is boolean.

Parent elements
page

canExpand
Specifies whether the prompt tree control can be expanded.

Content model
Content type is boolean.

Parent elements
p_tree

canFinish
Specifies whether the Finish button on a prompt page should be enabled.

Content model
Content type is boolean.

Parent elements
page
<table>
<thead>
<tr>
<th>Tag</th>
<th>Description</th>
<th>Content Model</th>
<th>Parent Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>canNext</td>
<td>Specifies whether the <strong>Next</strong> button on a prompt page should be enabled.</td>
<td>Content type is boolean.</td>
<td>page</td>
</tr>
<tr>
<td>cascadeon</td>
<td>Specifies the <code>pname</code> of the parameter whose value is used to filter the values displayed in this control. For more information, see <a href="#">Cascade Source</a> in the IBM Cognos Analytics Reporting User Guide.</td>
<td>Content type is string.</td>
<td>p_srch, p_tree, p_value</td>
</tr>
<tr>
<td>cell</td>
<td>Defines a cell in a row of data.</td>
<td></td>
<td>item, reportElement, row</td>
</tr>
<tr>
<td>cgsData</td>
<td>Contains the data used to render the chart.</td>
<td></td>
<td>cgsWidget</td>
</tr>
</tbody>
</table>

[175] Layout Data (LDX) schema reference
cgsDataInfo
Reserved.

Content model
any (any number)

Parent elements
cgsWidget
cgsPropCanvas
Reserved.

Content model
any (any number)

Parent elements
details
cgsProperties
Reserved.

Content model
any (any number)

Parent elements
cgsWidget
cgsWidget
Defines chart information used to render the chart.

Content model
cgsData (optional) then cgsDataInfo (optional) then cgsProperties (optional) then extension (optional)

Parent elements
details

child
Defines the children of the parent tree node

Content model
use then disp (optional) then nullUse (optional) then nullDisp (optional)
Parent elements
node

choicesDeselectAllText

Specifies the text for the link that follows the results box that deselects all the items in the box. The default link text is Deselect All.

For more information, see Results Deselect All Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value

choicesSelectAllText

Specifies the text for the link that follows the results box that selects all the items in the box. The default link text is Select All.

For more information, see Results Select All Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_date, p_dtime, p_intrvl, p_srch, p_time, p_txtbox, p_value

choicesText

Specifies the title that appears before the choices box when multiple selections are enabled. The default title text is Choices.

For more information, see Choices Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_date, p_dtime, p_intrvl, p_srch, p_time, p_txtbox, p_value

choiceText

Specifies the title that appears above the choices box when only one selection is enabled. The default title text is Choice.
Content model
Content type is string.

Parent elements
p_srch, p_value

cht
Defines a chart.

Content model
id (optional) then ref (optional) then style (any number) then url then regions (optional) then details (optional) then alternateText (optional) then annURL (optional) then extension (optional)

Parent elements
item, reportElement

clndr
Specifies the type of calendar to use.

Content model
Content type is string.

The possible values of this element are restricted to the following.

GREGORIAN
The standard international calendar.

IMPERIAL
The Japanese imperial calendar.

Parent elements
p_date, p_dtime

cmode
Specifies the type of clock user interface.

Content model
Content type is string.

The possible values of this element are restricted to the following.

STATIC
An input text boxes user interface.

LIVE
A clock control user interface.
**Parent elements**

`p_time`

**cname**

Specifies the title that appears before the list of choices in a value prompt. The default title text is the name of the level above the data items that are listed as choices; for example, Regions.

For more information, see **Header Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

`blk`, `hdrs`, `p_date`, `p_dtime`, `p_intrvl`, `p_srch`, `p_time`, `p_txtbox`, `p_value`

**color**

 Specifies the color of the border in RGB value format.

The Red, Blue, and Green child elements define the RGB values for the color.

**Content model**

Red then Green then Blue then Alpha *(optional)* then extension *(optional)*

**Parent elements**

`bottom`, `left`, `right`, `top`

**colTitle**

Defines the title that appears at the top of a column in a list.

**Content model**

id *(optional)* then ref *(optional)* then ctx *(optional)* then style *(any number)* then cspan *(optional)* then rspan *(optional)* then hdr *(optional)* then hdrs *(optional)* then drillAction *(any number)* then item *(any number)* then annURL *(optional)* then isFirstCell *(optional)* then extension *(optional)*

**Parent elements**

`group`, `grp`, `lst`, `table`

**column**

Defines the top level group of column dimension values in a crosstab.

**Content model**

name then start then size then indent *(optional)* then nestedDimension *(any number)* then extension *(optional)*
connection

Specifies data source connection information.

Content model

name then searchPath then selected then signon *(any number)*

Parent elements

p_dsrg

contents

Contains the report element that the user can click to reach the hyperlink target.

Content model

style *(any number)* then item *(any number)* then extension *(optional)*

Parent elements

entry, hlink

coord

Specifies the coordinates for the set of points that define the area in the chart image.

Content model

x then y

Parent elements

area

corner

Defines a crosstab corner. A crosstab corner is the top left corner of the crosstab, above the row labels and to the left of the column labels.

Content model

id *(optional)* then ref *(optional)* then ctx *(optional)* then style *(any number)* then cspan *(optional)* then rspan *(optional)* then hdr *(optional)* then hdrs *(optional)* then drillAction *(any number)* then item *(any number)* then annURL *(optional)* then isFirstCell *(optional)* then extension *(optional)*

Parent elements

catab
cspan

Specifies the number of columns that the cell spans.

**Content model**
Content type is int.

**Parent elements**
cell, colTitle, corner, name, tcell, td, th

ctab

Defines a crosstab. Data in a crosstab appears in a grid, or in rows, columns, and cells.

**Content model**
id (optional) then ref (optional) then style (any number) then corner (optional) then column (any number) then row (any number) then table (optional) then summaryText (optional) then annURL (optional) then isLayoutTable (optional) then extension (optional)

**Parent elements**
item, reportElement

cxt

Specifies context query data information for the cell or text item. This information is used for drill-up and drill-down operations.

The content of this element is automatically generated by Reporting.

**Content model**
Content type is string.

**Parent elements**
area, cell, colTitle, corner, measure, member, name, txt

dataSourceName

Specifies a data source name.

**Content model**
Content type is string.

**Parent elements**
p_dsdc
dateUI

Specifies the type of date user interface.

Content model
Content type is string.

The possible values of this element are restricted to the following.

**CALENDAR**
A calendar control.

**EDITBOX**
An edit text box.

Parent elements
p_date, p_dtime

---

daysText

Specifies the title that appears above the days box in interval prompts. The default title text is Days.

For more information, see Days Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_intrvl

---

depth

Specifies the level of the group.

Content model
Content type is int.

Parent elements
group, grp

---

deselectText

Specifies the text for the link that deselects the items when the selection is optional. The default link text is Deselect.

For more information, see Deslect Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.
Parent elements
p_srch, p_value

details
Contains the rendering details for a chart.

Content model
cgsWidget (any number) then cgsPropCanvas (optional) then extension (optional)

Parent elements
cht
di
Specifies the data item that corresponds to the page group or grouping level.

Content model
Content type is string.

Parent elements
group, grp, pageGroup
di
Specifies the data item referenced by the refDataItem element in the related report specification.
For more information about report specifications, see the IBM Cognos Software Development Kit Developer Guide.

Content model
Content type is string.

Parent elements
locationReference
direction
Indicates the direction for drill requests.

Content model
Content type is string.

The possible values of this element are restricted to the following.
The drill direction is up.

The drill direction is down.

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements

Parent elements
**disp**

Specifies the values rendered to the report user when the prompt is used. These values can be different than the ones that are actually used by the report.

For more information, see **Display Value** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**
Content type is string.

**Parent elements**
child, max, min, sval

**display**

Specifies how an object that references the styleGroup should be displayed.

- **none**
  Do not render the object.

- **inline**
  Render the object inline.

- **block**
  Render the object inside a container.

**Content model**
Content type is string.

**Parent elements**
styleGroup

**displayValue**

Specifies the value that is displayed for this drill-through parameter.

**Content model**
Content type is string.

**Parent elements**
parm

**div**

Defines a division or section in an item.

**Content model**

style (any number) then item (any number) then id (optional) then extension (optional)
Parent elements
item

document

Defines the root element for a resource, for example, a report.

Content model

secondaryOperations (any number) then schemaSubversion (optional) then versionBase (optional) then id (optional) then style (any number) then locationReference (any number) then lang (optional) then pages (any number) then drillDefinitions (optional) then styleGroup (any number) then extension (optional)

drill

Defines a drill-through instance.

The drill-through definition is specified on the corresponding drill element, defined as a child of the drillDefinitions element. The drill-through definition specifies information like the parameters, output format, and prompt information.

The drillRef child element references the drill element that contains the drill-through definition.

Content model

drillRef then parm (any number) then bookmark (optional) then URLParameters (optional)

Parent elements

drills

drill

Contains a drill-through definition.

This drill-through definition can be re-used throughout the layout data document. A drill-through instance is defined using the drill element. The drillRef child element contains the name referenced by each drill-through instance.

Content model

drillRef then label then showInNewWindow then sendFilterContext then prompt then outputFormat then method then targetPath (optional) then parameters (optional) then modelPaths (optional) then url (optional)

Parent elements

drillDefinitions

drillAction

Contains the possible drill actions on an item.
**Content model**
direction then actionURL *(optional)*

**Parent elements**
area, cell, colTitle, corner, img, name, txt

---

**drillDefinitions**
Contains the list of drill-through definitions used throughout the layout data document. These definitions are referenced by the drill elements defined in other parts of the document, using the drillRef child element.

**Content model**
drill *(any number)*

**Parent elements**
document, filterResultSet

---

**drillRef**
Specifies the drill element that defines the drill-through definition.

**Content model**
Content type is string.

**Parent elements**
drill, drill

---

**drills**
Contains the drill-through instances defined on the area, image or text item.

**Content model**
drill *(one or more)*

**Parent elements**
area, img, txt

---

**dv**
Specifies the value of the data item that determines the grouping level for the page or list.

**Content model**
Content type is string.
**Parent elements**
group, grp, pageGroup

**em**

Specifies that the contained text is wrapped in an `<em>` tag in HTML output.

**Content model**

style *(any number)* then item *(any number)* then extension *(optional)*

**Parent elements**

item, reportElement

**entry**

Defines an entry in the table of contents.

**Attributes**

**Adding Other Attributes**

anyAttribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

id *(optional)* then ref *(optional)* then style *(any number)* then bookmark *(optional)* then contents *(optional)* then extension *(optional)*

**Parent elements**

toc

**exclPatrn**

If this element exists, it contains the format used to display val, expressed as a Microsoft Excel format. For example, \\#, \\#, \\#0.

**Content model**

Content type is string.

**Parent elements**

txt

**extension**

Placeholder for future extensions.
**Content model**

any *(any number)*

**Parent elements**

ancestors, bgColor, bgImageProperties, blk, bmrk, body, booklet, bottom, boxStyle, cell, cgsWidget, cht, color, colTitle, column, contents, corner, ctab, details, div, document, em, entry, fgColor, filterResult, filterResultSet, font, fontStyle, footer, group, grp, h1, h2, h3, h4, h5, h6, hdrs, header, height, hlink, html, indent, item, item, kashidaSpace, lcr, left, listElement, locationReference, lst, name, nestedDimension, node, p_btn, p_date, p_dsrc, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value, page, pageGroup, pages, reportElement, rept, reptbl, right, row, row, rtList, rtxt, secondaryOperations, selChoices, selOptions, size, sngl, span, stg, styleGroup, table, table, tbl, tcell, td, th, toc, top, tr, txt, widget, width

**family**

Specifies the font family.

**Content model**

Content type is string.

**Parent elements**

font

**faultcode**

Specifies the fault code that generated the data source prompt.

**Content model**

Content type is string.

**Parent elements**

p_dsrc

**faultstring**

Specifies the error (such as incorrect logon) that caused the data source prompt to be generated.

**Content model**

Content type is string.

**Parent elements**

p_dsrc
**fdate**

Specifies the earliest date to render in the control, and the earliest date that can be selected.
For more information, see **First Date** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**
Content type is date.

**Parent elements**

`p_date`

**fdate**

Specifies the earliest date and time to render in the control, and the earliest date and time that can be selected.

**Content model**
Content type is dateTime.

**Parent elements**

`p_dtime`

**fgColor**

Defines the foreground color in RGB format.

**Content model**
Red then Green then Blue then Alpha *(optional)* then extension *(optional)*

**Parent elements**

`styleGroup`

**filterResult**

Contains the layout data specification for a filtered portion of the original resource.

**Content model**
filterType then filterValue then reportElement *(any number)* then extension *(optional)*

**Parent elements**

`filterResultSet`

**filterResultSet**

Contains one or more layout data specifications for filtered portions of the original resource.
**filterType**

Specifies the type of filter used to filter the resource.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

- **OBJECT_ID**
  - The resource is filtered on a report part or parts.

- **CONTEXT_SPEC**
  - Reserved.

- **XPATH**
  - The resource is filtered by an XPath expression.

**Parent elements**

- filterResult

**filterValue**

Specifies the value used to filter the resource.

**Content model**

Content type is string.

**Parent elements**

- filterResult

**fmtLoc**

Specifies the 2-character locale code used for formatting. For example, CA for Canada.

**Content model**

Content type is string.

**Parent elements**

- txt
Specifies the International Component for Unicode (ICU) format used to display `val`, for example `#,##0`.

**Content model**
Content type is string.

**Parent elements**
`txt`

Defines the scale value used to render the value that appears in the output.

**Content model**
Content type is int.

**Parent elements**
`txt`

Specifies the formatted value displayed for `val`.

**Content model**
Content type is string.

**Parent elements**
`txt`

Defines the font family, size, and style.

**Content model**
`family (optional)` then `size (optional)` then `fontStyle (optional)` then `extension (optional)`

**Parent elements**
`styleGroup`

Specifies the font style.
Content model

bold (optional) then italics (optional) then underline (optional) then overline (optional) then strikethrough (optional) then extension (optional)

Parent elements

font

footer

Defines the page footer.

Content model

style (any number) then item (any number) then extension (optional)

Parent elements

group , grp , lst , page , table

footer

Defines the list group footer.

Content model

row (one or more)

fromText

Specifies the label that appears beside the beginning of a range. The default label text is From.
For more information, see From Text in the IBM Cognos Analytics Reporting User Guide.

Content model

Content type is string.

Parent elements

p_date , p_dtime , p_intrvl , p_time , p_txtbox , p_value

Green

Specifies the green RGB color value.

Content model

Content type is int.

Parent elements

bgColor , color , fgColor
group

Defines the grouping structure for a list.

Content model

di (optional) then dv (optional) then header (optional) then colTitle (any number) then ( row (any number)
or grp (any number) ) then footer (optional) then depth then extension (optional)

Parent elements

lst, table

grp

Defines a level of grouping in a list.

Content model

di (optional) then dv (optional) then header (optional) then colTitle (any number) then ( row (any number)
or grp (any number) ) then footer (optional) then depth then extension (optional)

Parent elements

group, grp

h1

Specifies that the contained text is wrapped in an <h1> tag in HTML output.

Content model

style (any number) then item (any number) then extension (optional)

Parent elements

item, reportElement

h2

Specifies that the contained text is wrapped in an <h2> tag in HTML output.

Content model

style (any number) then item (any number) then extension (optional)

Parent elements

item, reportElement

h3

Specifies that the contained text is wrapped in an <h3> tag in HTML output.
**Content model**

```plaintext
style (any number) then item (any number) then extension (optional)
```

**Parent elements**

```plaintext
item, reportElement
```

---

**h4**

Specifies that the contained text is wrapped in an `<h4>` tag in HTML output.

**Content model**

```plaintext
style (any number) then item (any number) then extension (optional)
```

**Parent elements**

```plaintext
item, reportElement
```

---

**h5**

Specifies that the contained text is wrapped in an `<h5>` tag in HTML output.

**Content model**

```plaintext
style (any number) then item (any number) then extension (optional)
```

**Parent elements**

```plaintext
item, reportElement
```

---

**h6**

Specifies that the contained text is wrapped in an `<h6>` tag in HTML output.

**Content model**

```plaintext
style (any number) then item (any number) then extension (optional)
```

**Parent elements**

```plaintext
item, reportElement
```

---

**hAlign**

Specifies the horizontal alignment for the style.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.
LEFT
The horizontal alignment is left.

CENTER
The horizontal alignment is center.

RIGHT
The horizontal alignment is right.

JUSTIFY
The horizontal alignment is justify.

Parent elements
styleGroup

hdr
Specifies whether the cell is a table header. Use to make reports accessible for people who use screen readers. When set to Yes, screen readers and speech browsers programmatically create relationships between the table header and table cells.

For more information, see Table Header in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is boolean.

Parent elements
cell, colTitle, corner, name, tcell

hdrs
Specifies the cells that are considered to be headers of this cell.

Content model
id (one or more) then cname (optional) then extension (optional)

Parent elements
cell, colTitle, corner, name

header
Defines the page header.

Content model
style (any number) then item (any number) then extension (optional)

Parent elements
page
**header**

Defines the list group header.

**Content model**

`row (one or more)`

**Parent elements**

`group`, `grp`, `lst`, `table`

**headerAfterOverall**

Specifies whether the list page header is to be rendered after the overall header.

For more information, see `Display After Overall Header` in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is boolean.

**Parent elements**

`lst`, `table`

**height**

Specifies the height of the box.

**Content model**

`val` then `units` then `extension (optional)`

**Parent elements**

`boxStyle`

**hidden**

Specifies whether this item should be hidden.

**Content model**

Content type is boolean.

**Parent elements**

`styleGroup`
highestValueText

Specifies the label that appears beside the highest value option when ranges are enabled. The default label text is Latest date, Latest time, or Highest interval.

For more information, see Highest Value Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_date, p_dtime, p_intrvl, p_time, p_txtbox, p_value

hlink

Defines a hyperlink.

Content model
id (optional) then ref (optional) then style (any number) then contents then target then annURL (optional) then extension (optional)

Parent elements
item, reportElement

horizontalLayout

Specifies whether a table is laid out horizontally or vertically.

When true, the repeater table cells are laid out from left to right, then top to bottom. When false, the repeater table cells are laid out from top to bottom, then left to right.

Content model
Content type is boolean.

Parent elements
reptbl

horizontalSize

Specifies the number of repeater table element cells in each row.

Content model
Content type is int.

Parent elements
reptbl
**hoursText**

Specifies the title that appears above the hours box in interval prompts. The default title text is Hrs. For more information, see **Hours Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**
Content type is string.

**Parent elements**
- p_intrvl

---

**html**

Contains custom HTML from the source resource.

**Content model**

```
id (optional) then ref (optional) then style (any number) then val then annURL (optional) then extension (optional)
```

**Parent elements**
- item
- reportElement

---

**htxt**

Specifies whether this prompt should be rendered as a masked text field

**Content model**
Content type is boolean.

**Parent elements**
- p_txtbox

---

**id**

Specifies a unique element identifier.
The content of this element corresponds to the name element in the source report specification.

**Content model**
Content type is string.

**Parent elements**
- blk
- bmrk
- booklet
- cell
- cht
- colTitle
- corner
- ctab
- div
- document
- entry
- hdrs
- hlink
- html
- img
- lcr
- lst
- name
- p_btn
- p_date
- p_dtime
- p_intrvl
- p_srch
- p_time
- p_tree
- p_txtbox
- p_value
- page
- rept
- reptbl
- rtxt
- sngl
- span
- table
- tbl
tcell
toc
txt
widget

---
**img**

Defines an image.

**Content model**

id *(optional)* then ref *(optional)* then style *(optional)* then drills *(optional)* then drillAction *(any number)* then url then isCMMMap *(optional)* then alternateText *(optional)* then annURL *(optional)* then isFirstElement *(optional)* then extension *(optional)*

**Parent elements**

item , item , reportElement

**indent**

Specifies the indentation of a dimension in a crosstab.

**Content model**

val then units then extension *(optional)*

**Parent elements**

column , nestedDimension , row

**insertText**

Specifies the label that appears on the button that is used to add items to the selected items box in all multiple selection prompts. The default label text is Insert.

For more information, see **Insert Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

p_date , p_dtime , p_intrvl , p_srch , p_time , pTextbox , p_value

**isCMMMap**

Specifies that the image represents an IBM Cognos Metrics Manager map.

**Content model**

Content type is boolean.

**Parent elements**

img
<table>
<thead>
<tr>
<th><strong>isFirstCell</strong></th>
<th>Specifies that this is the first cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content model</strong></td>
<td>Content type is boolean.</td>
</tr>
<tr>
<td><strong>Parent elements</strong></td>
<td>cell, colTitle, corner, name</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>isFirstElement</strong></th>
<th>Specifies that this element is the first element in a cell.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content model</strong></td>
<td>Content type is boolean.</td>
</tr>
<tr>
<td><strong>Parent elements</strong></td>
<td>img, txt</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>isLayoutTable</strong></th>
<th>Specifies that the parent object is being used for layout purposes.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content model</strong></td>
<td>Content type is boolean.</td>
</tr>
<tr>
<td><strong>Parent elements</strong></td>
<td>ctab, lst, reptbl, table, tbl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>italics</strong></th>
<th>Specifies the font style is italic.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content model</strong></td>
<td>Content type is boolean.</td>
</tr>
<tr>
<td><strong>Parent elements</strong></td>
<td>fontStyle</td>
</tr>
</tbody>
</table>
**item**

Contains report parts.

**Content model**

txt or lst or cell or ctab or cht or img or hlink or html or rtxt or rept or reptbl or bmrk or toc or lcr or tbl or blk or sngl or widget or em or stg or h1 or h2 or h3 or h4 or h5 or h6 or p_txtbox or p_value or p_date or p_time or p_dtime or p_intrvl or p_dsrc or p_srch or p_tree or p_btn or extension *(optional)*

**Parent elements**

blk, body, cell, colTitle, contents, corner, em, footer, h1, h2, h3, h4, h5, h6, header, lcr, name, rept, sngl, stg, tcell

---

**item**

Contains rich text items.

**Content model**

-txt or div or span or rtList or table or img or extension *(optional)*

**Parent elements**

div, listItem, rtxt, span, td, th

---

**justification**

Specifies text justification.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**DISTRIBUTE**

The justification is distribute.

**DISTRIBUTE LINES**

Same as distribute, but also justifies last line in a paragraph.

**INTERCLUSTER**

The justification is intercluster.

**INTERIDEOGRAPH**

The justification is interideograph.

**INTERWORD**

The justification is interword.

**KASHIDA**

The justification is kashida.
NEWSPAPER

The justification is newspaper.

**Parent elements**

textStyle

---

**kashidaSpace**

Defines kashida size.

**Content model**

val then units then extension *(optional)*

**Parent elements**

textStyle

---

**keywordsText**

Specifies the title that appears above the keyword search box in select & search prompts. The default title text is Keywords.

For more information, see [Keywords Text](#) in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

p_srch

---

**label**

Specifies the label or tooltip for the area, bookmark, drill, or measure.

**Content model**

Content type is string.

**Parent elements**

area, bmrk, drill, measure

---

**labelFor**

Specifies the _id of the object for which this object is the label.

**Content model**

Content type is string.
Parent elements
txt

lang
Specifies the document language in ISO 639-1 format.

Content model
Content type is string.

Parent elements
document

lcr
Defines a layout component reference from the source report specification.

Content model
id (optional) then ref (optional) then style (any number) then reportPath (optional) then item (any number) then annURL (optional) then extension (optional)

Parent elements
item , reportElement

ldate
Specifies the latest date rendered in the control, and the last date that can be selected.
For more information, see Last Date in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is date.

Parent elements
p_date

ldate
Specifies the latest date and time rendered in the control, and the last date and time that can be selected.

Content model
Content type is dateTime.

Parent elements
p_dtime
left

Defines size of margin or padding for the left side of the box.

Content model
val then units then extension (optional)

Parent elements
margin, padding

left

Defines color, line style, and width of left border.

Content model
color (optional) then lineStyle (optional) then width (optional)

Parent elements
border

lineStyle

Specifies the line style for the border.

Content model
Content type is string.

The possible values of this element are restricted to the following.

NONE
  There is no line.

SOLID
  The line style is solid.

DOUBLE
  The line style is double.

DOTTED
  The line style is dotted.

DASHED
  The line style is dashed.

GROOVE
  The line style is groove.

RIDGE
  The line style is ridge.
INSET

The line style is inset.

OUTSET

The line style is outset.

Parent elements

bottom, left, right, top

listItem

Defines an item in a list of rich text items.

Content model

item (any number) then extension (optional)

Parent elements

rtList

loc

Specifies the location of the report element in the source specification.

Content model

Content type is string.

Parent elements

locationReference

locale

Specifies the locale of the model of the drill target.

Content model

Content type is string.

Parent elements

modelPaths

locationReference

Specifies the location of an element in the source report specification.

Content model

ref then di (optional) then loc then extension (optional)
logonFailureCount

Specifies the number of failed logon attempts.

**Content model**
Content type is int.

**Parent elements**
- p_dsrd

lowestValueText

Specifies the label that appears beside the lowest value option when ranges are enabled. The default label text is Earliest date, Earliest time, or Lowest interval.

For more information, see **Lowest Value Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**
Content type is string.

**Parent elements**
- p_date, p_dtime, p_intrvl, p_time, p_txtbox, p_value

lst

Defines a list.

**Content model**

id *(optional)* then ref *(optional)* then style *(any number)* then colTitle *(any number)* then header *(optional)* then headerAfterOverall *(optional)* then group *(optional)* then footer *(optional)* then summaryText *(optional)* then annURL *(optional)* then isLayoutTable *(optional)* then extension *(optional)*

**Parent elements**
- item, reportElement

margin

Defines the size of the box margin.

**Content model**
top *(optional)* then left *(optional)* then right *(optional)* then bottom *(optional)
max

Specifies the maximum possible value for the prompt range. If not specified, then the maximum value is unbounded.

Content model

use then disp (optional) then nullUse (optional) then nullDisp (optional)

Parent elements

rval

maximumValueCount

Specifies the maximum number of nodes that can be displayed in the tree prompt user interface.

Content model

Content type is int.

Parent elements

p_tree

measure

Specifies the chart measure.

Content model

ctx (optional) then label (optional)

Parent elements

area

member

Specifies the member used for the drill-up or drill-down operation.

Content model

ctx (optional)

Parent elements

area
**memberDisplayCountDefault**

Specifies the maximum number of member nodes that should be displayed in the tree prompt user interface.

**Content model**

Content type is int.

**Parent elements**

`p_tree`

**memberDisplayCountLimit**

Specifies the maximum number of member nodes that can be displayed in the tree prompt user interface.

**Content model**

Content type is int.

**Parent elements**

`p_tree`

**method**

Specifies the drill-through method.

**Content model**

Content type is string.

**Parent elements**

`drill`

**milisecs**

Specifies whether to display the milliseconds. The default value is `true`.

**Content model**

Content type is boolean.

**Parent elements**

`p_intrvl`, `p_time`

**millisecondsText**

Specifies the title that appears above the milliseconds box. The default title text is `ms`.

For more information, see **Milliseconds Text** in the *IBM Cognos Analytics Reporting User Guide*. 
Content model
Content type is string.

Parent elements
p_intrvl

**min**

Specifies the minimum possible value for the prompt range. If not specified, then the minimum value is unbounded.

Content model
use then disp (optional) then nullUse (optional) then nullDisp (optional)

Parent elements
rval

**minutesText**

Specifies the title that appears above the minutes box in interval prompts. The default title text is Mins. For more information, see Minutes Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_intrvl

**mline**

Specifies whether this prompt should be displayed as a multi-line text box

Content model
Content type is boolean.

Parent elements
p_txtbox

**modelPaths**

Contains the search path and locale of the drill-through target.

Content model
objectPath (any number) then locale
**Parent elements**
drill

**moreData**
Specifies that there is more data that can be retrieved for the tree.

**Content model**
Content type is boolean.

**Parent elements**
p_tree

**mtchall**
Specifies whether the search results returned match all of the search words entered. The default value is false.

**Value**
**Description**
true
The results returned match all of the search words entered. When mtchan y is also true, then the search can contain all the keywords in any order.
false
The results returned match any of the search words entered.

**Content model**
Content type is boolean.

**Parent elements**
p_srch

**mtchan y**
Specifies whether the search results contain or start with the keywords. The default value is false.

**Value**
**Description**
true
The results returned contain the key words.
false
The search results returned start with the keywords.

**Content model**
Content type is boolean.

**Parent elements**
p_srch

Layout Data (LDX) schema reference 211
**multi**

Specifies whether the control allows the selection of multiple values.

For more information, see Multi-Select in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is boolean.

**Parent elements**

`p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value`

**mun**

Specifies the member unique name (MUN) of the parameter value.

See the topic about using drill-through access in the *IBM Cognos Analytics Reporting User Guide* for more information on member unique names.

**Content model**

Content type is string.

**Parent elements**

`parm`

**name**

Specifies the label used to identify the row, column, or nested dimension

**Content model**

Content type is string.

**Parent elements**

`connection, parm, signon`

**name**

specifies the name in the name/value pair of the parameter.

**Content model**

Content type is string.

**Parent elements**

`connection, parm, signon`
### name

Specifies the name of the style.

**Content model**

Content type is string.

**Parent elements**

- styleGroup

### name

Specifies the name of the parameter.

This element is referenced by the `name` element that is a child of the `parm` element on the drill-through instance.

**Content model**

Content type is string.

**Parent elements**

- parameter

### nestedDimension

Defines a crosstab dimension.

**Content model**

```
name then start then size then indent (optional) then nestedDimension (any number) then extension (optional)
```

**Parent elements**

- column, nestedDimension, row

### noadorn

Specifies whether to hide the asterisk (*) on required prompts and arrow (->) on type-in prompts that are in an error state.

**Content model**

Content type is boolean.

**Parent elements**

- p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value
**nocase**

Specifies whether the search is case insensitive. The default value is `true`.

**Content model**

Content type is boolean.

**Parent elements**

`p_srch`

---

**node**

Represents a parent node for a tree prompt.

Parent Tree node

**Content model**

`child (any number) then extension (optional)`

**Parent elements**

`p_tree`

---

**noresults**

Specifies whether the search returned no results.

**Content model**

Content type is boolean.

**Parent elements**

`p_srch`

---

**nullDisp**

Specifies whether a null display value should be used.

**Content model**

Content type is boolean.

**Parent elements**

`child, max, min, sval`

---

**nullUse**

Specifies whether a null use value should be used.
Content model
Content type is boolean.

Parent elements
child, max, min, sval

**num**

Specifies whether the value supplied must be numeric.

Content model
Content type is boolean.

Parent elements
p_txtbox

**objectPath**

Specifies the search path for the model of the drill-through target.

Content model
Content type is string.

Parent elements
modelPaths

**ordered**

Specifies whether this is an ordered list.

Content model
Content type is boolean.

Parent elements
rtList

**outputFormat**

Specifies the output format of the target resource.

Content model
Content type is string.
overline

Specifies the font style is overline.

Content model
Content type is boolean.

Parent elements
fontStyle

p_btn

Specifies a prompt button control.

Content model
id (optional) then ref (optional) then style (any number) then bType (optional) then annURL (optional) then extension (optional)

Parent elements
item, reportElement

p_date

Specifies a Date Prompt control.

Content model
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then dateUI (optional) then clndr (optional) then fdate (optional) then ldate (optional) then cname (optional) then selChoices (optional) then choicesText (optional) then fromText (optional) then toText (optional) then lowestValueText (optional) then highestValueText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then removeText (optional) then insertText (optional) then annURL (optional) then extension (optional)

Parent elements
item, reportElement

p_dsrrc

Specifies a Data Source Prompt control.

Content model
pname then faultcode (optional) then faultstring (optional) then dataSourceName (optional) then logonFailureCount (optional) then persistPrompt (optional) then connection (one or more) then signon (any number) then annURL (optional) then extension (optional)
**p_dtime**

Specifies a **Date & Time Prompt** control.

**Content model**

```
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then dateUI (optional) then clndr (optional) then fdate (optional) then ldate (optional) then cname (optional) then selChoices (optional) then choicesText (optional) then fromText (optional) then toText (optional) then lowestValueText (optional) then highestValueText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then removeText (optional) then insertText (optional) then annURL (optional) then extension (optional)
```

**Parent elements**

item, reportElement

---

**p_intrvl**

Specifies an **Interval Prompt** control.

**Content model**

```
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then secsnds (optional) then milisecs (optional) then cname (optional) then selChoices (optional) then choicesText (optional) then fromText (optional) then toText (optional) then lowestValueText (optional) then highestValueText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then removeText (optional) then insertText (optional) then daysText (optional) then hoursText (optional) then minutesText (optional) then secondsText (optional) then millisecondsText (optional) then annURL (optional) then extension (optional)
```

**Parent elements**

item, reportElement

---

**p_srch**

Specifies a **Select & Search Prompt** control.

**Content model**

```
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then cascadeon (optional) then prepopulate (optional) then rows (optional) then disabled (optional) then noresults (optional) then mtchany (optional) then mtchall (optional) then showopt (optional) then srchval (optional) then nocase (optional) then cname (optional) then selOptions (optional) then selChoices (optional) then keywordsText (optional) then searchInstructionsText (optional) then choicesText (optional) then choiceText (optional) then resultsText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then resultsSelectAllText (optional) then resultsDeselectAllText (optional) then deselectText (optional) then annURL (optional) then extension (optional)
```

**Parent elements**

item, reportElement
Parent elements
  item , reportElement

p_time

Specifies a Time Prompt control.

Content model
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then timeUI (optional) then cmode (optional) then seconds (optional) then milisecs (optional) then cname (optional) then selChoices (optional) then choicesText (optional) then fromText (optional) then toText (optional) then lowestValueText (optional) then highestValueText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then removeText (optional) then insertText (optional) then annURL (optional) then extension (optional)

Parent elements
  item , reportElement

p_tree

Specifies a Tree Prompt control.

Content model
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then multi (optional) then cascadeon (optional) then prepopulate (optional) then rows (optional) then disabled (optional) then treeUI (optional) then prepopulatlevels (optional) then canExpand (optional) then node (optional) then moreData (optional) then memberDisplayCountDefault (optional) then memberDisplayCountLimit (optional) then maximumValueCount (optional) then skipValueCount (optional) then selOptions (optional) then selChoices (optional) then ancestors (optional) then choicesDeselectAllText (optional) then resultsDeselectAllText (optional) then annURL (optional) then extension (optional)

Parent elements
  item , reportElement

p_txtbox

Specifies a Text Box Prompt control.

Content model
id (optional) then ref (optional) then style (any number) then pname then req (optional) then noadorn (optional) then range (optional) then multi (optional) then num (optional) then mline (optional) then htxt (optional) then thSep (optional) then cname (optional) then selChoices (optional) then choicesText (optional) then fromText (optional) then toText (optional) then lowestValueText (optional) then highestValueText (optional) then choicesSelectAllText (optional) then choicesDeselectAllText (optional) then removeText (optional) then insertText (optional) then annURL (optional) then extension (optional)
**p_value**

Specifies a *Value Prompt* control.

**Content model**

id *(optional)* then ref *(optional)* then style *(any number)* then pname *(optional)* then req *(optional)* then noadorn *(optional)* then range *(optional)* then multi *(optional)* then cascadeon *(optional)* then prepopulate *(optional)* then rows *(optional)* then disabled *(optional)* then selectUI *(optional)* then auto *(optional)* then cname *(optional)* then autocascade *(optional)* then selChoices *(optional)* then selOptions *(optional)* then choicesText *(optional)* then choiceText *(optional)* then resultsText *(optional)* then fromText *(optional)* then toText *(optional)* then lowestValueText *(optional)* then highestValueText *(optional)* then choicesSelectAllText *(optional)* then choicesDeselectAllText *(optional)* then resultsSelectAllText *(optional)* then deselectText *(optional)* then removeText *(optional)* then insertText *(optional)* then annURL *(optional)* then extension *(optional)*

**Parent elements**

item , reportElement

---

**padding**

Defines box padding.

**Attributes**

**Adding Other Attributes**

任何Attribute indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and processContents parameters, respectively.

**Content model**

*top (optional)* then *left (optional)* then *right (optional)* then *bottom (optional)*

**Parent elements**

boxStyle

---

**page**

Defines a page of the resource.

**Content model**

canFinish *(optional)* then canNext *(optional)* then canBack *(optional)* then id *(optional)* then ref *(optional)* then style *(any number)* then header *(optional)* then body *(optional)* then footer *(optional)* then extension *(optional)*

**Parent elements**

pages
pageGroup

Defines a grouping level for groups of pages. Page breaks for the group can be defined, based on a data item.

Content model

\texttt{di \ (optional) \ then \ dv \ (optional) \ then \ pages \ (one \ or \ more) \ then \ extension \ (optional)}

Parent elements

\texttt{pages}

pages

Defines a container element for \texttt{page} and \texttt{pageGroup} elements.

Content model

\texttt{page \ or \ pageGroup \ or \ booklet \ or \ extension \ (optional)}

Parent elements

\texttt{booklet, \ document, \ pageGroup}

parameter

Defines a parameter on the drill-through definition.

The \texttt{name} child element identifies the parameter. This name is referenced by a drill-through instance through the \texttt{parm} element.

Content model

\texttt{name \ then \ type}

Parent elements

\texttt{parameters}

parameters

Contains the parameters used in the drill-through definition.

Content model

\texttt{parameter \ (one \ or \ more)}

Parent elements

\texttt{drill}
### parm

Specifies the parameter used for the drill through operation.

The name child element references a parameter defined in the drill through definition.

**Content model**

name then value then displayValue (optional) then mun (optional)

**Parent elements**

drill

### persistPrompt

Specifies whether data source credentials should be saved in Content Manager.

**Content model**

Content type is string.

**Parent elements**

p_dsrsr

### pname

Specifies the parameter that is satisfied by values chosen in the prompt control.

For more information, see Parameter in the IBM Cognos Analytics Reporting User Guide.

**Content model**

Content type is string.

**Parent elements**

p_date, p_dsrsr, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value

### position

Specifies the position of the background image. Valid values of the string are the same as for the Cascading Style Sheets position property.

**Content model**

Content type is string.

**Parent elements**

bgImageProperties
**prepopulate**

Specifies whether to pre-populate the control with values, but only if the parent of this prompt control is optional. This only applies to prompt controls that have a parent in a cascade.

For more information, see **Pre-populate** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is boolean.

**Parent elements**

p_srch, p_tree, p_value

**prepopulatelnels**

Specifies the number of levels to pre-populate the prompt with. The default value is 1, which will pre-populate the prompt with only the root members.

For more information, see **Pre-populate Levels** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is int.

**Parent elements**

p_tree

**prompt**

Specifies whether the report is automatically prompted when the drill-through definition is executed.

**Content model**

Content type is string.

**Parent elements**

drill

**range**

Specifies whether this control accepts ranges.

For more information, see **Range** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is boolean.

**Parent elements**

p_date, p_dtime, p_intrvl, p_srch, p_time, p_txtbox, p_value
**Red**

Specifies the red RGB color value.

**Content model**

Content type is int.

**Parent elements**

bgColor, color, fgColor

---

**ref**

Specifies an identifier for the location reference.

**Content model**

Content type is string.

**Parent elements**

blk, bmrk, booklet, cell, cht, colTitle, corner, ctab, entry, hlink, html, img, lcr, locationReference, lst, name, p_btn, p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value, page, rept, reptbl, rtxt, sngl, table, tbl, tcell, toc, txt, widget

---

**regions**

Contains the regions defined in the chart. Each region is defined by an area child element.

**Content model**

area (any number)

**Parent elements**

cht

---

**removeText**

Specifies the label that appears on the button that is used to remove items from the selected items box in all multiple selection prompts. The default label text is Remove.

For more information, see *Remove Text* in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

p_date, p_dtime, p_intrvl, p_srch, p_time, p_txtbox, p_value
repeat

Specifies how the background image should be repeated.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**REPEAT**

Repeat image in both horizontal and vertical.

**REPEAT-X**

Repeat image horizontally only.

**REPEAT-Y**

Repeat image vertically only.

**NO REPEAT**

Do not repeat image.

**INHERIT**

The repeating behavior is inherited from the parent container.

**Parent elements**

bgImageProperties

---

reportElement

Contains the report elements returned from the filtered report.

**Content model**

txt or lst or cell or ctab or cht or img or hlink or html or rtxt or rept or reptbl or bmrk or toc or lcr or tbl or blk or sngl or widget or em or stg or h1 or h2 or h3 or h4 or h5 or h6 or p_txtbox or p_value or p_date or p_time or p_dtime or p_intrvl or p_dsrc or p_srch or p_tree or p_btn or extension (optional)

**Parent elements**

filterResult

---

reportPath

Specifies the search path to the report that contains the referenced component.

**Content model**

Content type is string.

**Parent elements**

booklet, lcr
**rept**

Defines a repeater. A repeater renders query data with no layout structure.

**Content model**

id (optional) then ref (optional) then style (any number) then item (any number) then annURL (optional) then extension (optional)

**Parent elements**

item, reportElement

**reptbl**

Defines a repeater table. This element renders query data in a table. Data in a repeater table can be grouped.

**Content model**

id (optional) then ref (optional) then style (any number) then horizontalLayout (optional) then horizontalSize (optional) then verticalSize (optional) then row (any number) then summaryText (optional) then annURL (optional) then isLayoutTable (optional) then extension (optional)

**Parent elements**

item, reportElement

**req**

Specifies whether the prompt is required or optional. If true, the prompt must have a value entered before the report can be run.

For more information, see Required in the IBM Cognos Analytics Reporting User Guide.

**Content model**

Content type is boolean.

**Parent elements**

p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value

**resultsDeselectAllText**

Specifies the text for the link that follows the results box that deselects all the items in the box. The default link text is Deselect All.

For more information, see Results Deselect All Text in the IBM Cognos Analytics Reporting User Guide.

**Content model**

Content type is string.
**Parent elements**

p_srch, p_tree, p_value

---

**resultsSelectAllText**

Specifies the text for the link that follows the results box that selects all the items in the box. The default link text is Select All.

For more information, see **Results Select All Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

p_srch, p_value

---

**resultsText**

Specifies the title that precedes the results box in select & search prompts. The default title text is Results.

For more information, see **Results Text** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

p_srch, p_value

---

**right**

Specifies the size of the right margin or box padding.

**Content model**

val then units then extension *(optional)*

**Parent elements**

margin, padding

---

**right**

Defines the right side of the border.

**Content model**

`color (optional)` then `lineStyle (optional)` then `width (optional)`
**Parent elements**

`border`

---

**row**

Defines the top level group of row dimension values in a crosstab.

**Content model**

`name` then `start` then `size` then `indent` *(optional)* then `nestedDimension` *(any number)* then `extension` *(optional)*

**Parent elements**

`ctab`

---

**row**

Defines a row in a table, footer, header, group, or repeater table.

**Attributes**

**Adding Other Attributes**

`anyAttribute` indicates that any attribute within the specified namespace(s) is permitted. Applicable namespace(s) and processing considerations are specified by the namespace and `processContents` parameters, respectively.

**Content model**

`cell` *(any number)* then `extension` *(optional)*

**Parent elements**

`footer`, `group`, `grp`, `header`, `reptbl`, `table`

---

**rows**

Specifies the maximum number of rows to show at one time. (See `Rows` in the Reporting User Guide.)

**Content model**

Content type is int.

**Parent elements**

`p_srch`, `p_tree`, `p_value`

---

**rspan**

Specifies the number of rows that the cell spans.

**Content model**

Content type is int.
rtList

Defines a list of rich text items.

Content model
style (any number) then ordered then listItem (any number) then extension (optional)

Parent elements
item

rtxt

Defines a rich text item.

Content model
id (optional) then ref (optional) then style (any number) then item (any number) then annURL (optional) then extension (optional)

Parent elements
item, reportElement

rval

Specifies a prompt answer whose value lies in a range of values.

Content model
min (optional) then max (optional)

Parent elements
ancestors, selChoices, selOptions

schemaSubversion

Reserved.

Content model
Content type is string.

Parent elements
document
**searchInstructionsText**

Specifies the instructions that appear before the keyword search box in select & search prompts. The default text is as follows: Type one or more keywords separated by spaces.

For more information, see [Search Instructions Text](#) in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

**Parent elements**

- p_srch

**searchPath**

Specifies the search path to a signon or data source entry in a data source prompt.

**Content model**

Content type is string.

**Parent elements**

- connection, signon

**secnds**

Specifies whether to display the seconds.

**Content model**

Content type is boolean.

**Parent elements**

- p_intrvl, p_time

**secondaryOperations**

Specifies a list of available secondary operations.

**Content model**

value then extension (optional)

**Parent elements**

- document, filterResultSet
secondsText

Specifies the title that appears before the seconds box in interval prompts. The default title text is s.
For more information, see Seconds Text in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_intrvl

selChoices

Specifies the collection of default selections for a prompt control.
For more information, see Default Selections in the IBM Cognos Analytics Reporting User Guide.

Content model
sval (any number) or rval (any number) or extension (optional)

Parent elements
p_date, p_dtime, p_intrvl, p_srch, p_time, p_tree, p_txtbox, p_value

selected

Specifies whether this connection or signon should be displayed as selected in the user interface for a
data source prompt

Content model
Content type is boolean.

Parent elements
connection, signon

selectUI

Specifies which interface the prompt control renders.
For more information, see Select UI in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

The possible values of this element are restricted to the following.
DROP_DOWN
A drop down box.
**LIST_BOX**
A list box.

**RADIO**
A radio button group.

**CHECK_BOX**
A check box.

**Parent elements**
`p_value`

**selOptions**
Specifies the collection of all possible selections for a prompt control.

**Content model**
`sval (any number) or rval (any number) or extension (optional)`

**Parent elements**
`p_srch, p_tree, p_value`

**sendFilterContext**
Specifies whether to send the dynamic filter context.

**Content model**
Content type is boolean.

**Parent elements**
`drill`

**showInNewWindow**
Specifies whether the target resource appears in a new window when the drill-through definition is executed.

**Content model**
Content type is boolean.

**Parent elements**
`drill`

**showopt**
Specifies whether the options to control the search (`mtcha11, mtchany, and nocase`) should be expanded and shown to the user.
**Content model**
Content type is boolean.

**Parent elements**
p_srch

---

**signon**
Specifies a data source signon.

**Content model**
name *(optional)* then searchPath *(optional)* then selected

**Parent elements**
connection, p_dsdc

---

**size**
Specifies the number of rows or columns that the dimension spans.

**Content model**
Content type is int.

**Parent elements**
column, nestedDimension, row

---

**size**
Specifies the size of the font.

**Content model**
val then units then extension *(optional)*

**Parent elements**
font

---

**skipValueCount**
Specifies how many rows of data to skip when fetching data to populate a tree prompt.

**Content model**
Content type is int.
**Parent elements**

`p_tree`

**sngl**

Represents a singleton in the report.

**Content model**

`id (optional) then ref (optional) then style (any number) then item (any number) then annURL (optional) then extension (optional)`

**Parent elements**

`item , reportElement`

**span**

Defines a span container.

**Content model**

`style (any number) then item (any number) then id (optional) then extension (optional)`

**Parent elements**

`item`

**srchval**

Contains the keywords that are passed to the search.

**Content model**

Content type is string.

**Parent elements**

`p_srch`

**start**

Specifies the first row or column of the dimension in the data table.

**Content model**

Content type is int.

**Parent elements**

`column , nestedDimension , row`
**stg**

Specifies that the contained text is wrapped in a `<stg>` tag in HTML output.

**Content model**

*style* *(any number)* then *item* *(any number)* then *extension* *(optional)*

**Parent elements**

*item*, *reportElement*

---

**strictLineBreaking**

Specifies the text style is strict line breaking. This style is used for Japanese text.

**Content model**

Content type is boolean.

**Parent elements**

*textStyle*

---

**strikethrough**

Specifies the text style is strikethrough.

**Content model**

Content type is boolean.

**Parent elements**

*fontStyle*

---

**style**

Specifies the style to apply.

The string specified in this element references the *name* element of the style defined in the parent *styleGroup* element.

**Content model**

Content type is string.

**Parent elements**

*blk*, *bmrk*, *body*, *cell*, *cht*, *colTitle*, *contents*, *corner*, *ctab*, *div*, *document*, *em*, *entry*, *footer*, *h1*, *h2*, *h3*, *h4*, *h5*, *h6*, *header*, *hlink*, *html*, *img*, *lcr*, *lst*, *name*, *p_btn*, *p_date*, *p_dtime*, *p_intrvl*, *p_srch*, *p_time*, *p_tree*, *p_txtbox*, *p_value*, *page*, *rept*, *reptbl*, *rtList*, *rtxt*, *sngl*, *span*, *stg*, *table*, *table*, *tbl*, *tcell*, *td*, *th*, *toc*, *tr*, *trow*, *txt*, *widget*
**styleGroup**

Defines a style used in the layout data document.

**Content model**

name then font (optional) then textStyle (optional) then boxStyle (optional) then fgColor (optional) then bgColor (optional) then bgImageURL (optional) then bgImageProperties (optional) then hAlign (optional) then vAlign (optional) then hidden (optional) then display (optional) then extension (optional)

**Parent elements**

document, filterResultSet

**summaryText**

Specifies summary text for table-like objects. Use to make your reports accessible for people who use screen readers. The summary text is never displayed in visual Web browsers. Summary text is used only for screen readers and speech browsers.

For more information, see Summary Text in the IBM Cognos Analytics Reporting User Guide.

**Content model**

Content type is string.

**Parent elements**

ctab, lst, reptbl, table, tbl

**sval**

Specifies a prompt answer whose value is a single value.

**Content model**

use then disp (optional) then nullUse (optional) then nullDisp (optional)

**Parent elements**

ancestors, selChoices, selOptions

**table**

Specifies the data in a crosstab.

**Content model**

row (any number)

**Parent elements**

ctab
**table**

Represents an HTML table in a rich text item.

**Content model**

```
st yle (any number) then tr (any number) then id (optional) then extension (optional)
```

**Parent elements**

- item

**table**

Specifies the data in a chart.

**Content model**

```
id (optional) then ref (optional) then style (any number) then colTitle (any number) then header (optional) then headerAfterOverall (optional) then group (optional) then footer (optional) then summaryText (optional) then annURL (optional) then isLayoutTable (optional) then extension (optional)
```

**Parent elements**

- cgsData

**target**

Specifies the URL for the hyperlink target.

**Content model**

Content type is string.

**Parent elements**

- hlink

**targetPath**

Specifies the search path to the target resource.

**Content model**

Content type is string.

**Parent elements**

- drill

**tbl**

Represents a layout table. Used to position elements for formatting in a report.
Content model
id (optional) then ref (optional) then style (optional) then trow (any number) then summaryText (optional) then annURL (optional) then isLayoutTable (optional) then extension (optional)

Parent elements
item, reportElement

tcell
Represents a layout table cell.

Content model
id (optional) then ref (optional) then style (any number) then colspan (optional) then rowspan (optional) then hdr (optional) then item (any number) then annURL (optional) then extension (optional)

Parent elements
trow

td
Represents a rich text table cell. Equivalent to the HTML td element.

Content model
style (any number) then colspan (optional) then rowspan (optional) then item (any number) then extension (optional)

Parent elements
tr

textStyle
Defines a text style.

Content model
wrapping (optional) then direction (optional) then writingMode (optional) then biDirectional (optional) then justification (optional) then kashidaSpace (optional) then wordBreak (optional) then wordBreakStyle (optional) then strictLineBreaking (optional)

Parent elements
styleGroup

th
Represents a rich text table header cell. Equivalent to the HTML th element.
Content model

*Content model*

**thSep**

Specifies whether to delimit digit groups with the thousands separator.

For more information, see **Use Thousands Separator** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is boolean.

**Parent elements**

tr

**timeUI**

Specifies which interface the prompt control renders.

For more information, see **Select UI** in the *IBM Cognos Analytics Reporting User Guide*.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**CLOCK**

A clock control.

**EDITBOX**

An edit text box.

**Parent elements**

p_txtbox

**title**

Specifies the title of a widget.

**Content model**

Content type is string.

**Parent elements**

widget
toc

Defines a table of contents.

Content model
id (optional) then ref (optional) then style (any number) then entry (any number) then annURL (optional) then extension (optional)

Parent elements
item, reportElement

top

Defines the size of box margin or box padding.

Content model
val then units then extension (optional)

Parent elements
margin, padding

top

Defines the color, line style, and width of top border.

Content model
color (optional) then lineStyle (optional) then width (optional)

Parent elements
border
toText

Specifies the label that appears beside the end of a range. The default label text is To.

For more information, see Select UI in the IBM Cognos Analytics Reporting User Guide.

Content model
Content type is string.

Parent elements
p_date, p_dtime, p_intrvl, p_time, pTextbox, p_value

tr

Represents a rich text table row. Equivalent to the HTML tr element.
Content model

**style** *(any number)* then *(th or td)* *(any number)* then **extension** *(optional)*

Parent elements

table

treeUI

Specifies which interface the prompt control renders.

Content model

Content type is string.

The possible values of this element are restricted to the following.

**NORMAL**

The standard tree prompt user interface.

**COMPRESSED**

Reserved.

**DROPDOWN**

Reserved.

**CASCADING**

Reserved.

Parent elements

p_tree

trow

Specifies a layout table row.

Content model

**style** *(any number)* then **tcell** *(any number)*

Parent elements

tbl

txt

Defines a text frame.

Content model

**id** *(optional)* then **ref** *(optional)* then **ctx** *(optional)* then **style** *(any number)* then **drills** *(optional)* then **drillAction** *(any number)* then **val** then **valErrorState** *(optional)* then **valTyp** then **fmtVal** *(optional)* then **fmtPatrn** *(optional)* then **exclPatrn** *(optional)* then **fmtLoc** *(optional)* then **fmtScale** *(optional)* then **annURL** *(optional)* then **isFirstElement** *(optional)* then **labelFor** *(optional)* then **extension** *(optional)*
**type**

Specifies the type of area, for example, the legend.

**Content model**
Content type is string.

**Parent elements**
area

**type**

Specifies the type of parameter.

**Content model**
Content type is string.

**Parent elements**
parameter

**underline**

Specifies the font style is underline.

**Content model**
Content type is boolean.

**Parent elements**
fontStyle

**units**

Specifies the unit of measurement for the size.

**Content model**
Content type is string.

The possible values of this element are restricted to the following.

**PX**

The unit of measurement is pixels.
PERCENT
The unit of measurement is percent.

CM
The unit of measurement is centimeters.

MM
The unit of measurement is millimeters.

IN
The unit of measurement is inches.

PT
The unit of measurement is points.

PC
The unit of measurement is picas.

EM
The unit of measurement is ems.

EX
The unit of measurement is ex.

Parent elements
bottom, height, indent, kashidaSpace, left, right, size, top, width

url
Specifies an absolute URI path to an image file.

Content model
Content type is string.

Parent elements
drill, img

text
Specifies an absolute URI path to a chart image file.

Content model
Content type is string.

Parent elements
cht

URLParameters
Reserved.
use

Specifies the values used by the prompt object. These values can be different than the ones that are rendered to the user.

**Content model**

Content type is string.

**Parent elements**

child, max, min, sval

val

Specifies the raw value used to render the text frame contents.

**Content model**

Content type is string.

**Parent elements**

txt

val

Specifies the number of units that specifies the size.

**Content model**

Content type is double.

**Parent elements**

bottom, height, indent, kashidaSpace, left, right, size, top, width

val

Contains the custom HTML from the resource.

**Content model**

Content type is string.
**valErrorState**

Specifies the error that caused the cell to be empty.
If the value is **OK**, the cell should not contain any data.

**Content model**
Content type is string.
The possible values of this element are restricted to the following.

- **OK**
  - The cell should appear empty, there is no error.

- **NULL**
  - The error is NULL.

- **NA**
  - The error is not applicable.

- **DIV0**
  - The error is division by zero.

- **OVERFLOW**
  - The error is overflow.

- **SECURITY**
  - The error is security.

- **CASTING**
  - The error is casting.

- **OTHER_ERROR**
  - Specifies an error not listed above.

**Parent elements**
`txt`

---

**vAlign**

Specifies the vertical alignment.

**Content model**
Content type is string.
The possible values of this element are restricted to the following.

- **TOP**
  - The top of the element is aligned with the top of the tallest element on the line.
The element is placed in the middle of the parent element.

The bottom of the element is aligned with the lowest element on the line.

Aligns the element as it was superscript.

Aligns the element as it was subscript.

The top of the element is aligned with the top of the parent element's font.

The bottom of the element is aligned with the bottom of the parent element's font.

Reserved.

Raises or lower an element as a percentage of the normal line height. Negative values are allowed.

Align the baseline of the element with the baseline of the parent element. This is default.

Specifies the text frame data value type.

Content type is string.

The possible values of this element are restricted to the following.

The text frame data value type is date.

The text frame data value type is time.

The text frame data value type is datetime.

The text frame data value type is number.

The text frame data value type is currency.
percent
The text frame data value type is percent.

text
The text frame data value type is text.
timeInterval
The text frame data value type is time interval.

Parent elements
txt

value
Specifies the value in the name/value pair of a parameter.

Content model
Content type is string.

Parent elements
parm

value
Contains an enumeration of possible secondary operations.

Content model
Content type is string.

The possible values of this element are restricted to the following.
FORWARD
Can move to next prompt page.
BACK
Can move to previous prompt page.
FINISH
Can finish prompt collection.
LAST
Can move to last report page.
NEXT
Can move to next report page.
PREVIOUS
Can move to previous report page.
DRILL
Can drill up or down.
FIRST
Can move to the first prompt page.

EXTENSION
Reserved.

RELEASE
Can release the session.

Parent elements
secondaryOperations

versionBase
Specifies the location of the saved output.
The existence of this element in a report output indicates that the report output came from a saved version of the report.

Content model
Content type is string.

Parent elements
document, filterResultSet

verticalSize
Specifies the number of repeater table rows per column.

Content model
Content type is int.

Parent elements
reptbl

widget
Specifies an IBM Cognos Business Insight widget object.

Content model
id (optional) then title (optional) then ref (optional) then style (any number) then widgetURI then annURL (optional) then extension (optional)

Parent elements
item, reportElement
widgetURI

Specifies the url of a Web page widget.

Content model

Content type is string.

Parent elements

widget

width

Specifies the width of the border or box.

Content model

val then units then extension (optional)

Parent elements

bottom, boxStyle, left, right, top

wordBreak

Specifies whether word breaking is enabled.

Content model

Content type is boolean.

Parent elements

textStyle

wordBreakStyle

Specifies the Reporting word break style.

Content model

Content type is string.

The possible values of this element are restricted to the following.

NORMAL

Specifies the Normal word break style.

BREAK_ALL

Specifies the Break All word break style.

KEEP_ALL

Specifies the Keep All word break style.
**wrapping**

Specifies whether word wrapping is enabled. When true, word wrapping is enabled.

**Content model**

Content type is boolean.

**Parent elements**

textStyle

**writingMode**

Specifies the writing mode for the style. This is used for some Asian language styles.

**Content model**

Content type is string.

The possible values of this element are restricted to the following.

**LEFT_TO_RIGHT_TOP_TO_BOTTOM**

The writing mode is from left to right, and top to bottom on the page.

**TOP_TO_BOTTOM_RIGHT_TO_LEFT**

The writing mode is from right to left, and bottom to top on the page.

**Parent elements**

textStyle

**x**

Specifies the x coordinate of the chart area.

**Content model**

Content type is int.

**Parent elements**

coord

**y**

Specifies the y coordinate of the chart area.
Content model
Content type is int.

Parent elements
coord
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