IBM Cognos Analytics Version 11.0

Managing User Guide



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Product Information

This document applies to IBM Cognos Analytics version 11.0.0 and may also apply to subsequent releases.

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Chapter 1. Managing accounts

In IBM[®] Cognos[®] Analytics, you can manage user authentication and access to content and product features.

The administrator that configures your Cognos Analytics application does the initial security setup. This setup includes configuring authentication providers to take advantage of the existing security infrastructure in your organization. Each authentication provider that is configured for use with Cognos Analytics is referred to as a namespace or an external namespace.

In addition to namespaces that represent the external authentication providers, IBM Cognos Analytics has a built-in, internal namespace that is named **Cognos**. The **Cognos** namespace simplifies the process of managing access permissions and deploying content.

Cognos Analytics can also be configured for anonymous access where users are not required to provide user ID and password to access the application. For information about enabling anonymous access, see the *IBM Cognos Analytics Installation and Configuration Guide*.

Important : Your environment might have a large number of users. As a best practice, the users should be grouped into folders, and each folder should contain a maximum of 1000 users.

The **Users, Groups, and Roles** administration capability is required to manage accounts. For more information, see the section about secured functions and features in the *IBM Cognos Analytics Administration and Security Guide*.

The Cognos namespace

The Cognos namespace includes predefined objects to help you quickly set up initial security.

You use the predefined objects and other features of the Cognos namespace for ongoing security management.

The **Cognos** namespace can contain users, groups and roles. A group is a collection of users. Members of groups can be users and other groups. A role is a collection of capabilities that identify the tasks that a user can perform. Members of roles can be users, groups, and other roles. A user can belong to several groups or roles. When a user is a member of more than one group, access permissions are merged.

The following diagram shows the structure of groups and roles in the Cognos namespace.



Figure 1. Structure of groups and roles

You can create groups and roles in the **Cognos** namespace. The ability to create users in the **Cognos** namespace is available only if the **Easy install** option was used to install IBM Cognos Analytics.

Predefined and built-in objects in the Cognos namespace

Initial access permissions are applied to all predefined objects. You can modify the permissions from the object properties.

Anonymous

This user is for the initial configuration where anonymous access is enabled and users are not prompted to provide credentials. When anonymous access is disabled in Cognos Configuration, a user logs in using their own credentials.

All Authenticated Users

This group represents users who are authenticated by authentication providers. The membership of this group is maintained by the product and cannot be viewed or altered.

Everyone

This group represents all authenticated users and the Anonymous user account. The membership of this group is maintained by the product and cannot be viewed or altered. You can use the Everyone group to set default security quickly. For example, to secure a report, you grant read, write, or execute permissions to the report for the Everyone group. After this security is in place, you can grant access to the report to other users, groups, or roles, and remove the group Everyone from the security policy for this report.

Analysis Users

Members of this role have the same access permissions as Consumers. They can also use the IBM Cognos Analysis Studio.

Analytics Administrators

Members have the same access permissions as Analytics Explorers. They can also access:

Manage > Data Server Connections

- Data source connections in the Administration Console
- IBM Cognos Software Development Kit.

This role is available only after a custom installation.

Analytics Explorers

Members have the same access permissions as Analytics Users. They can also access Cognos Analysis For Microsoft Excel, Cognos Framework Manager, Cognos Cube Designer and Dynamic Query Analyzer, Transformer, and TM1 Writeback to bundled FLBI TM1 server.

This role is available only after a custom installation.

Analytics Users

Members have the same access permissions as the Information Distribution members. They can create new reports, dashboards, stories, new jobs, data server connections, or data modules. They can execute reports, respond to prompts, upload files. They can also access Cognos for Microsoft Office, Cognos Workspace, Cognos Insight, Cognos Event Studio, Cognos Query Studio, and Cognos Analysis Studio

This role is available only after a custom installation.

Authors

Members of this role have the same access permissions as Query Users and Analysis Users. They can use Reporting, Query Studio, and Analysis Studio, and save public content, such as reports and report outputs.

Consumers

Members of this role can read and execute public content, such as reports.

Directory Administrators

Members of this role can administer the contents of namespaces. In the Cognos namespace, they administer groups, accounts, contacts, distribution lists, data sources, and printers.

Information Distribution

Members have the same access permissions as Query Users and Analysis Users. They can use Reporting, Query Studio, and Analysis Studio, and save public content, such as reports and report outputs.

This role is available only after a custom installation.

Library Administrators

Members of this role can access, import, and administer the contents of the **Library** tab in IBM Cognos Administration.

Mobile Administrators

Members of this role can administer IBM Cognos Mobile applications.

Mobile Users

Members of this role can access IBM Cognos content, such as reports, through IBM Cognos Mobile applications.

Modelers

Members of this role have access to the web-based modeling capabilities.

Portal Administrators

Members of this role can administer the Cognos portlets and other portlets. This includes customizing portlets, defining portlet styles, and setting access permissions for portlets.

PowerPlay Administrators

Members of this role can administer the public content, for which they have full access. They can also administer and use IBM Cognos PowerPlay.

PowerPlay Users

Members of this role have the same access permissions as Consumers. They can also use IBM Cognos PowerPlay.

Query Users

Members of this role have the same access permissions as Consumers. They can also use the IBM Cognos Query Studio.

Readers

Members of this role have read-only access to IBM Cognos software. They can navigate some portions of the content store, view saved report outputs in the portal, and use some report option such as drill-through.

Report Administrators

Members of this role can administer the public content, for which they have full access. They can also use IBM Cognos Analysis Reporting and IBM Cognos Query Studio.

Server Administrators

Members of this role can administer servers, dispatchers, and jobs.

System Administrators

Members of this role are considered root users or super users. They may access and modify any object in the content store, regardless of any security policies set for the object. Only members of the System Administrators role can modify the membership of this role.

The initial configuration for this role includes the Everyone group. You must modify the initial security settings for this role and remove the group Everyone from its membership. If you do not change the initial configuration, all users have unrestricted access to the content store.

Tenant Administrators

Members of this role can perform tenant administration tasks. This role is used in a multitenant IBM Cognos environment. In the initial configuration, this role has no members and capabilities. Only System Administrators can add members and assign access permissions and capabilities for this role.

Standard roles

The table in this section lists the predefined standard Cognos roles.

Another type of role is a license role. Based on license entitlements, there are four license names: **Analytics Administrator**; **Analytics Explorer**; **Analytics User**; and **Information Distribution**. For more information, see "License roles" on page 40.

Table 1. Predefined Cognos standard roles			
Standard role	Description		
Analysis Users	Members have the same access permissions as Consumers. They can also use the IBM Cognos Analysis Studio.		
Authors	Members have the same access permissions as Query Users and Analysis Users. They can use Reporting, Query Studio, and Analysis Studio, and save public content, such as reports and report outputs.		
Consumers	Members can read and execute public content, such as reports.		
Directory Administrators	Members can administer the contents of namespaces. In the Cognos namespace, they administer groups, accounts, contacts, distribution lists, data sources, and printers.		
Library Administrators	Members can access, import, and administer the contents of the Library tab in IBM Cognos Administration.		
Mobile Users	Members can access IBM Cognos content, such as reports, through IBM Cognos Mobile applications.		
Mobile Administrators	Members can administer IBM Cognos Mobile applications.		
Modelers	Members can use the modeling user interface to create and manage data modules.		
Portal Administrators	Members can administer the Cognos portlets and other portlets. This includes customizing portlets, defining portlet styles, and setting access permissions for portlets. Portal administrators can also upload extensions that allow users, for example, to add images to reports or dashboards.		
Planning Contributor Users	Members can access the Contributor Web client, Contributor Add-in for Microsoft Excel, or Analyst.		
Planning Rights Administrators	Members can access Contributor Administration Console, Analyst, and all associated objects in the application.		
Query Users	Members have the same access permissions as Consumers. They can also use the IBM Cognos Query Studio.		
Readers	Members have read-only access to IBM Cognos software. They can navigate some portions of the content store, view saved report outputs in the portal, select cells in saved report outputs in Cognos Viewer, and use Cognos Viewer context menu to perform actions, such as drill-through.		
Report Administrators	Members can administer the public content, for which they have full access. They can also use IBM Cognos Analytics - Reporting and IBM Cognos Query Studio.		
Server Administrators	Members can administer servers, dispatchers, and jobs.		

Table 1. Predefined Cognos standard roles (continued)			
Standard role Description			
System Administrators	Members can access and modify any object in the content store, regardless of any security policies set for the object. Only members of the System Administrators role can modify the membership of this role.		

Creating and managing groups and roles

You can create new groups and roles in the **Cognos** namespace. These roles are not dependent on the authentication providers and can be managed only in IBM Cognos Analytics.

You can add users, groups, or roles from multiple external namespaces and from the Cognos namespace as members of the Cognos groups and roles.

Before you begin

When you plan to add entries from multiple namespaces as members of the Cognos groups and roles, log on to each namespace before you start this task.

About this task

When you delete a Cognos group or role, users' access permissions based on it are no longer active. You cannot restore access permissions by creating a group or role with the same name.

You need the **Users, Groups, and Roles** administration capability to manage accounts. For more information, see the section about secured functions and features in the *IBM Cognos Analytics Administration and Security Guide*.

Procedure

- 1. Click Manage > Accounts.
- 2. Click the **Cognos** namespace to open it.
- 3. Click the new group 22+ or new role + icon, type a unique name for it in the space that is provided, and press the enter key. The group or role is added to the list of entries in the Cognos namespace.

Tip : You can also create groups and roles within folders. Click the new folder 🛨 icon to create a new folder.

- 4. Add members to the new group or role in the following way:
 - a) Locate the new group or role in the Cognos namespace. To quickly find the entry, click the search

 $\mathbf{Q}_{\mathsf{i}\mathsf{con}}$ or click the filter $\overline{\mathcal{V}}$ icon to narrow the view of entries.

- b) From the group or role context menu 🛄, click **View members**, and click the add member 🛨 icon.
- c) In the **Add members** panel, click the required namespace and locate the user, group, or role that you want to add. You can add members from any namespace or multiple namespaces that you are logged in to. If necessary, use the search and filter functions to find the user, group, or role to add.
- d) Select the required users, groups, or roles. You can control-select multiple entries. Click **OK**. The selected entries are displayed on the **Members** tab.
- e) If you want to continue adding members to your group or role, click the add member icon on the **Members** tab, and repeat steps c and d. To remove a member, point to its name, and click the remove icon.

f) Close the properties panel.

The group or role now includes members. It can also be added to another group or role.

What to do next

The group and role context menus provide options to manage these entries. In **Properties**, on the **Permissions** tab, you can set access permissions for the groups and roles. The **View members** option allows you to add or remove members of a group or role, and the **Add to** option allows you to add the entry to another group or role, or to a folder. To delete the group or role, use the **Delete** option.

Creating and managing users

You can create users in the **Cognos** namespace if the **Easy install** option was used to install IBM Cognos Analytics.

Procedure

- 1. Click Manage > Accounts.
- 2. Click the **Cognos** namespace to open it.
- 3. Click the new user $\stackrel{Q_+}{\longrightarrow}$ icon, and in the **New user** dialog box, type the required information, including the user ID and password. Click **OK**.

The user name is added to the list of entries in the Cognos namespace. You can now add the user to a folder, group, or role. The user can log on to IBM Cognos Analytics with the user ID and password that you assigned for him or her.

What to do next

The user context menu provides options to manage the user entry. In **Properties**, on the **General** tab in the **Advanced** properties section, you can change the user password. Also in **Properties**, on the **Permissions** tab, you can set access permissions for the user. The **Add to** option allows you to add the user to a group, role, or folder. To delete the user, use the **Delete** option.

Customizing roles

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If you are using the roles that are predefined in the Cognos namespace, you can customize themes, home pages, and report parameters that are unique to each Cognos role.

Note : Only Cognos roles are customizable. You cannot customize a role unless it belongs to the Cognos namespace - as either a predefined Cognos role, or one that you created yourself. For more information about Cognos roles, see the *IBM Cognos Analytics Administration and Security Guide*.

You can specify that a customized home page, or a particular report or dashboard, be displayed when a user with a particular Cognos role opens IBM Cognos Analytics. You may want to remove default user interface features for roles. In addition, you can customize parameters that can be used across reports and tailor them for each user role.

Before setting customized themes and home pages (other than a dashboard or report) you must have created and uploaded custom themes or home pages. For more information, see <u>Chapter 8</u>, "Customizing Cognos Analytics across all roles," on page 55.

To customize individual roles, from **Manage** > **Accounts**, click a namespace to view the list of roles for the namespace. If you click a role, the slide-out panel for that role has a **Customization** tab.

Note : If you want to set customizations across all roles, you use the **Managing** > **Customization** slide-out panel. For more information, see "Managing themes, extensions, views, and parameters" on page 79.

Setting a default home page

Click > next to the default home page. You can now browse for a dashboard or report to be the default home page, or you can select a view in the list of views to be the default home page for all users in this role.

Removing features

You can choose user interface features to remove for users in a role. Click > next to **Features**. A list of views is displayed. This list includes both the built-in views and any custom views that have been

uploaded. Click a view to see a high-level grouping of features for the view. Click > next to a grouping to drill-down to a lower level of features. You can deselect any features in this list, or drill-down to another set of features to deselect. Click **Apply** to save your changes. You can revert your changes by clicking **Reset to defaults**.

Setting a default theme

Click > next to the default theme. You can select a theme in the list of themes to be the default theme for all users in this role.

Creating a custom folder

11.0.6

Click > next to **Custom folder** to set a custom content folder for users who have this role. When a user with this role logs in, the custom folder is displayed on the navigation bar below **Team content**.

Setting default parameters for roles

11.0.7

Click **Settings** next to **Parameters**. A list appears of <u>parameters that you customized</u>. Choose the parameters that you want to configure for the role. Then select the default values that you want to appear for all users in this role. Click **Apply** then **OK** when you are done.

For more information, see Using customized parameters in *Reporting*.

Resolving conflicts when a user has multiple roles

A user may have multiple roles which can have different default themes or home pages. To resolve this issue, when setting customizations for a role, click **Advanced** and set a priority for the role ranging from 0 to 10. In the case of a conflict the customizations for the role with the highest priority are used. The **System Administrators** role has a hard-coded priority of 1000.

Authentication providers

User authentication in IBM Cognos Analytics is managed through authentication providers. Authentication providers define users, groups, and roles that are used for authentication. User names, IDs, passwords, regional settings, personal preferences are some examples of information stored in the providers.

In the Cognos Analytics user interface, authentication providers are represented by namespaces 🔀.

Cognos Analytics supports the following types of authentication providers:

- Active Directory
- OpenID Connect
- Custom Java Provider
- OpenID Connect Authentication Proxy

- IBM Cognos Series 7
- LDAP
- SAP
- SiteMinder

Authentication providers are configured in IBM Cognos Configuration, under the **Security** > **Authentication** category. After the provider namespace is added there, and the **IBM Cognos** service is restarted, the namespace name is displayed in **Manage** > **Accounts**, and users can log on to Cognos Analytics using that namespace. For more information about configuring authentication providers, see the *IBM Cognos Analytics Installation and Configuration Guide*.

You cannot create users, groups, or roles in authentication providers' namespaces from Cognos Analytics. However, you can add users, groups, and roles from these namespaces to groups and roles in the **Cognos** namespace.

Multiple namespaces

If multiple namespaces are configured for Cognos Analytics, at the start of a session you must select one namespace. However, this does not prevent you from logging on to other namespaces later in the session. For example, if you set access permissions, you may want to reference entries from different namespaces. To log on to a different namespace, you do not have to log out of the namespace that you are currently using. You can be logged on to multiple namespaces simultaneously.

Your primary logon is the namespace and the credentials that you use to log on at the beginning of the session. The namespaces that you log on to later in the session, and the credentials that you use to do that, become your secondary logons.

When you delete one of the namespaces, you can log on using another namespace. If you delete all namespaces except for the Cognos namespace, you are not prompted to log on. If anonymous access is enabled, you are automatically logged on as an anonymous user. If anonymous access is not enabled, you cannot access the logon page. In this situation, use Cognos Configuration to enable anonymous access.

Managing OpenID Connect namespaces

Use the **OpenID Connect** namespace type to implement OpenID Connect authentication for IBM Cognos Analytics.

Cognos Analytics supports the following OpenID Connect identity providers. This list may expand over time:

11.0.6 and later

IBMid

11.0.7 and later

Okta

Google

ADFS (Active Directory Federation Services)

Azure AD (Active Directory)

Salesforce

PingFederate

Site Minder

IBMid is the IBM Identity Service, a cloud-based identity access and management solution that provides identity and single sign-on services for IBM applications.

After an OpenID Connect namespace is configured in IBM Cognos Configuration, all OpenID Connect users have access to Cognos Analytics. When the users log on, their names are automatically shown in the namespace.

Note : To set up an OpenID Connect namespace successfully, ensure that the Content Manager computer can access the OIDC IDP (Identity Provider). In some cases, if there is a proxy between the Content Manager and the IDP, Content Manager will not be able to connect.

As a system administrator, you might need to restrict the number of users who can access the product based on the number of licenses or other factors. To do that, perform the following optional steps:

• Add a limited number of users to the **OpenID Connect** namespace.

See step"3" on page 9 below.

• Add groups to the **OpenID Connect** namespace.

See step "4" on page 9 below.

• Add the OpenID Connect users to groups or roles in the Cognos namespace.

By using the **Cognos** groups and roles, you can quickly assign the required access permissions for different users.

• In IBM Cognos Configuration, under Security > Authentication, set the Restrict access to members of the built-in namespace property to true.

Only members of the built-in **Cognos** namespace can now access Cognos Analytics.

Procedure

- 1. Log on to IBM Cognos Analytics as a system administrator.
- 2. Log on to the **OpenID Connect** namespace.
- 3. To add user accounts to the **OpenID Connect** namespace:
 - a) Navigate to Manage > People > Accounts, and open the OpenID Connect namespace.
 - b) To add an individual user account, follow these steps:
 - Click the New user icon 斗.

The **Add users** panel appears.

• Enter a unique name in the **Unique identifier** field.

For example, enter the user's email address.

- In the **Preferred Name** field, enter the name that you want to appear in the namespace list.
- Click Add.

The **Preferred Name** value appears in the namespace list.

- c) To add multiple user accounts at once, you can import a .csv file specially formatted with account information:
 - Ensure that you created the .csv file that contains your user information.

For more information, see "Creating a .csv file containing user account information" on page 10.

- Click the Import icon 🔨 and then select **Import users**.
- Double click the .csv file that has the user information.

The file is uploaded and the defaultName values from the .csv file are listed in the OpenId Connect namespace.

The same .csv file can be imported many times. If a defaultName value already exists in the namespace, the user account is updated. You can also repeat the import if previously imported entries look incorrect.

Repeat this step for other files, if you have multiple files.

- 4. To add groups to the **OpenID Connect** namespace:
 - a) Navigate to Manage > People > Accounts, and open the OpenID Connect namespace.

- b) To add individual groups, follow these steps:
 - Click the New group icon
 - Enter the name of the new group.

The group name is listed in the namespace.

- c) To add multiple groups at once, you can import a .csv file specially formatted with group information:
 - Ensure that you created the .csv file that contains your group information.

For more information, see <u>"Creating a .csv file containing group information" on page 11</u>.

- Click the Import icon 🕅 and then select **Import groups**.
- Double click the .csv file that has the group information.

The file is uploaded and the defaultName values from the .csv file are listed in the OpenId Connect namespace. The same .csv file can be imported many times. If a group already exists in the namespace, the group is updated. You can also repeat the import if previously imported entries look incorrect.

Repeat this step for other files, if you have multiple files.

- 5. Add the **OpenID Connect** users to groups or roles in the **Cognos** namespace.
 - a) Open the **Cognos** namespace, and find the group or role to which you would like to add users from the **OpenID Connect** namespace.
 - b) From the group or role context menu 🔄, select **View members**.
 - c) Click + Select.
 - d) In the **Add members** panel, select your **OpenID Connect** namespace, and then select the appropriate users. You can select multiple users at once.
 - e) Click Add. The selected users are displayed on the Members tab.
 - f) Repeat the steps to add the **OpenID Connect** users to other **Cognos** groups or roles.
 - g) To import users from a .csv file, click **Import**, and select the file. For more information, see "Creating a .csv file containing user account information" on page 10.

The same .csv file can be imported many times. If a user account already exists in the namespace, the account is updated. You can also repeat the import if previously imported entries look incorrect.

Repeat this step for other files, if you have multiple files.

6. Delete an entry by clicking **Delete** in the context menu next to the specific group, role, or folder.

Results

Users who use the **OpenID Connect** namespace to log on to Cognos Analytics are redirected to an external logon page where they can type their credentials. If the credentials are accepted, the users can access Cognos Analytics.

Creating a .csv file containing user account information

The .csv file that contains the list of users to be imported into the OpenID Connect namespace must be properly formatted for the import to be successful.

The first row in the file is the header. This row must contain the email column, and can contain the following, optional columns: defaultName, businessPhone, faxPhone, givenName, homePhone, mobilePhone, pagerPhone, postalAddress, surname, userName.

Tip : All of the column names are properties of the account class in IBM Cognos Analytics. The names are case sensitive, and must be typed exactly as specified in this document.

All other rows in the file contain values corresponding to the columns specified in the first row.

Here is an example of a .csv file with two users:

- Row 1: email, defaultName, givenName, surname
- Row 2: Andy.Bergin@ca.ibm.com,Andy Bergin,Andy,Bergin
- Row 3: Kirsten.Vaughan@ca.ibm.com,Kirsten Vaughan,Kirsten,Vaughan

You can add all your users to one .csv file, or you can create multiple files with fewer names in each file.

After the file is imported, the defaultName for the user is set in the following way:

- If defaultName is specified in the .csv file, the name is used.
- If defaultName is not specified in the .csv file, but givenName and surname are specified, the default name is set as givenName surname.
- If defaultName, givenName, and surname are not specified, the email is used as the default name.

Multiple users can have the same first and last names. To avoid potential conflicts, specify a different defaultName for the users, or do not specify surname and givenName for them. You can also modify the surname by adding a unique character or number to it, such as Simpson1 or Simpson2.

Note : Properties are automatically updated from the namespace provider when the user logs in. Therefore, if the namespace supports properties such as timeZone or localePreference, they are saved in the account proxy when the user logs in.

Creating a .csv file containing group information

A group .csv file contains the list of groups to be imported into the OpenID Connect namespace. This file must be properly formatted for the import to be successful.

The first row in the group .csv file is the header. This row must contain both the type and defaultName columns. The header row can also contain the following, optional column: tenantID.

Tip : All of the column names are properties of the group class in IBM Cognos Analytics. The names are case sensitive, and must be typed exactly as specified in this document.

All other rows in the file contain values corresponding to the columns specified in the first row.

Here is an example of a .csv file with two groups:

- Row 1: type, defaultName
- Row 2: group, Reviewers
- Row 3: group, Data-Scientists

You can add all your groups to one .csv file, or you can create multiple files with fewer groups in each file.

Finding users, groups, and roles

As an administrator, you often need to locate the users, groups, or roles that you manage.

In the **Namespaces** view in **Accounts**, you see all namespaces that are configured for use with IBM Cognos Analytics, and the **Cognos** namespace. You can navigate only the namespaces that you are logged in to, and the **Cognos** namespace.

Searching for entries

A namespace might contain thousands of users and numerous groups, roles, and folders, and the only way to find these entries is by using the search capability in **Accounts**. You must search for entries in one

namespace at a time so you need to select the namespace first, and then click the search 🔍 icon. The search is also used when you add members of groups and roles, specify access permissions, and so on.

Filtering entries

You can filter on users, groups, and roles to narrow your view of entries. When using with search, specify the filter criteria for faster response. Click the filter $\overrightarrow{\gamma}$ icon, and select or clear the filter options.

Chapter 2. Managing content

The most common reasons for you to backup and restore content are when you want to move content from a test environment to a production environment as part of the application development process, or to prepare to upgrade to a new version of the product.

The Configure and manage the system administration capability is required to manage content.

Deployment planning

The process of backing up and restoring content is called a deployment. For security settings to work when you deploy content, the source environment and the target environment must use the same namespaces for policies, users, roles, and groups to work correctly. The Cognos namespace is included when you create a backup. Ensure that the other required namespaces are configured in the target environment before restoring the content.

If the deployment is part of an upgrade, before you create a backup you can run a consistency check to find and fix inconsistencies within the content store or between the content store and external namespaces. You run a consistency check from the **Administration console** > **Configuration** > **Content administration** > **New consistency check**.

Backing up content

To protect sensitive information, all backups are encrypted. When you restore the content, you must provide the password set when the backup was created.

The backup is saved as an archive file (.zip) in the **Deployment files location** specified in Cognos Configuration. The default location is *install_location*\deployment. To deploy the content store in a different instance of IBM Cognos Analytics, such as the computer used for the production environment, copy the archive file to the deployment files location on the target computer to make the file available to restore.

A backup includes the following content.

- public folders
- packages
- reports
- data sources
- distribution lists and contacts
- printer configuration
- access permission settings
- the Cognos namespace
- deployment specifications

Personal entries for each user, such as reports and folders from the user's **My Content**, are not included in the backup.

Restoring content

To restore content, the backup file you want to use must be in the **Deployment files location** specified in Cognos Configuration. The default location is *install_location*\deployment. You must provide the password that was set when the backup was created.

When you restore content, the contents of the target content store are removed and replaced by the contents of the source content store.

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Chapter 3. Data server connections

A data server defines the physical connection to a database.

The data server connection specifies the parameters needed to connect to the database, such as the location of the database and the timeout duration. A data server connection can include authentication information.

IBM Cognos Analytics supports multiple relational and OLAP data sources. The list of supported data source types might change from release to release. For information about the currently supported data sources, see the <u>Supported Software Environments</u> (www.ibm.com/support/docview.wss? uid=swg27047186) website.

If you include database authentication information, such as Cognos Analytics credentials or a signon for the connection, users need not enter database authentication information each time the connection is used. The signon that is produced when you create a data server connection is by default available to the **Everyone** group. You can modify the signon permissions from the properties of the data server connection.

Creating a data server connection

A data server connection specifies the parameters that are needed to connect to the database that the connection represents.

Each data server can have one or more connections. The connection names must be unique.

Before you begin

Most data server connections require a database vendor-supplied JDBC driver. Use a version of the JDBC driver that is compatible with Java[™] Runtime Environment version 8. Copy the driver to the Cognos Analytics *installation_location*\drivers directory, and restart the query service. Restarting the full **IBM Cognos** service is not necessary.

To create data server connections, you need the **Data Source Connections** administration capability. For more information, see the *IBM Cognos Analytics Administration and Security Guide*.

About this task

The **Manage** > **Data server connections** user interface does not have the required controls to define the following connection features:

- Connection command blocks
- Db2 LUW, Db2 for z/OS, dashDB, IBM Big SQL trusted connections
- Db2 for z/OS identity propagation
- ORACLE lightweight connections (command blocks are required)

To define connections that include these features, use the **Administration console**. For more information, see the *IBM Cognos Analytics Administration and Security Guide*.

Procedure

- 1. Click Manage > Data server connections.
- 2. In the **Data server connections** pane, click the **Add data server** icon \bigoplus .
- 3. Select the data server type from the list of supported types.
- 4. In the field New data server connection, type a unique name for the connection.

5. Beside **Connections details**, click **Edit** and enter the connection details for the type of connection that you are creating.

For most connections, you must specify the JDBC URL. You can view the syntax and example URL under connection details. You might need to ask the database administrator for more details, or check the database vendor documentation.

In the **Connection properties** box, type the supported property name. For information about the supported JDBC properties, see "Cognos-specific connection parameters" on page 16.

For **Planning Analytics** connections, specify the TM1 database host and HTTP port number. To use an SSL connection, select the **Use SSL** check box.

6. Under Authentication method, specify how to access the data server.

You can select one of the following options.

Connect anonymously or Integrated security

Choose the **Connect anonymously** option when anonymous access to the data server is allowed.

Choose the **Integrated security** option when the TM1 database is configured for Integrated Security mode 4 or 5. This option is applicable for **Planning Analytics** connections only.

Prompt for the user ID and password

Choose this option when the user must be prompted for database credentials with each use.

Use the IBM Cognos Analytics credentials

Choose this option to pass the same credentials to the data server that are used to authenticate to Cognos Analytics.

Use the following signon

Choose this option to assign a signon for the connection. Select a signon from the drop-down list or

create a new signon by clicking the add icon . In the **New data server connection** window on the **Credentials** tab, type a user ID and password. To restrict the signon to particular users, roles,

or groups, on the **Permissions** tab, click \bigoplus and specify the access permissions for the signon.

7. Click **Test** to verify that the data server connection works, and then click **Save** to save the new data server connection.

Results

The new connection name is displayed in the **Data server connections** pane. To edit the data server connection, including adding or modifying its signon, click the connection name.

Cognos-specific connection parameters

You can specify some optional, Cognos-specific parameters for JDBC connections.

You can specify these parameters when creating or updating JDBC connections for data sources in IBM Cognos Administration or IBM Cognos Framework Manager, or when creating or updating data server connections in the **Manage** > **Data server connections** administration interface in IBM Cognos Analytics version 11.0.x.

In different connection editors, these parameters can be specified as **Connection properties** or **JDBC Connection Parameters**.

ibmcognos.fetchBufferSize

This parameter is used to set the JDBC driver fetch size for data source connections in IBM Cognos Analytics.

When the dynamic query mode in IBM Cognos Analytics executes queries by using JDBC, the fetch size value that is passed to a JDBC driver is calculated dynamically. Support for fetch sizes depends on database vendors. The vendors also decide what the fetch size means, and what the fetch size is when it is used internally in the driver and server. For more details, refer to your vendor's JDBC documentation.

The dynamic query mode computes a value for a query by using the following formula: maximum((bufferSize / 'row-size'), 10)

The default value for buffer size is 100 kilobytes (KB). The row size is computed from the size of the columns that are projected by the result set in a query. Queries that project columns with large precision or project many columns use a smaller fetch size than those projecting fewer columns or columns with smaller precision.

If the retrieval of a result set can be significantly improved by using a larger buffer size, a Cognos administrator can specify the connection property **ibmcognos.fetchBufferSize**. The dynamic query mode automatically adjusts the value if it is lower than 10 kilobytes or greater than 10 megabytes.

If ibmcognos.fetchBufferSize > 1024 * 10240 then bufferSize = 1024 * 10240

If ibmcognos.fetchBufferSize < 10240 then bufferSize = 10240

Larger fetch sizes are not always recommended because they can potentially increase the memory consumption by the JDBC driver and not lead to improved performance. Always review the database vendor documentation and recommended practices before using large values for the **ibmcognos.fetchBufferSize** property.

ibmcognos.decfloat

When this parameter is specified, the dynamic query mode is directed to use a decimal float type, DECFLOAT 128, which accurately represents values with precision of up to 34 digits. When a column with large precision is detected, it is internally changed to DECFLOAT and the data type in the model or report is described as DECIMAL(0,0).

To enable this feature, specify the connection parameter **ibmcognos.decfloat=true** for the database connection that is used by the dynamic query mode. In existing models, the columns must be remapped to DECIMAL(0,0) instead of double.

For the dynamic query mode to read the rows that are returned by a query, the JDBC driver must return the column values using a specific Java data type. In previous releases, it was possible for a database such as ORACLE to return a numeric column where the precision caused dynamic query to use the double data type. When the values that were returned by a query had precision greater than 16 digits, the conversion could result in an inaccurate value.

For example, if an ORACLE column was defined as NUMBER (without stating precision), or an aggregate such as SUM was computed that ORACLE returned as a NUMBER, the returned value of 1234567890123456789 might be converted to the value of 1.23456789012345677E18. The two values are not the same.

If the database does not return large values, do not use this parameter and ensure that the models do not include columns with the DECIMAL(0,0) data type. This allows the dynamic query mode to use a data type that requires less memory than the DECFLOAT type.

ibmcognos.qualifier_list

This parameter is used to disambiguate metadata when dynamic queries are executed. It assigns a list of one or more qualifiers to data sources that are defined in IBM Cognos Analytics.

The following examples show the syntax to use when specifying the **ibmcognos.qualifier_list** parameter, and the values that can be assigned for it:

- ibmcognos.qualifier_list=CATALOG1.SCHEMA1, CATALOG2.SCHEMA2
- ibmcognos.qualifier_list=SCHEMA1, SCHEMA2
- ibmcognos.qualifier_list=CATALOG1.SCHEMA1, SCHEMA2
- ibmcognos.qualifier_list=CATALOG1, CATALOG2

A period in the qualifier is used to separate the catalog and schema components. If no period is present and the database supports schemas, the value is treated as a schema. Otherwise, the value is treated as a catalog, if the database supports catalogs. The query service searches the list in the order specified, and uses the column metadata that it finds for the first qualifier that matches. If no match is found, an ambiguous metadata error is thrown.

The administrator should confirm that the list of qualifiers that are provided for this parameter is identical in order and content to any search list that the user's database session might have defined. The qualifier list is applied only when the session attempts to disambiguate metadata that is returned by a JDBC driver. Qualified names in dynamic SQL statements reflect the values assigned to catalog or schema properties that the package data source used during query planning.

ibmcognos.authentication

This parameter is used to configure data source connections when using Kerberos authentication.

For the different data source connection types, specify **ibmcognos.authentication=java_krb5**, and then add the properties that are required by the JDBC driver for Kerberos authentication, if they are required. The following examples show how to specify this parameter for some data source connections:

- For Teradata connections, specify ibmcognos.authentication=java_krb5;LOGMECH=KRB5;
- For SAP-HANA connections, specify ibmcognos.authentication=java_krb5;
- For Microsoft SQL Server connections, specify ibmcognos.authentication=java_krb5;authenticationScheme=JavaKerberos;

ibmcognos.maxvarcharsize

Dynamic query can use a larger default VARCHAR precision value than the default value that is supported by the database. This parameter is used to override the database default VARCHAR precision value for the dynamic query mode.

To specify this parameter, use the following syntax, where N is an integer value greater than zero that is supported by the database vendor:

ibmcognos.maxvarcharsize=N

The SQL standard uses the CLOB data type and the national character large object type (NCLOB) to hold large character values. Different databases support the CLOB data type or their own versions of this type with similar characteristics. The CLOB data type imposes several restrictions on the types of SQL constructs that can be used in queries. Also, database vendors might impose additional restrictions on how CLOB columns must be handled in the client interfaces, such as JDBC. To avoid CLOB-related restrictions, dynamic query mode automatically converts CLOB columns into VARCHAR columns by using the CAST function. As a result, the first N characters of the CLOB type are returned as VARCHAR to the dynamic query.

Tip : The automatic CAST function is not performed when a JDBC driver describes the column data type as a VARCHAR (Variable Character field) and not as a CLOB (Character Large Object) data type, and when the column reference has a user-specified CAST function surrounding it.

If the length of a CLOB in a row is larger than the CAST precision data, truncation occurs.

In some cases, a database vendor might support a larger precision if specific database configuration settings, such as page and row size, or server settings, are satisfied. If such preconditions are satisfied, a larger value can be specified on a data server connection. If the preconditions are not satisfied, when you use a value greater than the one that is supported by the database, the SQL statements fail to execute. Before using larger VARCHAR precision values, refer to the database vendor documentation, and verify the value with the database administrator.

Dynamic query uses the following default VARCHAR precision values for the different databases:

	Table 2. Default precision VARCHAR values in dynamic query mode		
Database		Default VARCHAR precision	
	Db2 iSeries	32739	

Table 2. Default precision VARCHAR values in dynamic query mode (continued)			
Database	Default VARCHAR precision		
Db2 ZSeries	4096		
Db2 LUW	8168		
Exasol	200000		
Informix Dynamic Server	255		
MariaDB	21845		
MemSQL	21845		
MySQL	65535		
Oracle	4000		
Pivotal Greenplum	200000		
PostgreSQL	200000		
SAP Hana	5000		
SQL Server	varchar(max)		
Teradata	32000		
Other vendors	1024		

If the ibmcognos.maxvarcharsize value is higher than the Java Integer max (2147483647), or not an integer at all, the value is ignored.

If the ibmcognos.maxvarcharsize value is lower than both the default 1024 and the vendor VARCHAR size, the lowest of these 2 values is used instead of the ibmcognos.maxvarcharsize value.

Preloading metadata from a data server connection

When a data server is specified as a source for a data module, metadata is loaded from the data server into the content store. This process can be time-consuming so you can preload metadata to speed up the process.

The preloaded metadata accelerates data modeling by allowing the system to intelligently specify default settings, such as **Usage** and **Aggregation**, based on metadata that is loaded.

Procedure

1. Click Manage > Data server connections.

The slide-out panel displays a list of data server connections.

- 2. In the **Data server connections** panel, click a data server connection, and then, on the **Connections** tab, click a connection name.
- 3. On the **Schemas** tab, click the **More** icon inext to a schema name to load data or to modify the load options.
- 4. Click **Load options** to modify how much data is loaded.

On the **Tables** tab, you can specify which tables are preloaded.

- 5. Click Load metadata to load metadata.
- 6. If the metadata for a schema is already loaded, click **Clear metadata** to remove the metadata from the content store.

Reference and troubleshooting

When creating and maintaining data server connections in IBM Cognos Analytics, you might encounter issues with JDBC drivers, data server version support, authentication, and so on.

The connection information is different for each type of data server. For more information, see the database vendor documentation.

Cloudera Impala JDBC drivers

IBM Cognos Analytics supports connections to Cloudera Impala data servers that use JDBC drivers version 2.5.34 and later. JDBC drivers earlier than 2.5.34 are not supported.

When attempting to connect to Cloudera Impala, the query engine checks the version of the JDBC driver. If the version is earlier than 2.5.34, an error message is returned.

To avoid potential issues, replace older versions of JDBC drivers for Impala in the Cognos Analytics environment with newer versions. The driver can be downloaded from the <u>Cloudera website</u> (www.cloudera.com/downloads/connectors/impala/jdbc/2-5-34.html). For more information, see Cloudera documentation.

Stalled queries in the Pivotal HDB engine

Queries might become stalled in the Pivotal HDB engine because of a defect in the Pivotal optimizer.

To resolve the problem, the Pivotal administrator can change the server defaults, or add the following command block for the connection in IBM Cognos Administration.

```
<commandBlock>
<commands>
<sqlCommand>
<sql>select disable_xform('CXformExpandNAryJoinDP')</sql>
</sqlCommand>
</commands>
</commandBlock>
```

If a table was created in HDB with partitioning, the Pivotal JDBC driver returns metadata for each partition of the table. Currently, there is no means in the Pivotal software to prevent it from returning the extra metadata. A modeler in IBM Cognos Analytics does not need to include that additional metadata for queries to work.

Denodo 5.5 and 6.0 data servers

The Denodo 5.5 and 6.0 data server types are supported through the Denodo JDBC driver.

The minimum supported version of Denodo 5.5 is update 20160322 that must have Denodo hot fix #26682 applied. Previous versions of Denodo 5.5 are not supported.

The initial release of Denodo 6.0 GA requires Denodo hot fix #26681 to be applied.

Denodo requires a 6.0 JDBC driver when accessing a 6.0 server, and a 5.5 JDBC driver when accessing a 5.5 server.

Denodo 5.5 JDBC drivers do not prevent connections against a 6.0 server. If this situation occurs, the 6.0 server might throw exceptions while running queries or attempting to import metadata.

Data sources no longer supported in Cognos Analytics

Certain data sources are no longer supported in IBM Cognos Analytics.

All data source connections that were defined in previous releases of Cognos Analytics remain in the content store until they are manually deleted or changed to a supported type where applicable. These connections are visible in the product administration interfaces. When such connections are opened in IBM Cognos Administration, they appear in the connection editor of type **Other type**. This connection editor provides a limited interface to view or edit the connections, and to access the associated signons.

Each data source connection in the content store is represented by a string with various custom names and values. This string is visible in the connection editors in Cognos Analytics. For example, when testing a connection, a string such as the following one is displayed:

```
^User ID:^?Password:;LOCAL;PG;DSN=MyDataSourceName;
UID=%s;PWD=%s;MyODBCDSN@ASYNC=0@0/0@COLSEQ=
```

The connection type in the string is shown after the value LOCAL. In the above example, the connection type is PG.

If your current version of Cognos Analytics is using connections to data sources that are no longer supported, in some cases you can change the connections to the supported types.

Cognos Analytics 11.0.8

The following data sources are not supported as of the 11.0.8 release:

- Hitachi Advanced Data Binder Platform (JDBC)
- IBM Domino (JDBC)
- MongoDB Connector for BI version 1

Update any version 1 connections to use MongoDB Connector for BI version 2.2.1. Also, update existing Cognos models while connected to version 2.2.1. This will ensure that the model metadata reflects differences in data types and scale that were introduced in MongoDB Connector for BI 2.2.1.

Cognos Analytics 11.0.6

The following data sources are not supported as of the 11.0.6 release:

• Actian Matrix (ODBC and JDBC)

Generic ODBC connection types can be used to refer to an ODBC DSN that uses an ODBC driver on Microsoft Windows operating systems to access an Actian Matrix server. You will not be able to use an existing JDBC connection.

Actian Vector (ODBC)

Generic ODBC connection types can be used to refer to an ODBC DSN that uses an ODBC driver on Microsoft Windows operating systems to access an Actian Vector server.

IBM[®] IMS[™] (JDBC)

Cognos Analytics 11.0.3

The following data sources are not supported as of the 11.0.3 release:

- IBM Cognos Finance connection type CL
- Microsoft SQL Server Analysis Services 2005 and 2008 (ODBO) connection types YK and M8

Applications on Windows operating systems should use the ODBO client that is released with the supported Microsoft Analysis Services version. Applications on non-Windows platforms can use an XMLA (connection type X8) connection. The ODBO clients releases with SQL Server Analysis Services 2005, 2008 and 2008 R2 are no longer supported. Connections for versions 2012 (connection type M12) and 2014 (connection type M14) are both supported. New connections that reference the 2012 or 2014 clients should only be used for version 2012 and 2014 of the corresponding SQL Server Analysis Services servers.

As of Cognos Analytics 11.0.0, only dynamic query mode servers support SQL Server Analysis Services. The compatible query mode does not support SQL Server Analysis Services.

 Microsoft SQL Server 2005 and 2008 Native Clients, and OLE DB (connection type OL and Provider=SQLNCLI or SQLNCLI10) Older versions of the Microsoft SQL Server client libraries are no longer supported (<u>https://</u>msdn.microsoft.com/en-us/library/cc280510.aspx</u>). For applications that must access SQL Server via OLE DB, you can use Native Client connections that include the Provider=SQLNCLI11. These connections are parallel to the current SQL Server Native Client version 11 that is supported with SQL Server 2016, 2014, and 2012. Alternatively, connections that use the Microsoft ODBC driver for SQL Server can be used.

• SAP ECC

Cognos Analytics 11.0.2

The following data sources are not supported as of the 11.0.2 release:

• Composite (ODBC)

Composite (connection type CS): Generic ODBC (OD) connection types can be used to refer to an ODBC DSN which may be using a an ODBC driver on Window operation systems to access Siebel servers. Dynamic query mode supports several technologies, including Cisco Information Server and Denodo via JDBC that could potentially be used to provide federated access to Siebel systems.

• IBM Cognos Now! - Real-time Monitoring Cube (connection type LA)

There is no alternative connection type.

• IBM Cognos Planning - Series 7 (connection type CR)

There is no alternative connection type.

- IBM Cognos Virtual View Manager (ODBC)
- IBM Red Brick® (ODBC)
- Progress OpenEdge (ODBC)
- Siebel
- Sybase Adaptive Server Enterprise (CT-Lib)

Updates by release

Cognos Analytics supports many different data servers. In different releases, data servers are added, changed, or removed.

To view an up-to-date list of data servers that are supported for specific versions of Cognos Analytics, go to the <u>IBM Cognos Analytics 11.0.0 Supported Software Environments</u> page. In the release section, for example 11.0.8, click one of the following links to view a detailed report about supported data sources:

- Under **Requirements by type**, click the **Software** link. On the **Supported Software** tab, go to the **Data Sources** section. All supported data sources are listed in the table.
- Under **Requirements by platform**, click the operating system name, such as **Linux**. On the **Supported Software** tab, go to the **Data Sources** section. All data sources that are supported for the chosen operating system are listed in the table.

Cognos Analytics 11.0.13 - new and changed features

IBM Cognos Analytics supports the Amazon Athena JDBC driver 1.1.1001, and new versions of Microsoft Analysis Services data servers.

Amazon Athena JDBC driver 1.1.1001

IBM Cognos Analytics supports the Amazon Athena JDBC driver 1.1.1001.

This new driver does not support the driver class name and connection properties supported by the previous driver (1.1.0). The 1.1.1001 driver uses a different driver class name for each of the JDBC 4.0, 4.1, and 4.2 implementations provided. Existing connections must be updated so that the driver class name com.amazonaws.athena.jdbc.AthenaDriver is changed to one of these driver classes, as applicable:

- com.simba.athena.jdbc4.Driver
- com.simba.athena.jdbc41.Driver
- · com.simba.athena.jdbc42.Driver

The 1.1.1001 driver uses different names to receive the Amazon region and S3 output bucket.

Tip : Existing connections must be updated to pass the required AwsRegion and S3OutputLocation properties. For more details on the Amazon Athena JDBC driver, see the Amazon Athena JDBC documentation and release notes at https://docs.aws.amazon.com/athena/latest/ug/connect-with-jdbc.html

Support for new versions of Microsoft Analysis Services data servers

Cognos Analytics now supports the following versions of Microsoft Analysis Services data servers:

• Microsoft Analysis Services (HTTP XMLA)

Existing connections to a Microsoft Analysis Services 2017 server still work. Reports that were created against previous versions of the data server work after they are switched to use the new server.

• Microsoft Analysis Services 2017 (ODBO)

Existing connections that are moved to this server might lose signons.

Reports that were created against previous versions of the data server still work after they are switched to use the new client and server. The client and server versions must match.

Similar to other Microsoft Analysis Services MSOLAP versions, the Microsoft Analysis Services MSOLAP client must be installed to the same location as the report server. For this version of Microsoft Analysis Services, the MSOLAP version 14 client is required.

Cognos Analytics 11.0.9 - new and changed features

The changes improve IBM Cognos Analytics server performance and ensure compliance with supported database products.

Teradata JDBC connections - improved query concurrency

Dynamic query mode was changed to ensure that only one query can be running against a Teradata JDBC connection. This change improves query concurrency, as described in the multi-threading section of the Teradata JDBC Driver Reference.

Database administrators who monitor their database workloads might notice an increase in the number of database connections comparing to previous releases of Cognos Analytics.

Snowflake connections - changed driver class name

In prior releases of Cognos Analytics, the default driver class name for new Snowflake connections was com.snowflake.client.jdbc.SnowflakeDriver.Starting with Cognos Analytics version 11.0.9, the default driver class name for new Snowflake connections is net.snowflake.client.jdbc.SnowflakeDriver.

Existing connections will continue to reference the Snowflake driver class com.snowflake.client.jdbc.SnowflakeDriver.When Snowflake removes that class name from the driver, those connections will require the **Driver class name** property to be changed to net.snowflake.client.jdbc.SnowflakeDriver.

Tip : To edit a data server connection, go to **Manage** > **Administration console**. On the **Configuration** tab, select **Data source connections**. Find the data server connection and open it. You cannot edit existing connections from **Manage** > **Data server connections**.

Amazon Redshift connections - changed driver class name

In previous releases of Cognos Analytics, the default driver class name for new Amazon Redshift connections was com.amazon.redshift.jdbc41.Driver, which required the RedshiftJDBC41.*.jar file.

Starting with Cognos Analytics version 11.0.9, the default driver class name for new Amazon Redshift connections is com.amazon.redshift.jdbc.Driver. This driver class name is used by Amazon JDBC driver version 1.2.1 or higher. The associated driver file is RedshiftJDBC.jar.

You can update existing connections by changing the **Driver class name** property to com.amazon.redshift.jdbc.Driver.

Tip : To edit a data server connection, go to **Manage** > **Administration console**. On the **Configuration** tab, select **Data source connections**. Find the data server connection and open it. You cannot edit existing connections from **Manage** > **Data server connections**.

PostgreSQL connections can be used with Amazon Aurora PostgreSQL

Starting with this release, you can use the existing PostgreSQL connection editor and JDBC driver to create and maintain data server connections to Amazon Aurora PostgreSQL.

Cognos Analytics 11.0.8 - new features

IBM Cognos Analytics added support for the following data servers: MongoDB Connector for BI 2.2.1, Spark SQL 2.1 Thrift server, Azure SQL Data Warehouse, Amazon Redshift, and Amazon Athena.

MongoDB Connector for BI 2.2.1

Cognos Analytics supports MongoDB Connector for BI version 2.2.1 through the MySQL JDBC driver that is required by MongoDB. MongoDB Connector for BI 2.2.1 does not use Postgres JDBC driver and server technology to access MongoDB 3.x servers.

MongoDB Connector for BI version 1 is no longer supported. Update any version 1 connections to use the new version. Also, update existing Cognos models while you are connected to version 2.2.1. This ensures that the model metadata reflects differences in data types and scale that were introduced in MongoDB Connector for BI 2.2.1.

Spark SQL 2.1 Thrift server

Cognos Analytics supports the Spark SQL 2.1 Thrift server through the SIMBA (Magnitude) JDBC driver for Spark SQL.

Azure SQL Data Warehouse

Connections to Azure SQL Data Warehouse are maintained by using the Microsoft SQL Server connection editor.

Amazon Redshift

By default, the Amazon Redshift users must copy a version of the RedshiftJDBC41*.jar file to the Cognos Analytics *install_location*\drivers directory. While there is no requirement to use a 4.0 or 4.2 driver, you can edit the default driver class name to correspond to the driver class names that are supported by Amazon. Amazon JDBC drivers, starting with version 1.2.1, support the generic com.amazon.redshift.jdbc driver. This driver can be used instead of the previous driver class names.

Amazon Athena

Cognos Analytics supports Amazon Athena through the Amazon Athena JDBC driver. A connection must specify a valid Amazon S3 location by using the Amazon Athena s3_staging_dir connection property from which the driver retrieves query results.

Cognos Analytics 11.0.7 - new and changed features

MemSQL and Presto are added as supported data server types, and MariaDB has its own connection editor.

MemSQL

Starting with this release, MemSQL data server types are supported. To maintain a connection for this data server, use the MySQL connection type and Connector/J JDBC driver.

Presto

Starting with this release, Presto (version 0.167 and later) data server types are supported. Both the Presto and Teradata Presto JDBC drivers can be used. Connections to this data server are maintained by using the Presto or Teradata Presto connection editor, depending on which JDBC driver is used.

Tip : Current releases of Presto have limited support for fixed-length character types (CHAR), which can result in incorrect results. To avoid this limitation, generate expressions that use a varying length character type.

MariaDB

Starting with Cognos Analytics 11.0.7, MariaDB data server has its own connection editor that supports MariaDB Connector/J JDBC driver.

In previous releases, connections to MariaDB were defined by using the MySQL connection editor and MySQL Connector/J JDBC driver.

The MariaDB Connector/J driver returns version details. This enables dynamic query mode to use the SQL enhancements that are introduced in MariaDB 10.2.4. When connections are defined by using the MySQL JDBC driver, these features cannot be used and more local processing might occur in the dynamic query mode.

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Chapter 4. Managing system settings

You can configure system settings that affect all users and components in your Cognos Analytics environment.

Managing data file uploads

You can control how data files are uploaded to IBM Cognos Analytics.

Procedure

- 1. Go to Manage > Configuration > System, and select the File uploads tab.
- 2. As required, change any of the following settings:
 - the path of the data file
 - data file encryption (on or off)
 - the size limit per upload
 - the size limit of stored data per user

Tip: Updates to size limits may take a moment to refresh.

3. Click **OK**.

Enforcing HTTP Strict Transport Security

You can specify that all HTTP requests sent from users' web browsers are forwarded as HTTPS requests. This configuration enforces HTTP Strict Transport Security (HSTS) by ensuring that all connections use Secure Sockets Layer (SSL) protocol.

Procedure

- 1. Go to Manage > Configuration > System, and select the Security tab.
- 2. Turn on the setting HTTP strict transport.
- 3. Click **OK**.

Logging types and files

Log messages provide information about the status of components and important events. Administrators and users can use these messages to troubleshoot problems.

IBM Cognos Analytics supports different types of logging, including the following main types of logging: audit logging, diagnostic logging, user session logging, and report performance logging.

By default, the IBM Cognos service for each installation sends information to the local *install_location*/logs directory. The audit messages are saved to the cogaudit.log file, and the diagnostic messages are saved to the cognosserver.log and dataset-service.log files. For audit logs, the administrator can specify the location, size and number of log files in IBM Cognos Configuration. For diagnostic logging, the size and number of log files is set in the **Manage** part of Cognos Analytics. Diagnostic logs are always written to the *install_location*/logs directory. Audit logging can be configured to also write to a database, remote log server, or system log. For more information, see "Diagnostic logging" on page 28.

Session logging can be turned on by individual users for a single Cognos Analytics session after administrators enable this type of logging for the system. The messages are logged in the following log files in the *install_location*/logs directory: cognosserver-session-*session_id*.log and

dataset-service-session-*session_id*.log. For more information, see <u>"Setting up session</u> logging" on page 29.

Report performance logging

This type of logging is supported in IBM Cognos Analytics - Reporting for individual reports. A report author enables the option to log performance details by selecting the report run option **Include performance details**. The following details can be viewed in the report output: **Total execution time**, **Query execution time**, and **Rendering time**. Customers can use this information to self-diagnose performance or tuning issues before logging a service request.

For more information, see the sections about running reports and viewing performance details in the *IBM Cognos Analytics - Reporting Guide*.

Diagnostic logging

Diagnostic logging can be configured by administrators to use for intermittent or service-specific problems. The same logging configuration is automatically set on all servers.

The diagnostic logging messages are logged in the cognosserver.log and dataset-service.log files in the *install_location*/logs directory. The administrators can specify the maximum size for log files and maximum number of log files to keep to avoid negative impact on performance.

This type of logging is a replacement for JAVA IPF logging (ipfclientconfig.xml) from previous versions of Cognos Analytics. Cognos Analytics processes the log messages from the product services using internally defined loggers. These loggers are abstracted into logging topics that can be enabled in the **Manage** user interface.

Diagnostic logging has no impact on session logging or audit logging.

Tip : You can still use ipfclientconfig.xml for native code components, such as Report Servers, or Framework Manager. ipfclientconfig.xml can impact audit logging so use it with caution.

Configuring diagnostic logging

Administrators can specify restrictions on the size and number of log files that are used for diagnostic logging.

Procedure

- 1. Go to Manage > Configuration > System, and select the Diagnostic logging tab.
- 2. Specify the required values for the following settings:
 - Size limit for server log file
 - Maximum number of backup server log files
- 3. Click OK.

You do not need to restart the IBM Cognos service to change diagnostic logging.

Enabling diagnostic logging for different topics

You can enable diagnostic logging on a specific product component, service, or function by changing the logging topic.

IBM Cognos Analytics processes the log messages from the product services using internally defined loggers. These loggers are abstracted into logging topics. The **DEFAULT LOGGING** topic that is set for diagnostic logging uses a set of logger names that are set at specific error levels. This is done so that the default logging is not too verbose and records only the most important messages.

You can enable diagnostic logging on a built-in topic or on a custom topic. To create a custom topic, you can download a JSON spec for a built-in topic and use it as a basis for creating your custom topic. Custom topics can be modified, but built-in topics cannot be modified.

Procedure

- 1. Go to Manage > Configuration.
- 2. Select the **Diagnostic logging** tab.
- 3. Select one of the built-in or custom topics for which you want to enable logging.

For example, to enable logging of authentication issues, choose the **AAA** topic.

4. Click Apply.

To restore **DEFAULT LOGGING**, click **Reset**.

You do not need to restart the Cognos Analytics service when you change the logging topic.

Results

The logs are now written to the cognosserver.log and dataset-service.log files in the *install_location*/logs directory.

Using diagnostic logging to troubleshoot Cognos service startup problems

IBM Cognos service startup problems is an example of a situation when diagnostic logging can help you discover the root cause of the problem.

If the Cognos service fails to start before the dispatcher is ready, you need to enable more detailed diagnostic logging in your installation directly before trying to start the service again. By default, minimal logging level is enabled.

Procedure

- 1. From the IBM Cognos Analytics *installation_location/wlp/usr/servers/cognosserver* directory, open the bootstrap.properties file.
- 2. In this file, add the system property **com.ibm.bi.logging.glug.hint.isready=false** to enable detailed logging.
- 3. Restart the Cognos service (from Cognos Configuration or from a command line).

At startup, the system property **com.ibm.bi.logging.glug.hint.isready=false** is examined by the logging service before any other services are available.

The restart fails again, but this time with detailed logs in the *installation_location*/logs/ cognosserver.log file. Use these logs to troubleshoot the problem.

4. After the problem is resolved, remove the system property

com.ibm.bi.logging.glug.hint.isready=false from the bootstrap.properties file to disable detailed logging, and restart the Cognos service. After the restart, the default, minimal logging is restored.

Tip : If you are not concerned about the length of time that it takes to start the Cognos service, and if you have a sufficient amount of space available, you can leave this property set to false. This will leave detailed logging enabled until the message that the dispatcher is ready appears.

Setting up session logging

Session logging is used to log detailed user activity in every IBM Cognos Analytics component and service that is associated with the user's request.

The user does not need to know the components, services, or logging configuration details. There is no performance impact on other users.

Session logging is typically used when a user can reproduce a problem. It can be set up for a maximum of one hour and stopped at any time by the user.

Unique log files are generated for each user who enables session logging. The file names include a unique **Log identifier** that is generated when session logging is turned on by the user.

The administrator must enable session logging for the system, and then individual users can turn it on or off for themselves.

Procedure

- 1. Select Manage > Configuration > System.
- 2. Select the **Diagnostic logging** tab.
- 3. Turn on the setting **Enable user session logging**.

When this setting is turned on, the option **Log my session** is available for all users in their personal settings.

- 4. Specify the required values for the following settings:
 - Size limit for user session log file (per user)
 - Maximum number of backup log files (per user session)
- 5. Click **OK** to apply the changes.

You do not need to restart the IBM Cognos Analytics service.

What to do next

Users can now enable session logging in their personal settings, by selecting the **Log my session** option, and turning on the setting **Session logging**. The users should record the **Log identifier** that is generated for the session before they turn off logging or close the browser. The administrator will need this identifier to find the session log files, cognosserver-session-*log_identifier*.log and dataset-service-session-*session_id*.log, in the *install_location*/logs directory.

Enabling or disabling legacy components

You can enable or disable the legacy Cognos Business Intelligence components Analysis Studio, Event Studio, and Query Studio.

Procedure

- 1. Start Cognos Analytics and log in as System Administrator.
- 2. In your browser, type http://ca_server_name:port/bi/utils/ConfigSetter.html
- 3. In the **Name** field, type Configuration.LegacyLaunchable
- 4. Click on the **Value** field.
 - If the value returned is 0, the legacy components are not enabled.
 - If the value returned is 1, the legacy components are enabled.
- 5. If you want to change the current value, do one of the following:
 - a) Type 1 in the **Value** field to enable the legacy components.
 - b) Type 0 in the **Value** field to disable the legacy components.
- 6. Click Submit.

Note : The configuration change is propagated to any dispatchers.

Results

When Cognos Analytics users select **New** > **Other**, the components Analysis Studio, Event Studio, and Query Studio are either shown or hidden, depending on whether you enabled them or disabled them.

Chapter 5. Managing scheduled activities

You can view a list of users' scheduled activities that are current, past, or upcoming on a specific day.

You can filter the list so that only the entries that you want appear. A bar chart shows you an overview of daily activities, by hour. You can use the chart to help choose the optimum date for rescheduling activities. You can set run priority for entries. You can also view the run history for entries, specify how long to keep run histories, and rerun failed entries.

You can see who ran each entry and perform actions on entries as required. For example, you may want to cancel or suspend a user's large job if it is holding up important entries in the queue. You can also override the priority of an entry instance or you can change it permanently for an entry itself.

If you switch views, you must refresh to see current data. For example, if you switch from **Past Activities** to **Upcoming Activities**, you must refresh to see current data in the panes.

Administrators can use the **Manage** > **Activities** administration function, or **IBM Cognos Administration** to manage activities for all user entries.

Schedule an Entry

You schedule an entry to run it at a later time or at a recurring date and time. For example, you can schedule a report or an agent.

If you no longer need a schedule, you can delete it. You can also disable it without losing any of the scheduling details. You can then enable the schedule at a later time. For more information, see <u>Chapter 5</u>, "Managing scheduled activities," on page 31.

You can schedule an entry to run on the last day of each month or as part of a job. You can schedule reports based on trigger occurrences. For more information, see "Trigger-based Entry Scheduling" in the *Cognos Analytics Administration and Security Guide.*.

To use this functionality, you must have the required permissions for the **Scheduling** secured function in **IBM Cognos Administration**.

To schedule an entry, you need the permissions that are required to run the entry. For example, to schedule a report or report view, you must have read, write, execute, and traverse permissions for it. To schedule a child report view, you must have execute permissions on the parent report. You also require the following access permissions for any data sources used by the report:

- dataSource Execute and Traverse
- dataSourceConnection Execute and Traverse
 - With only Execute access, you are prompted to log on to the database.
- dataSourceSignon Execute

To schedule reports to run in the restricted CVS, PDF, XLS, or XML output formats, you require the generate output capability for the specific format. For more information, see "Report formats" in the *Cognos Analytics Administration and Security Guide.*.

To set priority for an entry, you must have the required permissions for the **Scheduling priority** secured feature. For more information, see "Secured Functions and Features" in the *Cognos Analytics Administration and Security Guide.*

If you want, you can change the current schedule owner by changing the credentials for a scheduled entry. For more information, see "Example - Change the Credentials for a Schedule" on page 33.

Procedure

1. Click the entry context menu, and then click **Properties**.

2. In the **Properties** pane, click the **Schedule** tab, and then click **New**.

The Create schedule pane appears.

Tip : The options in the **Create schedule** pane are dynamic and change with your selection. Wait until the pane is updated before you choose additional settings.

- 3. In the **Schedule** field, select how often you want the schedule to run.
- 4. In the Start field, select the date when you want the schedule to start.
- 5. In the **End** field, select when you want the schedule to end.
- 6. In the **Run every** field, specify how often you want the schedule to run.
- 7. If you select the **Daily time interval** check box, you can also select a daily frequency for your scheduled entries.
 - a) Under **Daily frequency**, specify the frequency with which a report is run during the day, beginning with the start time selected in step <u>"4" on page 32</u>. You can choose to schedule an entry either by the minute or by the hour.
 - b) If you want, you can select a time period when you want the entry to run during the day, for example, between 9:00 am and 5:00 pm. This way, you can restrict the running of entries to periods during the day when updates are required.

Tip : When you specify an hourly frequency and a time period, if you select an hourly frequency that divides evenly into the 24-hour clock, your scheduled entry runs at the same times each day. If you select an hourly frequency that does not divide evenly into the 24-hour clock, your scheduled entry runs at different times on subsequent days.

Table 3.	Example of day	1 and day	2 run times fo	r entries th	at are scheduled	hourly within a time
period						

Time period specified	Time that the entry runs on day 1	Time that the entry runs on day 2
9:00 a.m. to 6:00	9:00 a.m.	9:00 a.m.
p.m.	12:00 p.m.	12:00 p.m.
	3:00 p.m.	3:00 p.m.
	6:00 p.m.	6:00 p.m.
9:00 a.m. to 6:00	9:00 a.m.	10:00 a.m.
p.m.	2:00 p.m.	3:00 p.m.
	Time period specified9:00 a.m. to 6:00 p.m.9:00 a.m. to 6:00 p.m.	Time period specified Time that the entry runs on day 1 9:00 a.m. to 6:00 p.m. 9:00 a.m. 12:00 p.m. 3:00 p.m. 6:00 p.m. 9:00 a.m. to 6:00 p.m. 9:00 a.m. 2:00 p.m.

8. In the **Options** section on the **Schedule** pane, specify what you want.

For example, for reports, you can select formats, languages, delivery method (including how to save report output files), and prompt values.

9. To access additional scheduling options, click **Classic View**. Specify your options, and click **OK**. When you return to the previous view, click **Create**.

The schedule entry appears in the **Create schedule** page.

Results

A schedule is created and the report runs at the next scheduled time.

Managing scheduled activities

You can view a list of scheduled entries for all users.

Each entry is listed by name, status, and priority. A bar chart shows you an overview of activities broken down by enabled and disabled schedules.

The date and time the schedule was modified and the user who scheduled it are also listed.
You can filter the entries to display only those you want. You can choose to display only the entries with a specific status or priority, or entries of a specific type or scope. You can also filter by the user that scheduled the entry and by the entry owner.

You can set properties, run the schedule once, disable and enable scheduled entries, modify the schedule, remove the schedule, set the priority, and view the run history. Depending on the entry, you may also be able to perform other functions, such as view outputs or event lists.

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type icon \mathbf{M} , and then click **Schedule**.
- 3. In the Filter section, click the filtering options that you want to use.

Tip : If you want to use advanced filtering options, click Advanced options.

4. Click Apply.

The list shows the entries that you selected.

5. To perform an action on an individual entry, click **More** () next to the entry and select the action.

The following table specifies the actions available for entries and the associated icons:

Table 4. Scheduled activities actions and icons				
Action	Icon			
Properties	\$			
Modify this schedule				
View versions				
Disable this schedule	\bigcirc			
Remove this schedule	Θ			
Set priority				
Use my credentials				

Tip : To select all entries in the list, select the check box for the list.

Example - Change the Credentials for a Schedule

You want to change the credentials for a schedule to identify you as the current schedule owner.

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type button \mathbf{M} , and then click **Schedule**.
- 3. Click More () next to the entry and then click Use my credentials 2.
- 4. Save your changes.

Results

The next time that you open the schedule, your credentials identify you as the owner.

Tip : If you are logged on as an anonymous user, information about the current schedule owner is not available.

Managing current activities

Current activities are entries that are currently being processed in IBM Cognos software.

Each entry is listed by name and shows the request time, the status, and the priority for background activities. The bar chart shows the total number of entries, broken down by the number of pending, executing, waiting, and suspended entries. When the activity is processing, the process number is displayed.

You can sort the **Request time**, **Status**, and **Priority** columns. You can choose to view a list of background activities or interactive activities.

You can filter the entries to display only those you want. You can choose to display only those entries with a specific status or priority, or entries of a specific type or scope.

For interactive current entries, you can filter by status and the dispatcher where the activity is running. For background current entries, you can filter by status, priority, type, scope, user who ran the entry, and user who owns the entry.

When an entry is currently running, the dispatcher, process ID, and start time is displayed. Note that process ID and dispatcher of current background entries might be unavailable when the activity first appears. Refresh the page to see the updated process ID and dispatcher.

If you cancel an entry that contains other entries, such as a job or an agent, steps or tasks that have not yet been completed are canceled. However, steps or tasks that have already completed remain completed.

You can change the priority of entries and view the run history .

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type icon \bowtie , and then click **Current**.
- 3. In the **Filter** section, specify the filtering options that you want to use.
 - Tip : If you want to use advanced filtering options, click Advanced options.
- 4. Click Apply.

The list shows the entries that you selected.

Managing past activities

Past activities are entries that have finished processing in IBM Cognos software.

Each entry is listed by name and shows the request time and the status. You can sort the **Request time** and **Status** columns. The bar chart shows the total number of entries, broken down by status. If an entry has failed, a button appears showing the severity of the error. The user who ran the entry is also listed.

You can filter the entries to display only those you want. You can choose to view a list of activities that occurred over a specified length of time, such as the last four hours or the last day, or you can specify a date or time range. You can filter by status, type, and scope. You can also filter by the user who ran the entry, the user who owns the entry, and the dispatcher where the activity ran.

You can view the run history .

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type icon \mathbf{M} , and then click **Past**.
- 3. Pause over the error button next to the status to see the severity of the error.

Managing upcoming activities for a specific day

You can choose to view a list of all upcoming activities that are scheduled for a specific day.

Each entry is listed by name and shows the request time and the priority. A bar chart show the total number of scheduled and canceled entries for each hour of the day. The chart legend shows the total number of scheduled and canceled entries for the day.

You can sort the **Request time**, **Status**, and **Priority** columns. You can choose to view a list of background activities or interactive activities.

Each entry shows the user who scheduled it. You can sort by user.

You can filter the entries to display only those you want. You can choose the date and time for which you want to view upcoming activities. You can filter by status, priority, type, and scope.

You can also filter by the user that scheduled the entry, and the entry owner.

You can change the priority of an entry in the queue .

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type icon \bowtie , and then click **Upcoming**.
- 3. In the **Filter** section, click the filtering options that you want to use.

Tip : If you want to use advanced filtering options, click **Advanced options**. To reset all selections to the default settings, click **Reset to default**.

- 4. Click Apply.
 - The list shows the entries that you selected.
 - The filter status line shows the criteria used to generate the list.
 - The bar chart shows the scheduled and canceled entries by hour for the specified day.

The list of entries, filter status line, and chart are updated whenever you redefine the filter and click **Apply**. The list of entries and filter status line do not change when you browse the chart to a different date.

Managing scheduled activities

You can view a list of scheduled entries for all users.

Each entry is listed by name, status, and priority. A bar chart shows you an overview of activities broken down by enabled and disabled schedules.

The date and time the schedule was modified and the user who scheduled it are also listed.

You can filter the entries to display only those you want. You can choose to display only the entries with a specific status or priority, or entries of a specific type or scope. You can also filter by the user that scheduled the entry and by the entry owner.

You can set properties, run the schedule once, disable and enable scheduled entries, modify the schedule, remove the schedule, set the priority, and view the run history. Depending on the entry, you may also be able to perform other functions, such as view outputs or event lists.

Procedure

- 1. From the Manage menu, click Activities.
- 2. Click the type icon \mathbf{M} , and then click **Schedule**.
- 3. In the **Filter** section, click the filtering options that you want to use.

Tip : If you want to use advanced filtering options, click Advanced options.

4. Click Apply.

The list shows the entries that you selected.

5. To perform an action on an individual entry, click **More** () next to the entry and select the action.

The following table specifies the actions available for entries and the associated icons:

Table 5. Scheduled activities actions and icons				
Action	Icon			
Properties				
Modify this schedule				
View versions				
Disable this schedule	\bigcirc			
Remove this schedule	Θ			
Set priority				
Use my credentials				

Tip : To select all entries in the list, select the check box for the list.

Managing the entry run priority

You can assign a priority of 1 to 5 to scheduled entries.

For example, an entry with priority 1 runs before an entry with priority 5. If there is more than one entry with the same priority, the one that arrived in the queue first runs first. The default priority is 3.

Interactive entries always run immediately and priority cannot be changed once they are running.

You set the priority for an entry when you schedule it . When an entry is in the current, upcoming, or scheduled queue, you can change the priority.

You may want to set a low priority for entries that take a long time to run so that other entries in the queue are not delayed.

When you schedule a job , you set the priority for the whole job, not for individual entries within the job. You may want to set a low priority for a job with many entries so that other entries in the queue are not delayed.

You schedule priority for the parent job. When the job runs, all the child entries inherit the priority of the parent. When the job is in the queue and is not yet running, you can update the priority. You cannot do this for the individual entries in the job. Changing the priority of the job changes the priority of all its child

entries. You can view the run history of a job while it is executing and see which of its entries have completed, are executing, or are pending.

The priority of entries in the queue does not affect an entry that is already running. That entry completes and then the queue priority is checked for the next entry to run.

Before you begin

You must have the **Run activities and schedules** capability to manage the entry run priority.

Procedure

- 1. From the **Manage** menu, click **Activities**.
- 2. Click the type icon $\mathbf{\Sigma}$, and then click **Schedule**.
- 3. To change the priority for one entry, click **More** () next to the entry and select **Set Priority**.
- 4. From the menu, click the priority that you want, and then click **OK**.

Results

The new priority appears in the **Priority** column next to the entries that you selected.

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Chapter 6. Managing licenses

System administrators need to track IBM Cognos Analytics license usage.

The license information in IBM Cognos Analytics shows the licenses that were used by individual users with their last login. Users' changed capabilities are not reflected in their licence usage until the users log in again. Also, for existing customers the license usage information is incomplete until all users log in again.

A license usage report is generated when the licenses page in **Manage** > **Licenses** is opened for the first time, when the **Refresh** button is clicked, or after a product restart.

The basic report contains information about license usage by user. Some customers might want to do additional reporting, for example, on license usage by tenant.

IBM Cognos Analytics has a few types of licensed roles, each of them associated with different capabilities. Refer to this article (www.ibm.com/support/docview.wss?uid=swg21684890) to view the capabilities and permissions matrix that the IBM Cognos Analytics license model is based on.

License usage can be monitored in a production and non-production environment. For more information about these two types of environments, see <u>Chapter 9</u>, "Enabling a production environment," on page 89.

Procedure

- 1. To access the licenses page in IBM Cognos Analytics, click Manage > Licenses.
- 2. To enter the number of owned licenses, click the **Owned** field for the licensed role, type the number, and click **Apply** to save the value.

This value is used for information purposes only and is not included in the license usage report.

3. To generate the license usage report, click **Refresh**.

You can generate the report as often as you want.

4. To view the license information for a specific role, click the details icon 🚬

This information is a subset of information from the full report.

5. To view the full report, click **Export** to save the information to a CSV file, and open the file.

Tip : In the exported file, the values in Level column correspond to specific license roles, as follows:

Level	License role
3	Analytics Administrator
2	Analytics Explorer
1	Analytics User
0	Information Distribution
-1	The license role is unknown because the user has not logged in yet.

What to do next

For more information, see the following topics:

- Predefined license roles
- Assigning capabilities based on license roles
- Upgrade scenario: If your customized roles have the same names as the new license roles

License roles

To help you map capabilities to licensing requirements, Cognos Analytics also provides predefined roles that are based on license entitlements.

Note : Another type of role is a standard role. Standard roles have specific capabilities that allow users to perform different tasks. For more information, see <u>"Standard roles" on page 3</u>.

The following table lists the predefined license roles.

Table 6. Predefined Cognos license roles				
License role	Description			
Analytics Administrators	Members have the same access permissions as Analytics Explorers. They can also access IBM Software Development Kit; and components in the Manage menu, including IBM Cognos Administration.			
Analytics Explorers	Members have the same access permissions as Analytics Users. They can also access Planning Analytics for Microsoft Excel, Cognos Framework Manager, Cognos Cube Designer and Dynamic Query Analyzer, and Transformer.			
Analytics Users	Members can create new reports, dashboards, stories, new jobs, data server/source connections, or data modules. They can execute reports, respond to prompts, and upload files. They can also access Cognos for Microsoft Office, Cognos Workspace, Cognos Event Studio, Cognos Query Studio, and Cognos Analysis Studio.			
Information Distribution Users	Members can read public content, such as reports. However, members cannot execute public content.			

Default permissions based on licenses

In IBM Cognos Analytics, the licence counter in **Manage** > **Licences** is driven by the capabilities that are granted to a user, group or role.

Note : If you make changes to the default permissions, a user can move up to a different licence than the one that they were granted by default.

For information about how to restrict users based on their licence roles, see <u>How do you restrict users</u> based on their License Roles in Cognos Analytics (version 11.0.7 +).

The following table maps the capabilities that are granted for each license. Capabilities are divided into secured features. The letter X indicates that a permission is granted for a specific secured feature. Capabilities marked as "Not Applicable" count as an Information Distribution Licence.

Table 7. Cognos Analytics 11.0 capabilities by license roles						
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
Adaptive Analytics		X	Х	х	Х	Not applicable

Table 7. Cogn	Table 7. Cognos Analytics 11.0 capabilities by license roles (continued)					
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
Administrati on			Х	x	x	
	Adaptive Analytics Administrati on				X	Not Applicable
	Administrati on tasks				X	
	Configure and manage the system				X	
	Controller Administrati on				X	You need a separate IBM Controller Licence
	Data Source Connections		Х	x	x	
	Distribution Lists and Contacts				X	
	Metric Studio Administrati on				X	You need a separate Metrics Licence
	Mobile Administrati on				x	
	Planning Administrati on				X	You need a separate IBM Planning Contributor Licence
	PowerPlay Servers				X	You need a separate PowerPlay license
	Printers				X	
	Query Service Administrati on				X	

Table 7. Cogn	os Analytics 11.	0 capabilities b	y license roles ((continued)		
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
	Run Activities and Schedules				X	
	Set Capabilities and Manage UI Profiles				X	
	Styles and Portlets				x	
	Users, Groups, and Roles				X	
Analysis Studio			Х	X	x	
Cognos Insight			Х	Х	X	Not Applicable
Cognos Viewer		Х	Х	Х	Х	
	Context Menu	Х	Х	Х	X	
	Run with Options		Х	X	X	
	Selection	х	Х	x	x	
	Toolbar	х	х	х	x	
Collaborate		Х	Х	X	X	You need separate entitlement of IBM Connections
	Allow collaboration features	Х	Х	X	X	You need separate entitlement of IBM Connections
	Launch collaboration tools	X	Х	X	X	You need separate entitlement of IBM Connections

Table 7. Cognos Analytics 11.0 capabilities by license roles (continued)						
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
Controller Studio			Х	x	X	You need a separate IBM Controller Licence
Dashboard			Х	х	x	
Data Manager		Х	Х	Х	Х	Not Applicable
Desktop Tools				Х	Х	
Data sets			Х	х	x	
Detailed Errors		×	Х	X	X	
Drill Through Assistant			Х	Х	Х	
Event Studio			Х	х	х	
Execute Indexed Search		Х	Х	x	x	
Executive Dashboard			Х	X	Х	
	Use Advanced Dashboard Features		Х	Х	X	
	Use Interactive Dashboard Features		Х	X	X	
External Repositories		x	Х	Х	Х	
	Manage Repository Connections		Х	х	x	
	View External Documents	Х	Х	X	X	
Generate CSV Output			Х	X	X	
Generate PDF Output			Х	X	X	

Table 7. Cogn	Table 7. Cognos Analytics 11.0 capabilities by license roles (continued)					
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
Generate XLS Output			Х	Х	Х	
Generate XML Output			Х	X	X	
Glossary		X	Х	X	X	Integration with IBM InfoSphere Business glossary. Can use directly from Viewer
Hide Entries		х	Х	х	x	
Import relational metadata				X	X	
Lineage		х	Х	х	х	
Manage content					x	
Manage own data source signons			Х	x	x	
Metric Studio			Х	X	X	You need a separate Metrics Licence
	Edit View		Х	X	X	You need a separate Metrics Licence
Mobile		Х	Х	Х	Х	
Planning Contributor		X	Х	X	X	You need a separate IBM Planning Contributor Licence
PowerPlay Studio			X	X	X	You need separate PowerPlay license
Query Studio			Х	Х	Х	
	Advanced		Х	Х	Х	

Table 7. Cogn	Table 7. Cognos Analytics 11.0 capabilities by license roles (continued)					
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
	Create		Х	Х	Х	
Report Studio			Х	Х	X	
	Allow External Data		Х	X	X	
	Bursting		Х	Х	Х	
	Create/ Delete		Х	X	x	
	HTML Items in Report		Х	Х	X	
	User Defined SQL		Х	Х	X	
Scheduling			Х	Х	Х	
	Schedule by Day		Х	X	X	
	Schedule by Hour		Х	X	x	
	Schedule by minute		Х	Х	x	
	Schedule by month		Х	X	x	
	Schedule by trigger		Х	X	x	
	Schedule by week		Х	Х	x	
	Schedule by year		Х	Х	X	
	Schedule by Priority		Х	Х	x	
Self Service Package Wizard				X	X	
Set Entry- Specific Capabilities			Х	X	X	
Snapshots			Х	Х	X	Not Applicable
Specification Execution					x	

Table 7. Cognos Analytics 11.0 capabilities by license roles (continued)						
Capability	Secured feature	Information Distribution	Analytics User	Analytics Explorer	Analytics Administrat or	Comments
Upload files			Х	Х	Х	
Watch Rules			Х	Х	Х	
Web-based modeling			Х	Х	Х	

Assigning capabilities based on license roles

You can assign capabilities based on the license role entitlements.

- To use the predefined roles that are set up automatically when you install, follow the steps in <u>How do</u> you restrict users based on their License Roles in Cognos Analytics (version 11.0.7 +).
- To manually set up these roles, follow the steps in <u>How do you restrict users based on their License</u> Roles in Cognos Analytics (versions 11.0.0 to 11.0.6).

Upgrade scenario: If your customized roles have the same names as the newer Cognos license roles

If you previously created roles with the same names as the newer Cognos license roles and you are planning an upgrade, consider which capabilities you want to apply to the roles after you upgrade.

For more information, see "License roles" on page 40

- If you want to continue using capabilities that you previously assigned to those roles, you can perform the upgrade without losing those capabilities.
- However, if you want to adopt the capabilities of the new license roles, you must first delete or rename your existing roles **before you upgrade**.

Chapter 7. Tenant administration

Tenant administration tasks are performed by system administrators and delegated tenant administrators.

System administrators must be members of the **System Administrators** role in the **Cognos** namespace. System administrators can view and modify all objects in the content store. They can also delegate tenant administration tasks to other administrators who are members of the **Tenant Administrators** role in the **Cognos** namespace.

Members of the **System Administrators** role can perform the following tasks in a multitenant IBM Cognos Analytics environment:

- Create, change, and delete tenant objects.
- Change tenancy properties on any object in the content store.
- · Move tenants.
- Terminate sessions for tenants.

The **Multitenancy** tab in **Manage** is the central area for tenant administration. On this tab, the administrator can add new tenants, and manage all tenants that are registered in the current Cognos Analytics environment. Only members of the **System Administrators** role can access the **Multitenancy** tab.

Tip : The Multitenancy tab in IBM Cognos Administration can also be used for tenant administration.

Containment rules for multitenancy

Multiple tenants can co-exist in a single content store. The tenant containment rules ensure security and isolation between tenants. These rules dictate how the content is created and where it can be located.

Every object in the content store has a tenant ID value that indicates which tenant the object belongs to. For information about creating tenant IDs, see "Creating tenants" on page 47.

The tenant ID of an object must be the same as the tenant ID of its parent, unless the parent tenant ID is public. If the parent tenant ID is public, the tenant ID for the child can be changed to any value. For more information, see "Setting a tenant ID for a public object" on page 49.

If the current logged-in user creates an object, the object tenant ID is the same as the user's tenant ID.

Model and modelView objects inherit their tenant ID from the package. For example, models published to a public package are always public.

Creating tenants

System administrators must create and enable the tenant object before the tenant users can access IBM Cognos Analytics.

Before you begin

Multitenancy must already be enabled in IBM Cognos Configuration.

About this task

The system administrator creates the tenant object in the Cognos Analytics **Manage** component, on the **Multitenancy** tab, and assigns a unique tenant ID to the object.

The tenant IDs are defined in the authentication provider, such as LDAP, Active Directory, or a custom authentication provider. For more information, see" Configuring multitenancy" in the *Cognos Analytics Administration and Security Guide.*.

Procedure

- 1. In Manage, select the Multitenancy tab.
- 2. Select the Add a tenant 🕀 icon.
- 3. Specify the Name and Tenant ID parameters.

Ensure that you specify a valid tenant ID that was preconfigured in the authentication provider.

Other parameters on this page are optional.

4. Select Add.

Results

The tenant name is displayed on the **Multitenancy** tab. By default, the tenant is disabled *b*. You can enable the tenant after it is fully configured.

Assigning tenant IDs to existing content

After multitenancy is enabled, the system administrator assigns tenant IDs to the existing content store objects. All objects that belong to a tenant have the same tenant ID.

When a user from a specific tenant logs on to IBM Cognos Analytics, the system looks at the tenant ID and filters the content.

Tenants can be created and tenant IDs can be assigned using the software development kit (SDK).

About this task

In a multitenant environment, all objects in the content store are either public or belong to a single tenant. As a system administrator, you must ensure that the existing objects have a proper tenant ID or are meant to remain public. For example, you can assign tenant IDs to content within a folder, but leave the folder itself public.

You can also assign tenant IDs for individual objects, such as reports, dashboards, data server connections, user groups and roles, and so on.

Procedure

- 1. Log on to IBM Cognos Analytics as a system administrator.
- 2. In **Team Content**, locate the container entries, such as folders or packages, whose descendents should be assigned the same tenant ID.

When assigning tenant IDs for objects such as data server connections or groups or roles, locate the objects in the appropriate area in the administration interface.

- 3. Open the **Properties** panel for the object for which you want to assign the tenant ID.
- 4. On the **General** tab, **Advanced** section, click the link next to **Tenant**.
- 5. Choose a tenant ID from the list of available IDs, and click **Apply**.

Results

The tenant ID is applied to the entry. If the entry is a container, such as a folder or package, the tenant ID is applied to the entry and its descendents.

The tenant name is displayed on the **General** tab, **Advanced** section, in the object properties page.

Setting a tenant ID for a public object

You can assign a tenant ID for objects whose parent is public.

Procedure

- 1. Open the **Properties** panel for the object, such as a data server connection, for which you want to specify the tenant ID.
- 2. On the General tab, Advanced section, select the link next to Tenant.
- 3. Choose a tenant ID from the list of available IDs.
- 4. Click Apply.

Delegated tenant administration

System administrators can delegate tenant administration tasks to members of the **Tenant Administrators** role.

If the **Tenant Bounding Set Mapping** property is configured, **Tenant Administrators** can access only tenants that are defined in their bounding set. They are further restricted by the Cognos Analytics security policies assigned to the content by system administrators. In this situation, **Tenant Administrators** are considered bounded tenant administrators.

If the **Tenant Bounding Set Mapping** property is not configured, **Tenant Administrators** bypass tenancy checking and are restricted only by the Cognos Analytics security policies assigned to the content by system administrators. In this situation, **Tenant Administrators** are considered unbounded tenant administrators.

For more information about the **Tenant Bounding Set Mapping** property, see information about advanced multitenancy features in the *IBM Cognos Analytics Administration and Security Guide*.

Tenant Administrators can perform the tenant administration tasks that the system administrator assigns to them.

Tenant Administrators cannot perform the following tasks:

- Access the Multitenancy tab in Manage and in IBM Cognos Administration.
- Create, delete, deploy, and disable tenants.
- Terminate user sessions and customize tenants.
- Change tenancy on objects in the content store.

Tip : The Tenant Administrators role is one of the built-in entries in the Cognos namespace.

For information about the role of **System Administrators** in a multitenant environment, see <u>Chapter 7</u>, "Tenant administration," on page 47.

Setting up the Tenant Administrators role

In the initial content store, the **Tenant Administrators** role has no members and only **System Administrators** have access permissions for this role. System administrators must add members and modify the initial access permissions for this role to use it for delegated tenant administration.

About this task

When you add members to the **Tenant Administrators** role, choose the users, groups, or roles from the appropriate tenants.

Procedure

Use the following procedure to add or remove members of the Tenant Administrators role.

- 1. Log on to IBM Cognos Analytics as a system administrator who is a member of the **System Administrators** role.
- 2. In Manage > Accounts > Namespaces, select the Cognos namespace.
- 3. In the list of entries, locate the **Tenant Administrators** role, and from its context menu [11], click **View members**.
- 4. On the **Members** tab, select the add member \bigoplus icon, and browse through the hierarchy of your security namespace to select the users, groups or roles that you want to be members of this role.

Results

After you add the appropriate users, groups, or roles to the **Tenant Administrators** role, you can use this role to set up security policies and capabilities for objects in the content store.

Setting up virtual tenants to enable content sharing among tenants

When you set up virtual tenants, objects in the content store can be accessed by users who belong to different tenants.

Virtual tenants include real tenants that are already configured in Cognos Analytics.

Before you begin

Multitenancy is enabled for IBM Cognos Analytics and the tenants are created in **Manage** > **Multitenancy**. For more information, see "Creating tenants" on page 47.

About this task

When viewed on the **Multitenancy** tab, the entries for virtual tenants and real tenants look identical. To make it easier to identify virtual tenants, use meaningful names when creating them and specify descriptions.

For example, you want to configure content sharing for tenants named North America, Central America, and South America. You create a virtual tenant named Americas and add the three tenants to this tenant. Users who belong to any of the three tenants can access content of their own tenant, content of the other two tenants, and public content.

If you delete a virtual tenant, all content that is associated with that tenant is also deleted.

For more information, see <u>Advanced multitenancy features</u> (www.ibm.com/support/knowledgecenter/ SSEP7J_11.0.0/com.ibm.swg.ba.cognos.ug_cra.doc/c_config_mt_advanced.html).

Procedure

Perform the following steps to create a virtual tenant and a folder for the virtual tenant content.

- 1. Log on to IBM Cognos Analytics as a member of the System Administrators role.
- 2. In Manage, select the Multitenancy tab.
- 3. Select the Add a tenant \bigoplus icon.
- 4. Specify the Name and Tenant ID parameters.

The virtual tenant ID does not need to be preconfigured. It can be any value.

For a description, type a string, such as Virtual tenant, that will help you to identify the tenant among other tenants in Cognos Analytics.

5. Select Add.

The virtual tenant name is displayed in the list of tenants, and the tenant is disabled by default. You can enable the tenant after you finish configuring it.

- 6. For the virtual tenant that you created, from its context menu 🛄, select **View members**.
- 7. On the **Members** tab, select the add member \bigoplus icon.
- 8. Select the tenants that you want to add to the virtual tenant, and click Add.

Tip : You can add disabled tenants. However, users cannot access content of the disabled tenants until the tenants are enabled.

- 9. Create a new folder. The folder name should be similar to the virtual tenant name for easier identification.
- 10. In the folder properties page, on the **General** tab, **Advanced** section, change the **Tenant ID** value to the tenant ID of the virtual tenant by selecting the ID from the list of available IDs. For example, if your virtual tenant ID is Americas, select this ID from the list and assign it to the folder.

Customizing tenants

You can apply themes to individual tenants. You can also specify that a customized home page, or a particular report or dashboard, be displayed when a user with a particular tenant ID opens IBM Cognos Analytics. You can also remove default user interface features for tenants.

Before setting customized themes and home pages (other than a dashboard or report) you must have created and uploaded custom themes or home pages. For more information, see <u>Chapter 8, "Customizing</u> Cognos Analytics across all roles," on page 55.

In **Manage** > **Multitenancy**, click a tenant. The slide-out panel for that tenant has a **Customization** tab. For more information, see "Managing themes, extensions, views, and parameters" on page 79.

Setting a default home page

Click the next > icon next to the default home page. You can now browse for a dashboard or report to be the default home page, or you can select a view in the list of views to be the default home page for all users of this tenant.

Removing features

You can choose user interface features to remove for the tenant. Click the next > icon next to **Features**. A list of views is displayed. This list includes both the built-in views and any custom views that have been

uploaded. Click a view to see a high-level grouping of features for the view. Click > next to a grouping to drill-down to a lower level of features. You can deselect any features in this list, or drill-down to another set of features to deselect. Click **Apply** to save your changes. You can revert your changes by clicking **Reset to defaults**.

Setting a default theme

Click > next to the default theme. You can select a theme in the list of themes to be the default theme for this tenant.

Creating a custom folder

Click > next to **Custom folder** to set a custom content folder for this tenant. When a user with this tenant ID logs in, the custom folder is displayed on the navigation bar below **Team content**.

Parameters

Add content here and for roles.

Defining regional settings for tenants

A system administrator can specify regional settings for a tenant.

The regional settings apply to all IBM Cognos Analytics components, such as reporting, dasbhoarding, modeling, administration, and so on. These settings also apply to the companion applications such as IBM Cognos Analysis Studio, IBM Cognos Event Studio, and so on.

The following settings can be specified:

Time zone

The time zone of the tenant users.

Product language

The language of the IBM Cognos Analytics user interface.

Content language

The language used to view and produce content in IBM Cognos Analytics, such as data in reports, dashboards, and stories.

Bidirectional language support

This setting applies to languages such as Arabic, Hebrew, Urdu, or Farsi. Using this setting, you can control the direction of text in entry names, descriptions, labels and tooltips, input boxes, comments, and in structured text, such as email addresses, file paths, breadcrumbs, URLs, and date and time formats.

Select one of the following options from the **Base direction for text**: **Right-to-left**, **Left-to-right**, **Contextual**. When the **Contextual** option is selected, the text direction depends on the first letter in the text. If the letter belongs to a right-to-left script, the text direction is right-to-left. Otherwise, the text direction is left-to-right. Numbers and special characters do not influence the text direction. For example, if the text starts with a number followed by an Arabic letter, the direction is right-to-left. If the text starts with a number followed by a Latin letter, the direction is left-to-right

Procedure

- 1. In Manage, select the Multitenancy tab.
- 2. From the tenant context menu, click **Properties**.
- 3. Click the **Regional** tab, and specify the settings.

Results

By default, all tenant users inherit these settings. Depending on their access permissions, the users can personalize these settings later.

Setting up notifications for tenants

A system administrator can configure an email account, called tenant sender, from which the tenant users receive emails.

The tenant sender account overwrites the default sender account that is specified when configuring the mail server for IBM Cognos Analytics.

Tip : The default sender is configured in IBM Cognos Configuration, under **Data Access > Notification**.

Procedure

- 1. In Manage, select the Multitenancy tab.
- 2. From the tenant context menu, click **Properties**.
- 3. On the **Notifications** tab, select **Tenant Sender** and specify the corresponding email address. Click **Apply**.

Results

The tenant sender email account is now associated with distributing IBM Cognos Analytics content.

Terminating active user sessions for tenants

You must terminate the tenant active user sessions before deleting a tenant or before performing some tenant maintenance operations.

Before you begin

Before terminating its active user sessions, disable the tenant so that new user sessions cannot be started. For more information, see "Disabling and enabling tenants" on page 53.

About this task

Use this action to terminate all active user sessions for the specified tenants. Access for other tenants is not affected.

Procedure

- 1. In Manage > Multitenancy, locate the appropriate tenant.
- 2. From the tenant context menu [1], click **Terminate sessions**.

Results

A message that specifies the number of terminated user sessions is displayed.

Disabling and enabling tenants

You can disable a tenant when you want to prevent the tenant users from accessing IBM Cognos Analytics and modifying the tenant content.

About this task

By default, a newly-created tenant is disabled, and you need to enable it after it is configured.

You should disable a tenant before deploying the tenant and its content. For more information, see <u>Tenant</u> <u>content deployment</u> (www.ibm.com/support/knowledgecenter/SSEP7J_11.0.0/ com.ibm.swg.ba.cognos.ug_cra.doc/c_mt_deployment.html).

As a best practice, you should also disable a tenant before terminating its active user sessions. For more information, see "Terminating active user sessions for tenants" on page 53.

Procedure

- 1. In Manage > Multitenancy, locate the required tenant.
- 2. From the tenant context menu [1], click **Disable**.

An icon that indicates the disabled state is added to the tenant icon 🙆.

You can enable the tenant by selecting **Enable**.

Deleting tenants

You can delete a tenant from IBM Cognos Analytics. This might be needed if the tenant was permanently moved to a different instance of IBM Cognos Analytics.

Before you begin

Before deleting a tenant, you must terminate the tenant active user sessions. Otherwise, you will not be able to delete the tenant. For more information, see <u>"Terminating active user sessions for tenants" on</u> page 53.

About this task

When you delete a tenant, you also delete all content associated with the tenant, such as reports or dashboards.

Procedure

- 1. In Manage > Multitenancy, locate the tenant that you want to delete.
- 2. From the tenant context menu ., click **Delete**.

Chapter 8. Customizing Cognos Analytics across all roles

The IBM Cognos Analytics user interface is built on an extensible model. In this model, the user interface screens are defined as views (such as home, authoring, dashboard, and modeler). You can customize these views for all users and roles by adding and removing user interface elements, such as buttons and menus. You can define new views to extend the Cognos Analytics user interface. You can also replace the default home page and sign-in page or substitute your own branding (colors, logos, and brand text) for the default branding on all views.

Customizations are packaged as compressed files that contain a spec.json file that defines the customization. The compressed file can also contain other files, depending on the type of the customization. Customizations can also be included in deployments.

You manage customizations for all users and roles with the **Manage** > **Customizations** slide-out panel. You use this panel to upload your customizations to the Cognos Analytics server, and to select which customizations to use.

Note:

When you use the **Manage** > **Customizations** slide-out panel, your customizations are applied to all users and roles.

For example, if you upload the sample extension called



SampleExtensionExcludeNotifications.zip, it will remove the **Notifications** icon **International** from the Application Bar in the Home perspective for all users and roles. It will also remove the **Notifications** check box from the feature list when an administrator selects the properties of any role, clicks on the **Customization** tab, and navigates to **Features** > **Home** > **Application bar**.

Therefore, if your goal is to add or remove a feature for everyone in your Cognos environment, then you should use an extension. If your goal is to provide users and roles with different features, you should use individual role customization, rather than an extension.

If you use role customizations to set specific features for user roles and then apply an extension that is based on those features, the extension will override all of your role customizations.

To assign home pages, features, themes, custom folders, and parameters to particular roles, use the **Manage** > **Accounts** > **Namespaces** slide-out panel. For more information, see <u>"Customizing roles" on</u> page 6.

To assign custom themes and home pages to particular tenants, use the **Manage** > **Multitenacy** slide-out panel, and from the tenant properties panel, select the **Customization** tab. For more information, see "Customizing tenants" on page 51.

Some types of customizations require the use of the JavaScript programming language. These customizations are described in the following topics.

- "Creating a custom action controller" on page 62
- "Creating a view (other than a sign-in view)" on page 72
- "Creating a sign-in view" on page 74

The other types of customizations do not require any programming knowledge.

The JSON schemas that are used to define customizations are provisional and can change in future releases of Cognos Analytics in a way that is not compatible with earlier versions.

Customization samples

Customization samples are available that demonstrate how to create themes, extensions, and views. You can modify these samples to create your own customizations.

These sample files are installed with the product in an Easy Installation, and are an option in a Custom Installation. After product installation, you can find them in the *installation_location*/samples/folder.

The customization samples are described in the following topics.

- "Sample themes" on page 58
- "Sample extensions" on page 69
- "Sample views" on page 77

Using the samples

The customization samples illustrate how to implement commonly used customizations. You can view the sample code and modify it to create customizations for your users. To examine the contents of a customization sample, extract the .zip file. Each sample contains a spec.json file that contains the logic for the customization. There can also be other files or folders that contain image files, JavaScript files, and HTML files, depending on the customization.

To upload and use a sample theme or extension, follow the instructions in <u>"Managing themes, extensions,</u> views, and parameters" on page 79.

Creating themes

You can override the standard IBM Cognos Analytics theme for the Cognos Analytics user interface to reflect your corporate branding.

The sample customization, SampleTheme.zip, shows how to create a theme. The .zip archive contains a file, spec.json, that defines the theme and a folder, images, that contains the graphic images that are associated with this theme. Image file names cannot contain spaces.

Note : Your specific theme may consist of a folder such as "myTheme" that contains a .json file and images folder (containing your graphics). When creating the zip file, do not include the folder (e.g., "myTheme") in the zip file; Cognos Analytics will not be able to process it. Instead, select the .json file and images folder, then use an archiving program to create the .zip file. Do not use the Windows Explorer "send to compressed folder" feature to create the .zip file; the result would be an incompatible file.

The spec.json file is shown here.

```
{
    "name": "Sample_Theme",
    "schemaVersion": "2.0",
    "brandText": "the Sample Outdoors Company",
    "brandTextSmall": "Sample Outdoors Company",
    "images": {
        "brandIcon": "images/logo_large.png",
        "brandIconSmall": "images/logo_small.png",
        "favicon": "images/logo_fav.png"
    },
    "colors": {
        "appbarBackground": "#eeeeee",
        "appbarForeground": "black",
        "appbarSelectLine": "#033f38",
        "navbarForeground": "#hc9644",
        "navbarForeground": "#hc9644",
        "navbarSelectLine": "#033f38",
        "navbarForeground": "#hc9644",
        "navbarForeground": "#hc9644",
        "navbarSelectLine": "#033f38",
        "navbarForeground": "#hc9644",
        "navbarForeground": "#hc96
```

The current samples do not include the brandTextSmall and favicon elements. They are included here for documentation purposes.

The objects in this file map to the Cognos Analytics user interface elements as shown here. If any theme items are omitted from the theme, then the Cognos Analytics default theme item is used.



This table relates the user interface elements to the JSON objects.

Table 8. Theme objects						
User interface reference	JSON description	Definition				
1	brandText	Brand text. Enter an empty string to leave this entry blank.				
2	brandTextSmall	Small brand text. if omitted, brandText is used. Enter an empty string to leave this entry blank.				
3	brandIcon	Brand icon				
4	brandIconSmall	Small brand icon				
5	appbarBackground	Application bar background color				
5	appbarForeground	Application bar foreground color				
5	appbarSelectLine	Application bar selection line color				
5	appbarPushButtonBackground	Application bar push-button background color				
6	navbarBackground	Navigation bar background color				
6	navbarForeground	Navigation bar foreground color				
6	navbarSelectLine	Navigation bar selection line color				
6	navbarPushButtonBackground	Navigation bar push-button background color				

Table 8. Theme objects (continued)		
User interface reference	JSON description	Definition
	favicon	Icon to display in web browser tab.

Sample themes

The following examples are available that illustrate the use of themes.

These samples are installed in the *<installation_location>/samples/themes* folder.

SampleTheme.zip

A theme that modifies the branding and color scheme for the Cognos Analytics user interface.

SampleThemeBlueGreen.zip

A theme that modifies the color scheme for the Cognos Analytics user interface.

SampleThemeDarkBlue.zip

A theme that modifies the color scheme for the Cognos Analytics user interface.

SampleThemeLight.zip

A theme that modifies the color scheme for the Cognos Analytics user interface.

Creating extensions

You can create extensions that add functions to the IBM Cognos Analytics user interface. For example, you can add buttons that, when clicked, open a particular report or dashboard. You can also remove default buttons from the user interface.

To create and upload extensions, you must have Portal Administrator or System Administrator privileges.

Extensions are defined in a spec.json file that is contained in the root of the extension .zip file. Depending on the extension, there can also be folders that include images, HTML files, and JavaScript files. The structure and contents of the spec.json file is described in <u>"spec.json description" on page</u> 81. The high-level structure of the file is show here.

```
{
    "name":"...",
    "schemaVersion": "1.0",
    "extensions": [
    {
        "perspective": "common",
        "features": [{
            "id": "...",
            "toolItems": [<tool_item1>,<tool_item2>,...],
            "collectionItems": [<collection_item1>,<collection_item2>,...],
            "collectionItems": [<collection_item1>,<collection_item2>,...],
            "excludeFeatures": [<exclude_feature1>,<exclude_feature2>,...],
            "excludeItems": [<exclude_item1>,<exclude_item2>,...],
            "excludeItems": [<exclude_item1>,<exclude_item2>,...],
            "excludeItems": [<exclude_item1>,<exclude_item2>,...]
        }]
}
```

The value of the perspective element indicates which views will use this extension. A value of common means that the extension is used for all views. The items contained in the features array are used depending on the action of the extension. These are illustrated in the following topics.

By creating extensions, you can modify existing views and create new views. The actions that an extension can perform are listed here and are described in the following topics. A single extension can perform one or more actions.

- Add a button to the Application or Navigation bars that performs an action such as displaying a web site, running a report, or opening a dashboard, a story, or a folder.
- Add a menu item to an existing menu that performs an action such as displaying a web site, running a report, or opening a dashboard, a story, or a folder.
- Add a menu along with its menu items.

- Remove a default user interface feature or item.
- Add custom shapes for use in dashboards.
- Add custom widgets for use in dashboards.

Adding a button or a menu item

You can add buttons and menu items to perform various actions, such as displaying a web site, running a report, opening a dashboard, a story, or a folder. You can also create custom actions.

All buttons require an action controller. There are four built-in action controllers that perform common actions. These actions are shown here.

bi/glass/api/IFrameOpener

Opens a web page.

- **bi/glass/api/ReportOpener** Runs a report.
- **bi/glass/api/DashboardOpener** Opens a dashboard.
- **bi/glass/api/Folder0pener** Opens a folder.

You can also write custom action controllers using JavaScript.

The content of the json.spec file are similar for buttons and menu items and they are described together. The main difference is that the value of the type element is button for a button and menuItem for a menu item. Other differences are noted in the following topics.

Using built-in action controllers

There are four built-in action controllers available. These action controllers can open a web page, run a report, open a folder, and open a dashboard or story. The action controllers are described in the following sections.

Opening a web page

Use the bi/glass/api/IFrameOpener action controller to open a web page. The available options are shown here.

url

Specifies the web page URL to open.

title

Specifies the web page title to display.

The SampleExtensionButtonWebsite.zip sample extension opens a web page. The spec.json file is shown here.

```
ş
    "name":"Sample_Button_Website",
    "schemaVersion": "1.0",
    "extensions": [
    £
         "perspective": "common",
        "comment": "There is a special meta perspective called COMMON. Adding
                  contributions to this perspective will cause the extension to be
                   applied to All perspectives.",
        "features": [{
    "id": "sample.common.button.openWebsite",
             "toolItems": [
             Ł
                  "comment": "This code will display a custom Website button that opens
                                            the specified URL in an iFrame."
                  "id": "sample.iframeOpener.website"
                 "containerId": "com.ibm.bi.glass.navbarTrailingGroup",
"label": "Website",
"type": "Button",
```

```
"icon": "images/web.png",
"weight": 100,
"actionController": "bi/glass/api/IFrameOpener",
"options": {
    "url": "http://www.ibm.com/analytics/us/en/technology/products/cognos-
    "title": "Website"
    }
}]
}]
```

The button label is Website and the button icon is the web.png image this is in the images folder. The action controller is bi/glass/api/IFrameOpener and it requires two options, the web page URL (url) and the web page title to display when the page is opened (title). The other elements in the spec.json file are described in <u>"spec.json description" on page 81</u>.

Running a report

Use the bi/glass/api/ReportOpener action controller to run a report. The available options are shown here. Either the id or the path must be specified.

id

Specifies the storeID of the report to run.

path

Specifies the path of the report to run.

The SampleExtensionButtonReport.zip sample extension runs a report. The spec.json file is shown here.

```
£
     "name":"Sample_Button_Report",
     "schemaVersion": "1.0",
"extensions": [
     £
          "perspective": "common",
          "comment": "There is a special meta perspective called COMMON. Adding contributions
                    to this perspective will cause the extension to be applied to All
                    perspectives.",
         "features": [{
"id": "sample.common.button.openReport",
              "toolItems": [
              £
                    "comment": "This adds a button to the navbar to directly open a popular
report.",
                    "id": "sample.report.opener"
                    "containerId": "com.ibm.bi.glass.navbarLeadingGroup",
                   "label": "QTD revenue",
"type": "Button",
"icon": "common-report",
                   "weight": 800,
"comment": "The greater the weight, the higher the item appears in the
container.",
                   "actionController": "bi/glass/api/ReportOpener",
"options": {"path": ".public_folders/Samples/Extensions/QTD revenue"}
              }
              j
         }]
    313
```

The action controller is bi/glass/api/ReportOpener and it requires one option, the path to the report (path). .public_folders is the root folder for **Team content** and .my_folders is the root folder for **My content**. If the report name contains a slash(/), it must be encoded as %2F. The other elements in the spec.json file are described in <u>"spec.json description" on page 81</u>.

Opening a dashboard or a story

Use the bi/glass/api/DashboardOpener action controller to open a dashboard or s story. The available options are shown here. Either the id or the path must be specified.

id

Specifies the storeID of the dashboard or story to open.

path

Specifies the path of the dashboard or story to open.

The SampleExtensionButtonDashboard.zip sample extension opens a dashboard. The spec.json file is shown here.

```
Ł
     "name":"Sample_Button_Dashboard",
"schemaVersion": "1.0",
"extensions": [
     £
            perspective": "common",
           "comment": "There is a special meta perspective called COMMON. Adding contributions
                      to this perspective will cause the extension to be applied to
                     All perspectives.",
           "features": [{
"id": "sample.common.button.openDashboard",
                "toolItems": [
                £
                      "comment": "This code adds a button to directly open a core dashboard.",
                      "id": "sample.dashboard.opener",
"containerId": "com.ibm.bi.glass.navbarLeadingGroup",
"label": "Line dashboard",
"type": "Button",
"icon": "common-dashboard",
                      "weight": 900,
"comment": "The greater the weight, the higher the item appears in the
container.",
                      "actionController": "bi/glass/api/DashboardOpener",
"options": {"path": ".public_folders/Samples/Extensions/Line dashboard"}
                }
           }]
     717
```

The action controller is bi/glass/api/DashboardOpener and the only option is the path to the dashboard (path) which is determined in the same way as the path to a report. The other elements in the spec.json file are described in "spec.json description" on page 81.

Opening a folder

Use the bi/glass/api/FolderOpener action controller to open a folder. The available options are shown here. Either the id or the path must be specified.

id

Specifies the storeID of the folder to open.

path

Specifies the path of the folder to open.

11.0.6 skipAncestors

Specifies whether ancestor folders should be displayed (false) or hidden (true) when the folder is opened. The default value is false.

The SampleExtensionButtonFolder.zip sample extension opens a folder. The spec.json file is shown here.

```
"comment": "This code adds a button to easily access an important folder.",
"id": "sample.folder.opener",
"containerId": "com.ibm.bi.glass.navbarLeadingGroup",
"label": "2016 reports",
"type": "Button",
"icon": "common-folder",
"weight": 700,
"push": "true",
"comment": "The greater the weight, the higher the item appears in the
"actionController": "bi/glass/api/FolderOpener",
"options": {"path": ".public_folders/Samples/Extensions"}
}
}
```

This example has the element "push": "true". This element is required when opening a folder because a button to open a folder has two states, open and close. (This element is not used for a menu item.) If you press the button again after opening a folder, the folder is closed. The action controller is bi/ glass/api/FolderOpener and the only option is the path to the folder (path) which is determined in the same way as the path to a report. The other elements in the spec.json file are described in "spec.json description" on page 81.

Creating a custom action controller

You can create custom action controllers to perform actions that are not available with the built-in action controllers. Custom action controllers are written in JavaScript using the Asynchronous module definition (AMD) API.

The SampleExtensionContextMenuItem.zip sample extension implements a custom action controller that adds a menu item to the context menu for all report objects. The spec.json file is shown here.

```
£
    "name":"Sample_Context_Menu_Item",
"comment": "This extension will add a new menu item to the context menu for
                 all report objects."
    "comment": "The menu item will open an alert box that provides information
                          about the selected report.",
    "schemaVersion": "1.0",
    "extensions": [
    £
          perspective": "common",
         "comment": "There is a special meta perspective called COMMON. Adding contributions
              to this perspective will cause the extension to be applied to All perspectives.",
         "features": [{
    "id": "sample.home.context.item",
             "toolItems": [
             £
                  "id": "custom.context.menu.item1",
"containerId" : "com.ibm.bi.contentApps.listViewMenu"
                  "comment": "The containerId is the ID of the parent menu.",
                  "type": "MenuItem"
                  "actionController":
                     "v1/ext/Sample_Context_Menu_Item/js/controllers/SampleContextMenuItem",
                  "label": "Sample menu item",
"icon": "common-properties",
                  "weight":950
             }
             ]
        3]
    313
```

The custom action controller is the SampleContextMenuItem.js file and is located in the js/ controllers folder in the extension. The file is shown here.

/** * Licensed Materials - Property of IBM * IBM Cognos Products: BI Glass * Copyright IBM Corp. 2015 *

```
* US Government Users Restricted Rights - Use, duplication or disclosure restricted by
 GSA ADP Schedule Contract with IBM Corp.
 */
define([], function() {
     'use strict':
    var SampleAction = function(){
          * Called by the AppController whenever this view is created
          *
          * @public
          * @returns {Promise} promise resolved to the root DOM element for this view.
          */
         this.isVisible = function(context, target) {
    return target.options[0].type === 'report';
         ł,
         /**
          * Called by the AppController whenever this view is destroyed
          * @public
          */
         this.execute = function(context, target) {
              var info = 'This sample menu item extension opens an alert.
                  \nThe alert contains information about the selected report.
\n\nType: ' + target.options[0].type + '\nName: ' + target.options[0].name
                     \nID: ' + target.options[0].id;
              alert(info);
         }
    };
    return SampleAction;
});
```

This JavaScript code uses the Action API in a JavaScript AMD module. These modules require the JavaScript Q library. The Action API consists of two methods.

void execute(context, target)

context

This object contains utility methods.

target

This object contains information about the button or menu item that is created by the extension.

- For a button or menu item in an Application bar or navigation bar menu, this object contains the
 options property for the item.
- For a menu item in a contextual menu of an object, this object contains an array of the type, name, and Store ID of the object.

boolean isVisible(context, target)

This method is only applicable to menu items. The menu item is displayed if this method returns true; otherwise the menu item is hidden.

Adding a menu

You can add a menu and its associated menu items to the Application or Navigation bars.

The SampleExtensionMenuQuicklinks.zip sample extension adds a menu and six menu items. Part of the spec.json file is shown here.

```
{
    "name":"Sample_Menu_Quicklinks",
    "schemaVersion": "1.0",
    "extensions": [
    {
        "perspective": "common",
        "comment": "There is a special meta perspective called COMMON. Adding contributions
        to this perspective will cause the extension to be applied to All perspectives.",
```

```
"features": [{
    "id": "sample.common.menu.openMulipleItems",
                 "toolItems": [
                ş
                      "comment": "This code adds a custom menu item to the App Bar in the trailing
group.",
                      "id":"custom.appbar.trailingGroup.menu",
                      "containerId": "com.ibm.bi.
"type": "Menu",
"label": "Quick links",
"icon": "images/debug.svg",
                                            "com.ibm.bi.glass.appbarTrailingGroup",
                      "weight": 650
                γ,
                      "comment": "This code adds a submenu item to the custom menu created above.",
                      "id": "custom.appbar.trailingGroup.menuItem1",
                      "containerId" : "custom.appbar.trailingGroup.menu"
                      "comment": "The containerId is the ID of the parent menu.",
"type": "MenuItem",
                      "actionController": "v1/ext/Sample_Menu_Quicklinks/js/controllers/
SampleMenuQuicklinks"
                      "comment": "The actionController determines the actions for the menu item.",
                      "label": "Home",
"icon": "common-home",
                      "weight":900
                γ,
                      "comment": "This code adds a submenu item to the custom menu created above.",
"id": "custom.appbar.trailingGroup.menuItem2",
"containerId" : "custom.appbar.trailingGroup.menu",
                      "comment": "The containerId is the ID of the parent menu.",
"label": "Line dashboard",
                      "type": "MenuItem",
"icon": "common-dashboard",
                      "weight":800,
                      "actionController": "bi/glass/api/DashboardOpener",
"comment": "The actionController determines the actions for the menu item.",
"options": {"path": ".public_folders/Samples/Extensions/Line dashboard"}
                },...
          }]
     }]}
```

In this example, the menu is located in the Application bar trailing group.

Removing a user interface element

You can remove default user elements from all or specified views.

The SampleExtensionExcludeNotifications.zip sample extension removes the **Notifications** button from the Navigation bar. The spec.json file is shown here.

To determine the identifier to use in the values for the excludeItems element, see <u>"Determine the id of</u> a user interface object" on page 87.

Adding dashboard shapes

11.0.5 You can create custom shapes for use in dashboards.

The SampleExtensionCustomShape.zip sample creates three new shapes for use in dashboards. This sample is installed like any other extension. After it is installed, the following three new shapes appear in the **Shapes** panel.



Note : Only .svg files can be used as dashboard shapes.

The contents of the spec.json file are shown here.

```
£
"name":"Sample_Custom_Shape",
"comment":"This sample will add 3 custom images to the bottom of the Shape panel in
Dashboarding.",
     "schemaVersion": "2.0",
    "extensions": [
     £
         "perspective": "dashboard",
"comment": "The custom shapes are for the dashboard perspective only.",
         "features": [
         £
              "id": "com.ibm.bi.dashboard",
              "collectionItems": [
              Ł
                   'containerId": "com.ibm.bi.dashboard.shapes",
                   "id": "sample_custom_shape_music",
"name": "Music",
                   "options":-
                        "templatePath": "v1/ext/Sample_Custom_Shape/images/music_32.svg"
                   ş
              ł,
                   "containerId": "com.ibm.bi.dashboard.shapes",
                   "id": "sample_custom_shape_relationship"
"name": "Relationship",
                   "options":{
                        "templatePath": "v1/ext/Sample_Custom_Shape/images/relationship_32.svg"
                   }
              3,
                   "containerId": "com.ibm.bi.dashboard.shapes",
                   "id": "sample_custom_shape_traffic",
                   "name": "Traffic",
                   "options":{
                        "templatePath": "v1/ext/Sample_Custom_Shape/images/traffic_32.svg"
                   }
              }
         ٦
         ٦
    }]
}
```

The custom shapes are contained in the images folder of the sample.

Creating an image gallery

11.0.7 You can create an image gallery that contains custom images for use in dashboards and reports.

The <u>SampleExtensionCustomMedia.zip</u> and <u>SampleExtensionCustomMediaAll.zip</u> samples create new images for use in dashboards and reports. These samples are installed like any other extension.

After you create the image gallery, users can select images as follows:

- Dashboard authors can select the **Image library** tab in the **Widgets** panel. For more information, see the *Dashboards and Stories guide*.
- Report authors can select the **Toolbox** icon *A*, select **Layout**, drag the **Image** object *to* the report, and then double-click it. For more information, see the *Reporting guide*.

The images available in the image library have the following descriptions:

- · Lightning strike above a city at night
- Lightning in a dark purple sky
- · Heavy traffic in a city at night
- Hiker on a hill in the forest
- Several tents on a mountain
- Graph with increasing revenue highlighted
- · Graph of increasing revenue
- Group of people in a Call Center

Sample_Custom_Media

The contents of the spec.json file for Sample_Custom_Media is shown here.

```
£
      "name": "Sample Custom Media"
"comment":"This sample extension will add custom images to the bottom of the MEDIA panel in
Dashboarding.",
"comment":"We currently only support the addition of JPG and PNG files.",
      "schemaVersion": "1.0",
      "extensions": [{
           "perspective": "dashboard",
"comment": "The custom images are for the DASHBOARD perspective only.",
"features": [{
"id": "com.ibm.bi.common.media",
"COmmence ...
images below.",
    "collectionItems": [{
        "containerId": "com.ibm.bi.common.media",
        "'d": "customImage1",
        "'d": "customImage1",
                "comment": "This is the ID for the MEDIA panel. It will be the container for the
               "id": "customImage1",
"name": "Lightning above city",
"comment": "The NAME is the text of the tooltip for the image.",
                       "options": {
                            "altText": "Lightning strike above a city at night.",
                }
                       }, {<sup>5</sup>
"containerId": "com.ibm.bi.common.media",
                       "id": "customImage2",
"name": "Lightning in sky",
                       "options":
                            "altText": "Lightning in a dark purple sky.",
"imageLink": "v1/ext/Sample_Custom_Media/images/weather_background3.jpg"
                            }
                       }, {
                       "containerId": "com.ibm.bi.common.media",
                       "id": "customImage3",
"name": "Night city traffic",
                       "options": {
                              "altText": "Heavy traffic in a city at night."
                             "imageLink": "v1/ext/Sample_Custom_Media/images/
story_scene1_background.jpg"
                              Ś
                           £
                        "id": "customImage4",
"name": "Hiker on hill",
                        "options": {
                               "altText": "Hiker on a hill in the forrest.",
"imageLink": "v1/ext/Sample_Custom_Media/images/login_background.jpg"
                              }
                        }, {
    "containerId": "com.ibm.bi.common.media",
    "containerId": "com.ibm.bi.common.media",
                        "altText": "Several tents on a mountain."
                              "imageLink": "v1/ext/Sample_Custom_Media/images/welcome_background.jpg"
                              }
                             ş
                          "containerId": "com.ibm.bi.common.media",
```

```
"id": "customImage6",
    "name": "Increasing revenue highlighted",
    "options": {
        "altText": "Graph with increasing revenue highlighted.",
        "imageLink": "v1/ext/Sample_Custom_Media/images/
story_scene5_background2.jpg"
        }, {
        "containerId": "com.ibm.bi.common.media",
        "id": "customImage7",
        "name": "Increasing revenue",
        "options": {
            "altText": "Graph of increasing revenue.",
            "imageLink": "v1/ext/Sample_Custom_Media/images/
story_scene5_background.jpg"
        }]
    }]
}
```

Sample_Custom_Media_All

The contents of the spec.json file for Sample_Custom_Media_All is shown here.

```
£
     "name": "Sample_Custom_Media_All",
"comment":"This sample extension will add 8 custom images to the IMAGE LIBRARY tab in the
WIDGETS panel in Dashboarding and Stories.",
"comment":"It will also add the same 8 custom images to the IMAGE PICKER dialog in
Reporting under IMAGE GALLERY."
     "comment":"Only JPG and PNG files are supported at this time.",
"comment":"These types of extensions are not additive. You must specify all of the custom
images you require in one extension.",
     "comment":"Otherwise, the last uploaded extension (not UPDATED) will take precedence and
become your final library of images.
     "schemaVersion": "1.0",
     "extensions": [{
               "perspective": "common",
"comment": "The custom images will apply to all perspectives - reporting,
"comment": "This is the ID for the Widgets panel. It will be the container
for the images below.",
"collectionItems": [{
"containerId"
                                    "containerId": "com.ibm.bi.common.media",
                                   "id": "customImage1",
"name": "Lightning above city",
"comment": "The NAME is the text of the tooltip for the image
within the Image Library tab.'
                                    "options": {
for the selected image once it is placed on the dashboard.",

"imageLink": "v1/ext/Sample_Custom_Media_All/images/
SE_background.jpg"
                              }, {
    "containerId": "com.ibm.bi.common.media",
    "containerId": "com.ibm.bi.common.media",
                                    "name": "Lightning in sky",
                                    "options":
                                         "altText": "Lightning in a dark purple sky.'
                                         "imageLink": "v1/ext/Sample Custom Media All/images/
weather background3.jpg"
                                   ?
                              }, {
    "containerId": "com.ibm.bi.common.media",
    "containerId": "com.ibm.bi.common.media",
                                   "id": "customImage3",
"name": "Night city traffic",
                                    "options": {
                                         "altText":
                                                      "Heavy traffic in a city at night."
                                         "imageLink": "v1/ext/Sample_Custom_Media_All/images/
story scene1 background.jpg"
                                   }
                              }, {
                                    "containerId": "com.ibm.bi.common.media",
                                    "id": "customImage4",
```

```
"name": "Hiker on hill",
                                 "options": {
                                      "altText": "Backpacker on a hill in the forest."
                                      "imageLink": "v1/ext/Sample_Custom_Media_All/images/
login_background.jpg"
                                 3
                            }, {
                                 "containerId": "com.ibm.bi.common.media",
                                 "id": "customImage5",
"name": "Tents on mountain",
                                 "options": {
                                      "altText": "Several tents on a mountain."
                                      "imageLink": "v1/ext/Sample_Custom_Media_All/images/
welcome_background.jpg"
                                 }
                            3, {
                                 "containerId": "com.ibm.bi.common.media",
                                 "id": "customImage6",
"name": "Call center"
                                 "options": {
                                      "altText": "Group of people in a Call Center."
                                      "imageLink": "v1/ext/Sample_Custom_Media_All/images/
call_center.jpg"
                            }, {
                                 "containerId": "com.ibm.bi.common.media",
                                 "id": "customImage7",
"name": "Increasing revenue highlighted",
                                 "options": {
                                      "altText": "Graph with increasing revenue highlighted.",
                                      "imageLink": "v1/ext/Sample_Custom_Media_All/images/
story_scene5_background2.jpg"
                            }, {
    "containerId": "com.ibm.bi.common.media",
    "containerId": "com.ibm.bi.common.media",
                                 "id": "customImage8",
"name": "Increasing revenue",
"options": {
                                      'altText": "Graph of increasing revenue."
                                      "imageLink": "v1/ext/Sample_Custom_Media_All/images/
story_scene5_background.jpg"
                                 }
                            3
                       ]
                  }
              ]
         3
    ]
}
```

Adding a dashboard widget

11.0.5 You can create custom widgets for use in dashboards.

You can create custom widgets for use in dashboards. Custom widgets are installed in the same way as other extensions. The widget action is determined by a JavaScript file that can execute any JavaScript actions and displays the results in the widget.

A simple custom widget contains a spec.json file, a JavaScript file, and a folder that contains images that are used by the widget. The spec.json file is shown here.

```
{
    "name":"SampleWidgetExt_old",
    "schemaVersion": "1.0",
    "extensions": [
    {
        "perspective": "dashboard",
        "comment": "Sample custom widgets for dashboard",
        "features": [{
             "id": "com.ibm.bi.dashboard.widgets",
             "collectionItems": [{
              "containerId": "com.ibm.bi.dashboard.widgets",
              "id": "Hello",
              "title": "Hello!",
              "title": "v1/ext/SampleWidgetExt/images/ibm.png",
              "widget": "v1/ext/SampleWidgetExt/helloParam.js",
              "scroll": "scrollNone",
             "disableTitle": true,
             "disableTitle": true,
             "disableTitle": true,
             "disableTitle": "title": "title": true,
             "disableTitle": true,
```
```
"params" : {
"name": "IBM"
}]
}]
```

This widget calls the helloParam.js JavaScript file, which is shown here.

The images folder contains the ibm.png graphic image.

After the extension is installed, users who create a dashboard will see a new icon, **Custom widgets**(

After they click **Custom widgets**(), they can drag the custom widget onto the dashboard canvas. The custom widget is shown here.



Sample extensions

The following examples are available that illustrate the use of extensions.

These sample files are installed with the product in an Easy Installation, and are an option in a Custom Installation. After product installation, you can find them in the *installation_location*/samples/extensions folder.

SampleExtensionButtonDashboard.zip

An extension that adds a button to open a dashboard in all views.

SampleExtensionButtonFolder.zip

An extension that adds a button to open a folder in all views.

SampleExtensionButtonOpenPerspective.zip

An extension that creates a custom view and adds a button (⁽²¹⁾) to the navigation bar in all views that opens the custom view.

SampleExtensionButtonReport.zip

An extension that adds a button to open a report in all views.

SampleExtensionButtonWebsite.zip

An extension that adds a button to open a website in all views.

SampleExtensionContextMenuItem.zip

An extension that adds a menu item () to the pop-up menu for all report objects. When selected, the menu item opens an alert that displays information about the report.

11.0.7 SampleExtensionCustomMedia.zip

An extension that adds custom images that can be used in dashboards.

11.0.7 SampleExtensionCustomMediaAll.zip

An extension that adds custom images that can be used in both dashboards and reports.

11.0.5 SampleExtensionCustomShape.zip

An extension that adds custom shapes that can be used in dashboards.

SampleExtensionExcludeDelete.zip

An extension that removes the **Delete** button from all objects in all views.

SampleExtensionExcludeNotifications.zip

An extension that removes the Notifications button from all views.

11.0.6 SampleExtensionMenuQuicklinks.zip

An extension that adds a menu to all views.

SampleExtensionMenuUrlLinks.zip

An extension that demonstrates how to add a menu to the AppBar that contains two menu items that open external URLs.

SampleExtensionOpenFolderShowHideParent.zip

An extension that shows the use of the skipAncestors option when opening a folder.

SampleExtensionsAll.zip

An extension that combines the SampleExtensionButtonDashboard.zip, SampleExtensionButtonFolder.zip, SampleExtensionButtonWebsite.zip, SampleExtensionButtonReport.zip, SampleExtensionContextMenuItem.zip, SampleExtensionExcludeDelete.zip, SampleExtensionMenuQuicklinks.zip, and SampleExtensionExcludeNotifications.zip extensions.

11.0.5 SampleExtensionTabs.zip

An extension that adds a collection of tabs to the home view that provide quick access to certain reports and dashboards.

Using the tabs collection extension

111.0.5 This task shows you how to install and use the tabs collection extension.

About this task

The tabs collection extension emulates the portal pages available in older versions of IBM Cognos Business Intelligence. This extension adds three buttons to the navigation bar as shown here.



Each button corresponds to a tab in a portal page. Click the **Overview** button to display a subfolder that contains two items, the **Product line by year** dashboard, and the **Quantity sold** report. The subfolder is equivalent to a subtab in a portal page.

Team content	(
Cverview	Product line by year
Revenue	and Guarety sold
Retailer	

Click the **Revenue** button to display a subfolder that contains three items, the **By year** dashboard, the **By quarter** folder that contains four reports, and the **QTD** report.

Overview	By year
Revenue	🗧 🛅 By quarter
Retailer	ato 🖪

Click the **Retailer** button to open a dashboard.

Procedure

Upload the Samples_for_Install deployment archive. (If not already done.)

- 1. Use Manage > Administration console to open IBM Cognos Administration.
- 2. On the Configuration tab, click Content Administration.
- 3. On the toolbar, click the **New Import** button.
- 4. Select **Samples_for_Install** in the first step of the **New Import** wizard and complete the remaining steps of the wizard.

Upload the SampleExtensionTabs.zip sample extension.

5. In the Manage > Customizations slide-out panel, select the Extensions tab, click Upload

extension(), browse to the *<installation_location>/*samples/extensions folder, and select SampleExtensionTabs.zip.

Results

You can now use this extension.

Creating views

The IBM Cognos Analytics user interface consists of views, such as home, sign-in, authoring, dashboard, and modeling. You can create custom views to augment the built-in views.

Views are defined in a spec.json file that is contained in the root of the view .zip file. Custom views also include an HTML div element that replaces the central pane of the Cognos Analytics user interface. Custom views can also add or remove menus and buttons from the Application and Navigation bars, or remove one or both of these bars altogether. The structure and contents of the spec.json file is described in "spec.json description" on page 81. The high-level structure of the file is show here.

```
{
    "name": "<name>",
    "schemaVersion": "2.0",
    "extensions": [{
        "perspective":"<view_name>",
        "type":"<home_or_login>",
        "features": [{
            "id": "<id>>",
            "toolItems": [<tool_item1>,<tool_item2>,...],
            "toolItems": [<collection_item1>,<collection_item2>,...],
            "excludeFeatures": [<exclude_feature1>,<exclude_feature2>,...],
            "excludeItems": [<exclude_item1>,<exclude_item2>,...],
            "excludeItems": [<exclude_item1>,<exclude_feature2>,...],
            "excludeItems": [<exclude_item1>,<exclude_item2>,...],
            "excludeItems": [<exclude_item1>,<exclude_feature2>,...]
```

Views are packaged as extensions and a view .zip file can contain extension elements as well. For example, the SampleExtensionButtonOpenPerspective.zip sample defines a custom view and also adds a button to the Navigation bar of the home view that displays the custom view.

The content element contains the path to, and the name of, the JavaScript file that runs in order to create the custom view. The options element contains any options required by the JavaScript file. The JavaScript files uses the Asynchronous module definition (AMD) API.

A special type of view is a sign-in view. This type of view allows you to create a custom sign-in page for Cognos Analytics. The value of the type element determines if a view is a sign-in view (value is login) or not (value is home).

Unlike extensions, views have to be explicitly invoked in order for them to open. There are three ways to invoke a view.

- A button or menu item can be defined to open the view.
- The view can be opened by using a URL as follows.

```
http://<server>:<port>/bi/?perspective=<view_name>
```

• The view can be set to be the default home view for a user or for a role, or for all users. For more information, see "Managing themes, extensions, views, and parameters" on page 79.

Creating a view (other than a sign-in view)

The SampleWelcome.zip sample is an example of a view that replaces the built-in home view with an alternate version that includes branding for the **Sample Outdoors Company**.

The SampleWelcome.zip sample contains a spec.json file that defines the view. This file is shown here.

```
£
  "name": "Sample_Welcome",
"schemaVersion": "2.0",
   extensions": [{
     "perspective":"Sample welcome",
"type":"home",
     "features": [{
        'id": "com.sample.welcome"
       "excludeItems": ["com.ibm.bi.glass.common.cognosLogo"],
        "toolItems": [{
           'id": "brandLogoHomePage"
          "containerId" : "com.ibm.bi.glass.appbarLeadingGroup",
          "type": "bi/glass/app/plugins/GlassPlugin",
"class": "cognosIcon cognosLogo",
          "label":"theme.current.brandTextSmall",
"icon": "theme.current.images.brandIconSmall",
          "weight": 995
          3],
        "content": {
           "type":"v1/ext/Sample_Welcome/js/views/SampleWelcomeView",
          "options": {
"info":{
               "title":"Sample welcome",
"icon":"v1/ext/Sample_Welcome/images/bee_blue.svg"
             }
         }
       3,
```

```
"cssStyles": [
    "v1/ext/Sample_Welcome/css/SampleWelcomeCSS.css"
    ]
}]
}
```

The view is referred to as Sample welcome in the managing customization panels. The spec.json file links to a SampleWelcomeView.js file in the js/views subfolder of the view. The "type": "home" entry indicates this view can be set to be the default home view. The cssStyles element defines the .css file used when displaying the view.

The SampleWelcomeView.js file is shown here.

```
/**
 * Licensed Materials - Property of IBM
 *
 * IBM Cognos Products: BI Glass
 * Copyright IBM Corp. 2015
 * US Government Users Restricted Rights - Use, duplication or disclosure restricted
 * by GSA ADP Schedule Contract with IBM Corp.
define(['q',
    'text!./SampleWelcomeView.html',
    'text!./SampleWelcomeView.html) {
  ], function(Q, html) {
'use strict';
  var ContentView = function(){
    /**
     * Called by the AppController whenever this view is created
     *
     * @public
     * @returns {Promise} promise resolved to the root DOM element for this view.
     */
    this.open = function(context, options) {
      this.logger = context.logger;
      this.options = options;
      var deferred = Q.defer();
      var root = document.createElement('div');
      root.setAttribute('class','welcome');
      root.innerHTML = html;
      deferred.resolve(root);
      return deferred.promise;
    };
    /**
     * Called by the AppController whenever this view is destroyed
     * @public
     */
    this.close = function() {
      this.logger.info('close');
    /**
     * Called by the AppController whenever this view is shown
     *
     * @public
     */
    this.onShow = function() {
      this.logger.info('onShow');
    };
    /**
     * Called by the AppController whenever this view is hidden
     * @public
     */
    this.onHide = function() {
      this.logger.info('onHide');
    };
    /**
     * Called by the AppController whenever display Info is required for this view
```

```
*
 * @public
 * @returns {Object} displayInfo - The displayInfo for this view.
 * @returns {string} displayInfo.title - The title.
 * @returns {string} displayInfo.icon - The icon.
 */
this.getDisplayInfo = function() {
 this.logger.info('getDisplayInfo');
 return {
    'title':this.options.info.title,
    'icon': this.options.info.icon
    };
 };
};
```

This file refers to the SampleWelcomeView.html that is displayed when the view is invoked.

This JavaScript code uses the View API in a JavaScript AMD module. This implementation uses the JavaScript Q library. The View API consists of the following methods. methods.

promise open(content. options)

This method is invoked when the view is opened. It returns a Q promise object with the DOM element that represents the view as the resolved value.

context

Contains the context object.

options

Contains the options included in the spec.json file.

void close()

Invoked just before closing the view.

void onShow()

Invoked just before showing the view.

void onHide()

Invoked just before hiding the view.

getDisplayInfo()

Returns the title and associated icon of the view.

Creating a sign-in view

With a custom sign-in view, you can replace the default IBM Cognos Analytics sign-in page. You can use your own branding and make other changes to the sign-in page.

A high-level overview of the structure of the JavaScript required to perform a sign-in is shown here.

The SampleLogin.zip sample is an example of a view that replace the built-in sign-in view with an alternate version. The SampleWelcome.zip sample contains a spec.json file that defines the view. This file is shown here.

```
},
"cssStyles": ["v1/ext/Sample_Login/login/css/SampleLoginCSS.css"]
}]
}
```

This spec.json file is similar to the same file for the SampleWelcome.zip sample except that the value of the type element is login and the Application and Navigation bars are excluded from this view.

A high-level overview of the structure of the JavaScript required to perform a sign-in is shown here.

```
/**
 * @typedef {Object} LoginError
 * @property {string} message - error message
 */
/**
 * performs a login
 *
 * @public
 * @param {Object[]} loginPrompts - object containing the login prompts
 * @param {string} loginPrompts[].name - name of the login prompt
 * @param {string} loginPrompts[].value - value of the login prompt
 * @return {Promise<undefined|LoginError} promise resolved with no object when
 * the login is successful, rejected with an error when it fails.
 *
 */
signin: function(loginPrompts)</pre>
```

The SampleLoginView.js file is shown here.

```
/**
 * Licensed Materials - Property of IBM
 * IBM Cognos Products: BI Glass
 * Copyright IBM Corp. 2017
 * US Government Users Restricted Rights - Use, duplication or disclosure restricted
 * by GSA ADP Schedule Contract with IBM Corp.
 */
define(['q',
    'text!./SampleLoginView.html',
  ], function(Q, html) { 'use strict';
  var ContentView = function(){
     /**
      * Called by the AppController whenever this view is created
      * @public
      * @returns {Promise} promise resolved to the root DOM element for this view.
     this.open = function(context, options) {
        this.logger = context.logger;
        this.options = options;
        var deferred = Q.defer();
        var root = document.createElement('div');
        root.setAttribute('class','welcome');
        root.innerHTML = html;
        var loginBtn = root.getElementsByClassName('sample.loginBtn')[0];
loginBtn.onclick = function() {
          document.getElementsByClassName('sampleIncorrectLoginText')[0].innerHTML='';
var uid = document.getElementsByClassName('sample.username')[0].value;
var pwd = document.getElementsByClassName('sample.password')[0].value;
var loginPromote = [
           var loginPrompts = [
             I rogini fumples = [ 'anme:'CognosEx'},
{name:'h_CAMNamespace',value:'CognosEx'},
{name:'h_CAM_action',value:'logonAs'},
{name:'CAMUsername',value:uid},
{name:'CAMPassword',value:pwd}
           1:
           this.signin(loginPrompts).catch(this._loginError.bind(this));
        }.bind(this);
        deferred.resolve(root);
        return deferred.promise;
     },
```

```
/**
     * Called by the AppController whenever this view is destroyed
     *
     * @public
     */
    this.close = function() {
      this.logger.info('close');
    },
    /**
     * Called by the AppController whenever this view is shown
     *
     * @public
     */
    this.onShow = function() {
      this.logger.info('onShow');
    3,
    /**
     *
     * The live code below retreives the product's error message.
     * If you would like to include your own error message, use the following
     * commented code instead:
     * this._loginError = function() {
         document.getElementsByClassName('sampleIncorrectLoginText')[0].innerHTML=
     *
          'You have entered an invalid username/password combination.';
     *
         this.logger.error('loginError', arguments);
     *
     *
         },
     *
     *
     */
    this._loginError = function(error) {
      document.getElementsByClassName(
      'sampleIncorrectLoginText')[0].innerHTML=error.message;
      this.logger.error('loginError',arguments);
    ł,
    /**
     * Called by the AppController whenever this view is hidden
     *
     * @public
     */
    this.onHide = function() {
      this.logger.info('onHide');
    ł,
    /**
     * Called by the AppController whenever display Info is required for this view
     * @public
     * @returns {Object} displayInfo - The displayInfo for this view.
* @returns {string} displayInfo.title - The title.
     * @returns {string} displayInfo.icon - The icon.
    this.getDisplayInfo = function() {
    this.logger.info('getDisplayInfo');
      return {
        'title':this.options.info.title,
'icon': this.options.info.icon
      };
    }
 };
 return ContentView;
});
```

A sign-in view uses one additional method.

promise login(credentials)

This method submits a sign-in request and returns a promise object that is rejected if the sign-in attempt fails.

credentials

Contains the sign-in information.

```
[{name:'CAMNamespace',value:'<namespace>'},
{name:'h_CAM_action',value:'logonAs'},
{name:'CAMUsername',value:<username>},
{name:'CAMPassword',value:<password>}]
```

Creating a sign-in view with a namespace prompt

Using a custom sign-in view with a namespace prompt, you can replace the default IBM Cognos Analytics sign-in page. You can specify that the user must select from a list of namespaces when signing in. You can also use your own branding and make other changes to the sign-in page.

A high-level overview of the structure of the JavaScript required to perform a sign-in is shown here.

The SampleLoginMultiple.zip sample is an example of a view that replace the built-in sign-in view with an alternate version. The SampleLoginMultiple.zip sample contains a spec.json file that defines the view. This file is shown here.

```
Ł
    "name": "Sample_Login_Multiple",
                      "Ž.O",
    "schemaVersion":
    "extensions": [{
    "perspective":"sampleLoginMultiple",
        "type": "login",
        "features": [{
"id": "com.sample.login.multiple",
             "excludeItems":["com.ibm.bi.glass.navbar","com.ibm.bi.glass.appbar"],
             "toolItems": [],
             "content":
                 "type":"v1/ext/Sample_Login_Multiple/login/js/views/SampleLoginView",
                 "options":
                      "info":{
                              "title":"Sample login namespaces"
                              ş
                 }
             },
"cssStyles": ["v1/ext/Sample_Login_Multiple/login/css/SampleLoginCSS.css"]
        }]
    }]
}
```

This spec.json file is similar to the same file for the SampleLogin.zip sample in that the Application and Navigation bars are excluded from this view.

Sample views

The following examples are available that illustrate the use of views.

These sample files are installed with the product in an Easy Installation, and are an option in a Custom Installation. After product installation, you can find them in the *installation_location*/samples/ extensions folder.

```
SampleLogin.zip
```

A replacement view for the Cognos Analytics sign-in page.

```
SampleLoginMultiple.zip
```

A replacement view for the Cognos Analytics sign-in page that prompts the user for a namespace.

```
SampleWelcome.zip
```

A replacement view for the Cognos Analytics welcome page.

Using the customized welcome view

This task shows you how to install and use the custom welcome view.

Procedure

Upload the Samples_for_Install deployment archive. (If not already done.)

1. Use Manage > Administration console to open IBM Cognos Administration.

- 2. On the **Configuration** tab, click **Content Administration**.
- 3. On the toolbar, click the **New Import** button.
- 4. Select **Samples_for_Install** in the first step of the **New Import** wizard and complete the remaining steps of the wizard.

Upload the sample extensions.

5. In the Manage > Customizations slide-out panel, select the Extensions tab, click Upload

extension(), browse to the *<installation_location>/*samples/extensions folder, and select SampleWelcome.zip.

- 6. Repeat the preceding step for SampleExtensionsAll.zip.
- 7. In your web browser, type <webserver_name>:<port_number>/bi/? perspective=sampleWelcome to view the customized welcome view.

Results

The customized welcome view is shown here. It has a new menu (**Quick links**) on the application bar and new buttons on the navigation bar (**Line dashboard**, **QTD revenue**, **2016 reports**, and **Website**). The **Notifications** button on the navigation bar is removed. The main screen has a new image, new text, and a link to a video.



Using the customized sign-in view

This task shows you how to install and use the custom sign-in view.

Procedure

- 1. Extract the files in SampleLogin.zip.
- 2. Edit login/js/views/SampleLoginView.js and locate the line that contains
 {name: 'CAMNamespace', value: 'CognosEx'}.
- 3. Replace CognosEx with the name of one of your authentication namespaces (as defined in **IBM Cognos Configuration**).
- 4. Save SampleLoginView.js and re-create the .zip file.
- 5. In the Manage > Customizations slide-out panel, select the Extensions tab, click Upload

extension(), browse to the *<installation_location>/*samples/extensions folder, and select SampleLogin.zip.

- 6. On the **Views** tab, click > next to the default sign-in view. Select the **Sample login** view as the default sign-in view.
- 7. Sign out of IBM Cognos Analytics.

8. Access your Cognos Analytics server.

Results

The customized sign-in view is shown here. It has a customized background and new text in the sign-in dialog box.



Managing themes, extensions, views, and parameters

You manage themes, extensions, views, and parameters with the **Managing** > **Customization** slide-out panel. You can upload, delete, and modify themes, extensions, views, and parameters. You can also set a default theme for all users, and set default home and sign-in views.

The **Managing** > **Customization** slide-out panel has four tabs, **Themes**, **Extensions**, **Views**, and **Parameters**. You upload themes on the **Themes** tab, and you upload extensions and views on the **Extensions** tab.

Uploading themes

To upload a theme, on the **Themes** tab, click **Upload theme** ($\stackrel{\frown}{\longrightarrow}$) and browse to the theme in the file system. The theme is uploaded and validated. If the theme is invalid, an error message is displayed.

Otherwise, the theme is added to the list of available themes. You can click **More** () next to a theme, to update, delete, or download the theme.

Tip: If you apply a theme to a distributed environment, wait at least five minutes for it to take effect.

Setting a default theme

You can select a theme to be the default theme for all users. On the **Themes** tab of the **Managing** > **Customization** slide-out panel, select the check box next to a theme, and them click **Apply**.

You can also set default themes for roles in the **Manage** > **Accounts** slide-out panel. If a user has a role which has a default theme, that theme is used instead of the theme selected for all users. For more information, see "Customizing roles" on page 6.

Uploading extensions and views

To upload an extension or a view, on the **Extensions** tab, click **Upload extension**(\square) and browse to the extension or view in the file system. The extension or view is uploaded and validated. If the extension is invalid, an error message is displayed. Otherwise, the extension is added to the list of uploaded themes.

You can click **More** () next to an extension or view to update, delete, or download the extension or view.

Setting a default home view

On the **Views** tab of the **Managing** > **Customization** slide-out panel, click > next to the default home view. You can now browse for a dashboard or report to be the default home view, or you can select a view in the list of home views to be the default home view for all users.

You can also set default home views for roles in the **Manage** > **Accounts** slide-out panel. If a user has a role which has a default home view, that view is used instead of the home view selected for all users. For more information, see "Customizing roles" on page 6.

A user can also select a personal default home view from any view. In any view, a user can click More

(), and then click **Set as home** to define a personal default home view. This default home view takes precedence over default home views created for roles or all users.

Setting a default sign-in view

On the **Views** tab of the **Managing** > **Customization** slide-out panel, click > next to the default sign-in view. You can now select a view in the list of sign-in views to be the default sign-in view for all users.

Setting parameters that can be used across reports

Click the Parameters tab of the Managing > Customization slide-out panel.

- To use parameters from existing reports, click **Import** and navigate to a report that you know contains parameters. Select a parameter to customize and click **Set values**. Select the value that you want to set as the default value.
- To create a new parameter, click **New** and enter a parameter name. Click **More** (), and then click **Properties**. In the **Custom values** section, click **Set values**. For each parameter value, click **New** and enter a value.

You can also set default report parameters for roles in the **Manage** > **Accounts** slide-out panel. If a user has a role with customized parameters, when they run any report with those parameters, they will see the default values that you set. For more information, see <u>"Customizing roles"</u> on page 6.

Running Cognos Analytics with customized extensions and views disabled

If an uploaded extension or view contains errors, it can render IBM Cognos Analytics unusable. In this case, you can run Cognos Analytics with customized extensions and views disabled.

Procedure

Start Cognos Analytics by typing the URL <webserver_name>:<port_number>/bi/? factoryMode=true.

Results

Cognos Analytics starts with all extensions disabled. You can now correct or delete your customized extensions or views before you restart Cognos Analytics with the standard URL.

spec.json description

The spec.json file in an extension defines the additions and deletions the extension makes to the default IBM Cognos Analytics user interface. The structure and contents of this file are explained here.

The structure and contents that are described here are provisional. They can change in future releases of Cognos Analytics. These changes may not be backward compatible.

name

Specifies the name of the extension. The name can contain alphanumeric characters, underscores (_), and spaces (_).

schemaVersion

Specifies a numeric value for the schema version. Can be 1.0 or 2.0. The default value is 1.0.

extensions

Contains an array of perspective objects.

perspective

Specifies the view that is being extended. The options are the following.

common

Applies to all views.

<view_name>

Applies to the *<view_name>* view, which can be a built-in view (home, authoring, dashboard, or modeller) or an uploaded view.

type

If the extension is a view, specifies the type. The possible values are login for a sign-in view and home for a home view. This element is only used in schema version 2.0. If it is omitted and schema version 2.0 is specified, then the view is not included in the list of possible default home or sign-in views.

lensable

If false, this view is not included in the list of views for which features can be omitted. For more information, see "Customizing roles" on page 6.

The default value is true.

comment

An optional comment.

features

Contains an array of feature groupings.

id

Specifies the unique identifier of the feature.

toolItems

Contains an array of user interface elements that are being added.

id

The unique identifier for the new user interface element.

containerId

Specifies the placement of the user interface element.

• If the user interface element is a menu or a button, the element is located in the application or navigation bars as shown in the following graphic.



The values of containerId corresponding to the button or menu placement are shown in the following list.

- 1. com.ibm.bi.glass.navbarLeadingGroup
- 2.com.ibm.bi.glass.navbarTrailingGroup
- 3.com.ibm.bi.glass.appbarLeadingGroup
- 4.com.ibm.bi.glass.appbarCenterGroup
- 5.com.ibm.bi.glass.appbarTrailingGroup
- If the user interface element is a menu item, the value of containerId is the id of the menu that contains the menu item. For information on how to determine an id, see "Determine the id of a user interface object" on page 87.

label

Specifies the text label for the user interface element. This text cannot be localized.

type

Specifies the user interface element type. The possible values are shown here.

- Button
- Menu
- MenuItem

icon

Specifies the user interface element image to be displayed. The path is relative to the image file in the extension zip archive.

weight

Specifies a numeric value that determines the placement of the user interface element in the container. A higher value moves up the element in the container.

push

Specifies whether when the button is pressed a second time, the action of the first press is undone. For example, opening and then closing a folder. The value can be true or false. The value must be true for a button that opens a folder.

coachMark

Specifies a coach mark.

title

Specifies the title of the coach mark.

contents

Specifies the contents of the coach mark.

actionController

Specifies the action to be taken when the user interface element is clicked. The available actions are listed here.

bi/glass/api/IFrameOpener

Opens a web page.

bi/glass/api/ReportOpener

Opens a particular report.

bi/glass/api/DashboardOpener Opens a particular dashboard.

bi/glass/api/FolderOpener

Opens a particular folder.

v1/ext/<name>/js/controllers/controller_name

Runs the custom controller that is packaged in the extension. The controller is the file js/controllers/controller_name.js.

options

Contains an array of options to pass to the action controller. The options vary depending on which action controller is used. For the options used by the built-in action controllers, see "Using built-in action controllers" on page 59.

collectionItems

Contains an array of user interface elements that are being added.

containerId

Specifies where the user interface element is located.

id

Specifies the unique identifier of the user interface element.

content

Contains definitions for a view.

type

Contains a link to the JavaScript file to run when this view is invoked.

options

Contains parameters to be passed to the JavaScript file.

cssStyles

Contains an array of links to .css files to be used for this view.

excludeFeatures

Contains an array of ids of user interface features to exclude. This feature cannot be applied to the common view.

For information on how to determine an id, see <u>"Determine the id of a user interface object"</u> on page 87.

excludeItems

Contains an array of ids of user interface items to exclude. This feature cannot be applied to the common view.

For information on how to determine an id, see <u>"Determine the id of a user interface object"</u> on page 87.

JSON schema validation

When you upload a spec.json file, it is validated against the following schema.

```
"properties": {
                      "id": {
                             "$ref": "#/definitions/noEmptyString"
                 },
"title": {
    "type": "string"
                   },
"type": {
    "$ref": "#/definitions/noEmptyString"
                    },
"actionController": {
    "#/definiti

                              "$ref": "#/definitions/noEmptyString"
                   },
"label": {
    "$ref": "#/definitions/noEmptyString"
                    },
"containerId": {
    "#/def"
}
                              "$ref": "#/definitions/noEmptyString"
                  },
"icon": {
    "type": "string"
                  },
"weight": {
    "type": "number"
                  },
"class": {
    "type": "string"
                   },
"comment": {
    "type": "string"
                   },
"options": {
    "type": "object"
                 },
"push": {
    "type": "string",
    "enum": [
    "+rue",
                                    "true",
"false"
                            ]
               },
"coachMark": {
  "type": "object",
  "properties": {
    "title": {
    "type": "string"
    ,
                                       "contents": {
_ "type": "string"
                                     }
                             },
"additionalProperties": false,
                              "required": [
                                      "title"
                            ]
                  },
"lensable": {
"type": "boolean"
         },
"required": [
           ]
},
"collectionItem": {
    "type": "object",
    "properties": {
    "id": {
    "id: {
    "id": {
    "id": {
    "id": {
    "id": {
    "id: {
    "id: {
    "id": {
    "id": {
    "id: {
    "id: {

                             "$ref": "#/definitions/noEmptyString"
                   },
"containerId": {
    "$ref": "#/definitions/noEmptyString"
                    "label": {
"$ref": "#/definitions/noEmptyString"
                  },
"lensable": {
    "type": "boolean"
          },
"required": [
                    "id",
```

```
"containerId"
                ]
  },
"collectionContainerItem": {
    "" "cbiact"
                    "type": "object",
"properties": {
                                    "id": {
                                                "$ref": "#/definitions/noEmptyString"
                               },
"label": {
    "$ref": "#/definitions/noEmptyString"
                               },
"lensable": {
    "type": "boolean"
                },
"required": [
                  ]
  },
"collectionContainer": {
    "collect",
    "collect",
}
                "type": "object",
"properties": {
"id": {
"$ref": "#/definitions/noEmptyString"
                            },
"items": {
    "type": "array",
    "items": {
        "sref": "#/definitions/collectionContainerItem"
        "$ref": "#/definitions/collectionContainerItem"
        "statement
         "stateme
                             },
"lensable": {
  "type": "boolean"
                  },
"additionalProperties": false,
                "required": [
"id"
                  ]
},
"feature": {
    "type": "object",
    "type": {
    "type: {
    "tyt
                                    "id": {
                                               "$ref": "#/definitions/noEmptyString"
                               },
"excludeItems": {
    "array"
                                               "type": "array",
"items": {
    "$ref": "#/definitions/noEmptyString"
                                               }
                            },<sup>$</sup>
"excludeFeatures": {
    "type": "array",
    "items": {
        "$ref": "#/definitions/noEmptyString"
        "
                               },
"toolItems": {
    ". "arr
                                               "type": "array",
"items": {
    "$ref": "#/definitions/toolItem"
                                               }
                           },
"content": {
  "type": "object",
  "properties": {
    "type": {
    "type": "#/de
                                                              "type": {
    "$ref": "#/definitions/extType"
                                                           },
"options": {
"type": "object"
                                               },
"additionalProperties": false,
                                                 "required": [
                                                              "type"
                                               1
                              },
"cssStyles": {
    "type": "array",
```

```
"items": {
____$ref": "#/definitions/extType"
                 ł
           },<sup>$</sup>
"collectionItems": {
    "type": "array",
    "items": {
        "$ref": "#/definitions/collectionItem"
        "
            },
"collectionContainers": {
    "..."array";
}
                 "type": "array",
"items": {
    "$ref": "#/definitions/collectionContainer"
                 }
            },
"comment": {
    "type": "string"
            },
"lensable": {
    "type": "boolean"
        },
"additionalProperties": false,
        "required": [
            "id"
        1
   },
"extension": {
    "type": "object",
    "properties": {
        "perspective": {
        "$ref": "#/def:
                  "$ref": "#/definitions/noEmptyString"

},
"features": {
    "type": "array",
    "minItems": 1,
    "items": {
        "$ref": "#/definitions/feature"
        "
}

},
"type": {
    "type": "string",
    "enum": [
        "home",
        "login"
}

                 ]
            },
"lensable": {
    "type": "boolean",
    "type": true
            },
"comment": {
    "type": "string"
         7
         "additionalProperties": false
    }
},
"properties": {
    bomeVersion
     "schemaVersion": {
"type": "string",
"enum": [
            "1.0",
"2.0"
        ]
   },
"name": {
    "type": "string",
    "pattern": "[a-zA-Z0-9_ ]+$"
    ". {
    },
"extensions": {
    "type": "array",
    ".isTtems": 1,
         "minItems": 1,
        "items": {
"$ref": "#/definitions/extension"
        }
   },
"comment": {
  "type": "string"
},
```

```
"additionalProperties": false,
"required": [
    "name",
    "extensions"
]
}
```

Determine the id of a user interface object

You need to determine the id of an existing user interface element when you create extensions that exclude features or items, or that add menu items to an existing menu.

Procedure

- 1. If you are running Cognos Analytics 11.0.7 or later, follow these steps:
 - a) Open the Windows Services window and stop the IBM Cognos service.
 - b) Open the file *installation_location*\wlp\usr\servers\cognosserver \bootstrap.properties.
 - c) Add the following line:

disableXSRFCheck=true

- d) Save the file.
- e) Restart the IBM Cognos service.
- 2. Sign in to your IBM Cognos Analytics server.
- 3. Type the following URL in a web browser: http://<server_name>:<port>/bi/v1/ perspectives/<view> where <view> is the view (home, authoring, dashboard, or modeller) that contains the user interface object.

A JSON file is returned that contains a description of all the user interface elements in the view.

4. Search for the hover text for the user interface element.

The id and featureId of the user interface items are displayed following the hover text.

Example

Searching for **Delete** in the JSON file that is returned for the home view displays the following part of the file.

```
"label": "Delete",
"id": "com.ibm.bi.contentApps.deleteAction.DeleteAction",
"featureId": "com.ibm.bi.contentApps.deleteAction"
```

The values of id and featureId can be used in your extension to exclude this button or feature, if wanted.

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Chapter 9. Enabling a production environment

IBM Cognos Programs are licensed under specific terms and conditions. You must have the appropriate entitlement to select the production environment type.

The **Configure and manage the system** administration capability is required to manage system settings.

Non-production limitation

If your IBM Cognos Program is designated as "Non-Production", the Program can only be deployed as part of the Licensee's internal development and test environment for internal non-production activities, including but not limited to testing, performance tuning, fault diagnosis, internal benchmarking, staging, quality assurance activity and/or developing internally used additions or extensions to the Program using published application programming interfaces. Licensee is not authorized to use any part of the Program for any other purposes without acquiring the appropriate production entitlements.

IBM Cognos Analytics Version 11.0: Managing User Guide

About this guide

This information is intended for use with the manage options in IBM Cognos Analytics.

Finding information

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

Accessibility Features

IBM Cognos Analytics has accessibility features that help users who have a physical disability, such as restricted mobility or limited vision, to use information technology products. The availability of accessibility features can vary however, if other pages and components that do not support accessibility are added to the IBM Cognos Analytics user interface.

IBM Cognos HTML documentation has accessibility features. PDF documents are supplemental and, as such, include no added accessibility features.

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.

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