IBM Cognos Analytics
Version 11.1.0

Getting Started User Guide

IBM

Contents

Chapter 1. Cognos Analytics offerings

IBM® Cognos® Analytics is available through multiple offerings. Each offering might support different components, features, data sources, documentation, and other aspects of the product.

The following Cognos Analytics offerings are available in version 11.1.7:

Table 1. Cognos Analytics offerings	
Offering	**Description**
Cognos Analytics on Premises	Cognos Analytics that is installed and run in a customer's environment. Long Term Support version is 11.1.7.
Cognos Analytics Trial	Cognos Analytics on Demand, 30 day trial version, that is available in the Premium tier. The product version is updated to the latest version upon availability.
Cognos Analytics on Demand	Cognos Analytics installed on Cloud that is available digitally via self-service. The product version is updated to the latest version upon availability. This offering has three tiers: Standard, Plus, and Premium.
Cognos Analytics on Cloud Hosted	Cognos Analytics that is hosted on a cloud. The product version is updated in consultation with the customer, and it must be one of the three latest versions of Cognos Analytics. For example, if the latest version of Cognos Analytics is 11.1.7, the customer must be on version 11.1.5 or later.
Cognos Analytics for Cloud Pak for Data	Cognos Analytics as an add-on in the IBM Cloud Pak for Data. The Cognos Analytics version is updated upon availability.

For more information on Cognos Analytics on Cloud Hosted, see the license terms for this offering.

The following table specifies the functionality that is supported by different offerings of Cognos Analytics, version 11.1.7 and later. For Cognos Analytics on Demand, "Yes" with no further qualification means that the feature is applicable to all tiers. "N/A" means "Not applicable".

Table 2. Supported functionality between Cognos Analytics offerings					
Functionality	**Cognos Analytics on-premises**	**Cognos Analytics trial**	**Cognos Analytics on Demand**	**Cognos Analytics on Cloud Hosted**	**Cognos Analytics for Cloud Pak for Data**
Portal	Yes	Yes	Yes	Yes	Yes
Data modules (self-service modeling)	Yes	Yes	Yes	Yes	Yes
Dashboards and stories	Yes	Yes	Yes	Yes	Yes
Explorations (10)	Yes	Yes	Plus, Premium	Yes	Yes
Reporting and scheduling	Yes	Yes	Premium	Yes	Yes

Table 2. Supported functionality between Cognos Analytics offerings (continued)

Functionality	Cognos Analytics on-premises	Cognos Analytics trial	Cognos Analytics on Demand	Cognos Analytics on Cloud Hosted	Cognos Analytics for Cloud Pak for Data
Assistant	Yes	Yes	Yes	Yes	Yes
IBM Cognos Analytics Reports mobile app (14)	Yes	No	No	Yes	No
IBM Cognos Analytics Mobile mobile app (15)	Yes	Yes	Yes	Yes	No
Jupyter Notebooks	Yes	No	No	Yes (13)	No
Watson Knowledge Catalog integration	Yes	Yes	Yes	Yes	N/A
Slack integration	Yes	Yes	Yes	Yes	N/A
IBM Cognos for Microsoft Office	Yes	No	No	Yes	Yes
Dynamic cubes	Yes	No	No	No	No
Cognos SDK	Yes	No	No	Yes	No
Cognos Workspace	Yes	No	No	Yes	No
Access to client tools - license dependent (9)	Yes	No	No (9)	Yes	Yes (9)
Event Studio (1)	Yes	No	No	Yes	Yes
Analysis Studio (1)	Yes	No	No	No	No
Query Studio (1)	Yes	No	No	No	No
PowerPlay Studio - with existing licence (1)	Yes	No	No	No	No
Administration	Yes	Yes (Limited)	Yes (Limited)	Yes	Yes
IBM Support	Yes	No	Yes	Yes	Yes
Uploading fonts and images	Yes	No	No	Yes	No
Customization (themes, extensions, palettes, views, parameters, custom visualizations)	Yes	Yes	Yes (7)	Yes	Yes
Customization (user profiles)	Yes	No	No	Yes	Yes
Uploading files (11)	Yes	Yes	Yes	Yes	Yes
Access to on-premises data sources	Yes	Yes (5)	Yes (6)	Yes	Yes (Limited)

Functionality	Cognos Analytics on-premises	Cognos Analytics trial	Cognos Analytics on Demand	Cognos Analytics on Cloud Hosted	Cognos Analytics for Cloud Pak for Data
Table 2. Supported functionality between Cognos Analytics offerings (continued)					
Access to cloud data sources	Yes	Yes	Yes	Yes	Yes (Limited)
Access to PowerCubes	Yes	No	No	Yes	No
Access to Planning Analytics as a data source	Yes	Yes	Yes	Yes	No
Access to other data sources	See	See	See	See	See
Compatible query mode (CQM) data sources	Yes	No	No	No	No
Dynamic query mode (DQM) data sources	Yes	Yes	Yes	Yes	Yes
Execution of triggers	Yes	No	No	Yes	No
IBM ID authentication	Yes	Yes	Yes	Yes	No
On-premises or cloud-based authentication providers	Yes	No	No	Yes	No
Single signon (2)	Yes	No	No	Yes	Yes
Report output to file system	Yes	No	No	Yes (12)	No
Report bursting	Yes	No	No	Yes	Yes
Access to the underlying file system	Yes	No	No	No	No
GO Sales database samples	Yes	No	No	Yes	No
Samples based on uploaded files	Yes	Yes	Yes	Yes	Yes
Multiple users per license	Yes	Yes (4)	Yes	Yes	Yes
Per user pricing	Yes	N/A	Yes	Yes	No
PVU/capacity pricing	Yes	N/A	No	Yes	No
Multiple environments (development, production)	Yes	No	No	Yes	Yes
Long Term Support (LTS) release - 11.1.7	Yes	Yes	Yes	Yes	Yes

Table 2. Supported functionality between Cognos Analytics offerings (continued)

Functionality	Cognos Analytics on-premises	Cognos Analytics trial	Cognos Analytics on Demand	Cognos Analytics on Cloud Hosted	Cognos Analytics for Cloud Pak for Data
Multi-dispatcher environments	Yes	Yes	Yes	Yes (3)	Yes
Minimum number of users	N/A	1	1	100	No
Maximum number of users	N/A	5	N/A	N/A	No
Digital purchase	No	Yes	Yes	No	No
Access on-premises printer	Yes	No	No	No	No
Works with MotioCI	Yes	No	No	No (8)	No
Import and export of deployments	Yes	No	No	Yes	Yes
Audit extensions	Yes	No	No	No	No
Save to cloud	Yes	No	No	Yes (12)	Yes
Kerberos Client for SSO	Yes	No	No	No	No
Creating jobs	Yes	No	No	Yes	Yes

The following list contains additional information related to table 2:

1. Legacy studios include Event Studio, Query Studio, Analysis Studio, and PowerPlay Studio. The studios can be explicitly enabled only in Cognos Analytics on-premises.
2. Single signon is available with OIDC authentication providers, which support this feature.
3. In Cognos Analytics on Cloud Hosted, support for multi-dispatcher environments is limited to production environments.
4. Cognos Analytics trial supports up to 5 users.
5. Cognos Analytics trial can access 1 on-premises data source.
6. Cognos Analytics on Demand is limited to 2 secure gateway connections that can access 5 on-premises data sources per data source.
7. Standard tier users can use custom visualizations published by other users. Plus tier users have the same privileges as Standard users, and can also develop custom visualizations. Premium tier users have the same privileges as Plus users, and can also upload visualizations that were developed by other users.
8. Cognos Analytics on Cloud Hosted might work with MotioCI. However, IBM doesn't claim support for this configuration, and it doesn't support the plug-in that enables "Active Versioning" and "Authoring Integration."
9. Client tools that are currently available for download include Framework Manager and Transformer. Framework Manager can be used with Cognos Analytics on Demand only if the customer has an existing support and subscription (S&S) for the on-premises offering, and only as a means to move the on-premises metadata models to the on Demand offering. The expectation is that new metadata models will be created in Data Modules. Otherwise, Framework Manager is not provided with the on Demand offering. Cognos Analytics for Cloud Pak for Data supports only Framework Manager.
10. The Explore component is available in Cognos Analytics versions 11.1.x and later.

11. The limit per one upload of data is 100 MB. The limit of stored data per user is 500 MB.

12. Save to cloud is available to Cognos Analytics on Cloud Hosted customers starting with Cognos Analytics version 11.1.5.

13. Available with the subscription to Watson Studio. For more information, see this article (https://medium.com/ibm-watson/ibm-cognos-analytics-watson-studio-cloud-better-together-ac011059878f).

14. Compatible with iOS 13.x and 14.x, iPad OS 13.x and 14.x, and Android 10.x and 11.x.

15. Compatible with iOS 13.x and 14.x.

Cognos Analytics on Cloud server locations

Cognos Analytics on Cloud is hosted in the following locations:

- Washington, DC
- Amsterdam, Netherlands
- Sao Paulo, Brazil
- Tokyo, Japan
- Sydney, Australia

Cognos Analytics on Cloud Hosted can be deployed on any IBM Cloud data center, but currently has a footprint in the following locations:

- Montreal, Canada
- Washington, DC
- San Jose, CA
- London, England
- Frankfurt, Germany

Chapter 2. Getting started with Cognos Analytics

IBM Cognos Analytics integrates reporting, modeling, analysis, dashboards, stories, and event management so that you can understand your organization's data, and make effective business decisions.

After Cognos Analytics is installed and configured, administrators set up security and connect data sources. You can get started yourself by uploading local files and creating visualizations in dashboards or stories. For enterprise-level data, modelers are next in the workflow. After data modules and packages are available, report authors can then create reports for business users and analysts. Administrators maintain the system on an ongoing basis.

Whether you're an analyst, report author, data modeler, or an administrator, you start by signing in to the Cognos Analytics portal from your desktop or mobile device. There are coach marks in the user interface to help you discover what's where.

For links to videos, getting started resources, expert blogs, events, and more, you can visit the IBM Cognos Analytics community (https://community.ibm.com/community/user/businessanalytics/communities/community-home?CommunityKey=6b10df83-0b3c-4f92-8b1f-1fd80d0e7e58).

If you want to start with video tutorials and sample data, see "Get started video tutorials and samples" on page 11.

Depending on the work you do, you use different areas of the user interface. Cognos Analytics capabilities control access to the different areas of the interface, and you see only those interfaces that you work with.

Welcome portal
> Search for content in **Team content**, **My content**, or **Recent** lists; open reports, dashboards, stories and other items; upload files, check your notifications, set your preferences and home page, and review your schedules and subscriptions.
>
> Delete, copy, move, edit or run entries such as reports.
>
> Create report views for reports without opening the Reporting component.
>
> Create shortcuts to reports, dashboards, stories, or data modules.
>
> Set access permissions.
>
> Start creating new content such as reports, dashboards, or stories by clicking **New** ＋ .

Reporting
> Create and edit a wide range of professional reports. Use templates or customize your reports with prompts, bursting, advanced charts and visualizations.
>
> You enter the IBM Cognos Analytics - Reporting user interface from the Cognos Analytics portal by opening an existing report from **Team content** or **My content**, or by clicking **New** ＋ , and then **Report**.
>
> For more information, see the *Cognos Analytics Reporting Guide*.

Dashboards and stories
> View, monitor, and communicate data insights and analysis with dashboards or stories. You can assemble a view that contains visualizations such as graphs, charts, plots, tables, maps, or any other visual representation of data. Enrich dashboards and stories with web pages and other content.
>
> You enter the IBM Cognos Analytics dashboards or stories user interface from the Cognos Analytics portal by opening an existing dashboard from **Team content** or **My content**, or by clicking **New** ＋ , and then **Dashboard** or **Story**.
>
> For more information, see the *Cognos Analytics Dashboards and Stories User Guide*.

Explorations

Explore is a flexible workspace where you can discover and analyze data. You can also explore an existing visualization from a dashboard or story. Uncover hidden relationships and identify patterns that turn your data into insights.

You enter the IBM Cognos Analytics Exploration user interface from the Cognos Analytics portal by opening an existing Exploration from **Team content** or **My content**, or by clicking **New** ┿, and then **Exploration**.

For more information, see the *Cognos Analytics Explorations User Guide*.

Notebooks

If IBM Cognos Analytics Jupyter Notebook is enabled in Cognos Analytics, you can work with notebook documents, also referred to as notebooks, much like with other content in Cognos Analytics.

You enter the notebook user interface from the Cognos Analytics portal by opening an existing notebook from **Team content** or **My content**, or by clicking **New** ┿, and then **Notebook**.

For more information, see "Getting started with Notebook" in the *IBM Cognos Analytics Notebook User Guide*.

Data modules

Modelers and administrators create data modules and make them available to users for use with reports, dashboards, or stories. You can use the IBM Cognos Analytics web modeling interface to quickly create data modules from various sources, such as data servers, uploaded files, packages, and previously saved data modules. The tool is intent-driven and AI-infused and generates a data module by using keywords that you define.

You enter the IBM Cognos Analytics web modeling user interface from the Cognos Analytics portal by opening an existing data module from **Team content** or **My content**, or by clicking **New** ┿, and then **Data module**.

For more information, see the *IBM Cognos Analytics Data Modeling Guide*.

Manage and administer

Create and manage accounts (users, groups, and roles), schedules, or data server connections. Perform configuration tasks, and customize the product experience and user interface.

You enter the IBM Cognos Analytics administration user interface from the Cognos Analytics portal by clicking **Manage**, and then selecting the tabs that represent the different administration areas, such as **Data server connections** or **Configuration**. To access the legacy administration tool for more options, tap **Administration console**.

Changes that you make in either the **Manage** interface or the **Administration console** affect both interfaces.

For more information, see *IBM Cognos Analytics Managing Guide* and the *IBM Cognos Analytics Administration and Security Guide*.

Signing in

IBM Cognos Analytics supports authenticated and anonymous user access. To use the application as an authenticated user, you must successfully sign in.

To sign in, you must provide your credentials, such as user ID and password, as required by your organization. Anonymous users do not sign in.

If multiple namespaces are configured for your Cognos Analytics environment, you can sign in to the different namespaces in the same session. Each namespace requires its own credentials.

Procedure

1. In the login page, select the namespace that you want to sign in to.

2. Type your user ID and password, and click **Sign in**.

   Your session starts.

3. To sign in to a different namespace in the same session, from the personal menu (⚇) in the application toolbar, click **Sign in** again.

What to do next

You sign out to end your session. Even if you used multiple namespaces in the session, you sign out only once. To sign out, from the personal menu (⚇) in the application toolbar, click **Sign out**. If you close your web browser without signing out, your session ends.

Search and find content

You can find IBM Cognos Analytics reports, dashboards, stories, files, folders, packages, and other items by opening your **My content** or **Team content** folders or by checking your **Recent** folder. But **Search** is a quick, easy way to find your items.
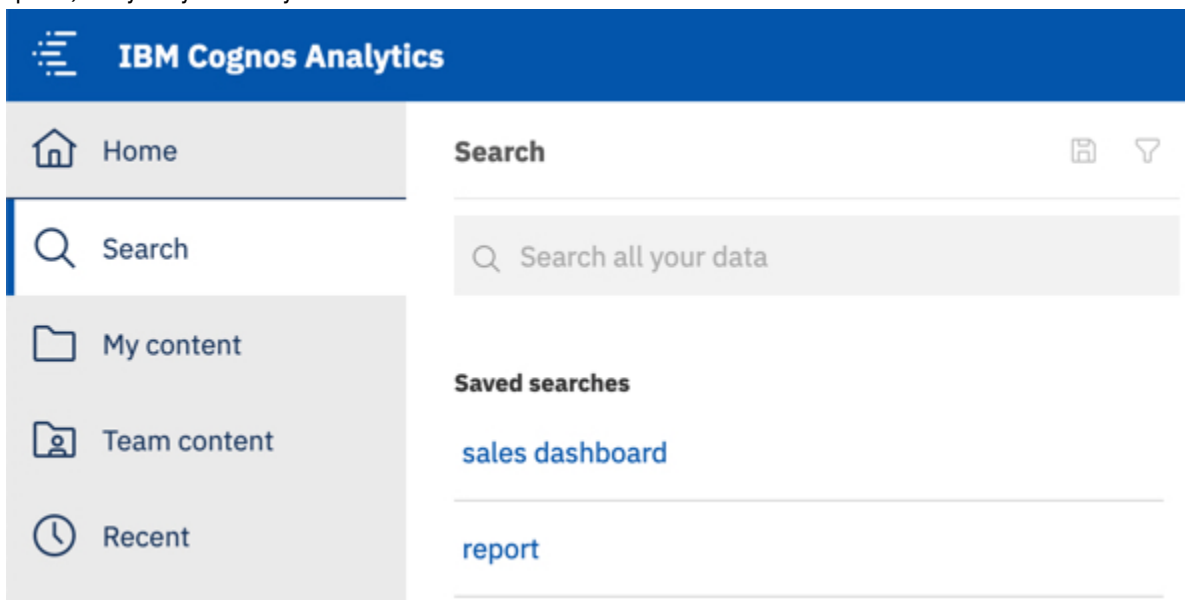
To find items, type keywords and click the Enter key. You can also search for text including table or column labels, XML report specifications, URL items, shortcuts, templates, and more. Search doesn't return results for content that's archived, but you can access archived content from a report that's listed in one of your folders.

Narrow your search with filters

If your search returns too many results, you can click the filter ▽ icon and select the options you want. The filter option is only available after you do an initial search.

Save searches

After you search and the results are listed, you can save your search. The save option is only available after you search.

Team content

Your organization content is in the **Team content** ▣ folder. This is where you find reports, packages, dashboards, stories, data modules, and more. Items in **Team content** are organized in folders so searching with keywords is an easy way to find what you're looking for.

Tip: Items listed in **Team content** may have different menu options when compared to the same items found during a search. For example, right-clicking a report in **Team content** displays a **Copy or move** option, which is not available for the same report when found during a search.

My content

This folder ⬜ is your private area, and only you can see the content that's stored there.

Recent

This folder contains items that you viewed recently. Use the **List View** ▤ and the **Tile View** ⊞ icons to switch between the views.

View report output versions and archived versions

For a report in a list, click ⋮ and then click the **View versions** ▥ icon.

Navigation tips

Navigate around the IBM Cognos Analytics user interface to discover how things work.

Here are a few tips to speed your discovery.

Run a report from the My content or Team content list

Click the name of a report or tap the context menu ⋮ icon for the **Run as** option.

Select entries in lists
Tap the entry icon or click the space beside the entry name.

Add a folder to My content or Team content

Open **My content** or **Team content**, and click the new folder ✚ icon in the toolbar.

Navigate between different views
You can have multiple entries, such as folders, reports, dashboards, that are opened. The welcome menu in the application bar provides a convenient way to navigate between the different, open views.
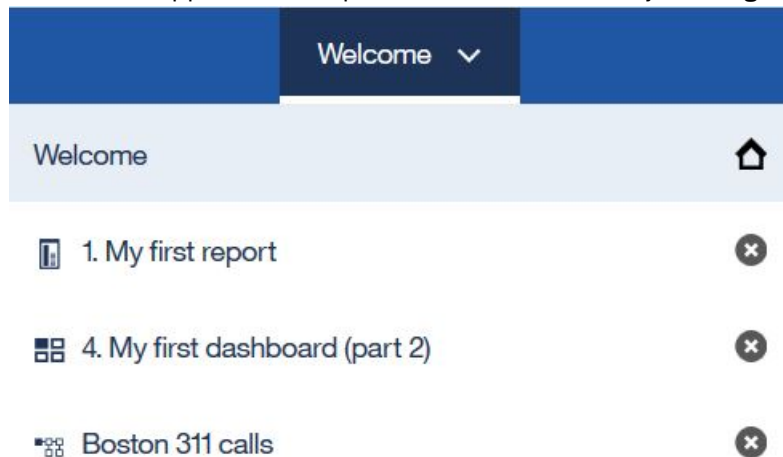
Upload files and launch components at the same time

Use **Quick launch** to upload files to IBM Cognos Analytics 11.1.0 and simultaneously start a data module, exploration, dashboard, or notebook.

Drag files onto the welcome page to activate the **Quick launch** functionality. When **Quick launch** appears, drop the files into the appropriate box to immediately start building a data module, exploration, dashboard, or notebook. The uploaded files are stored in your **My content**.
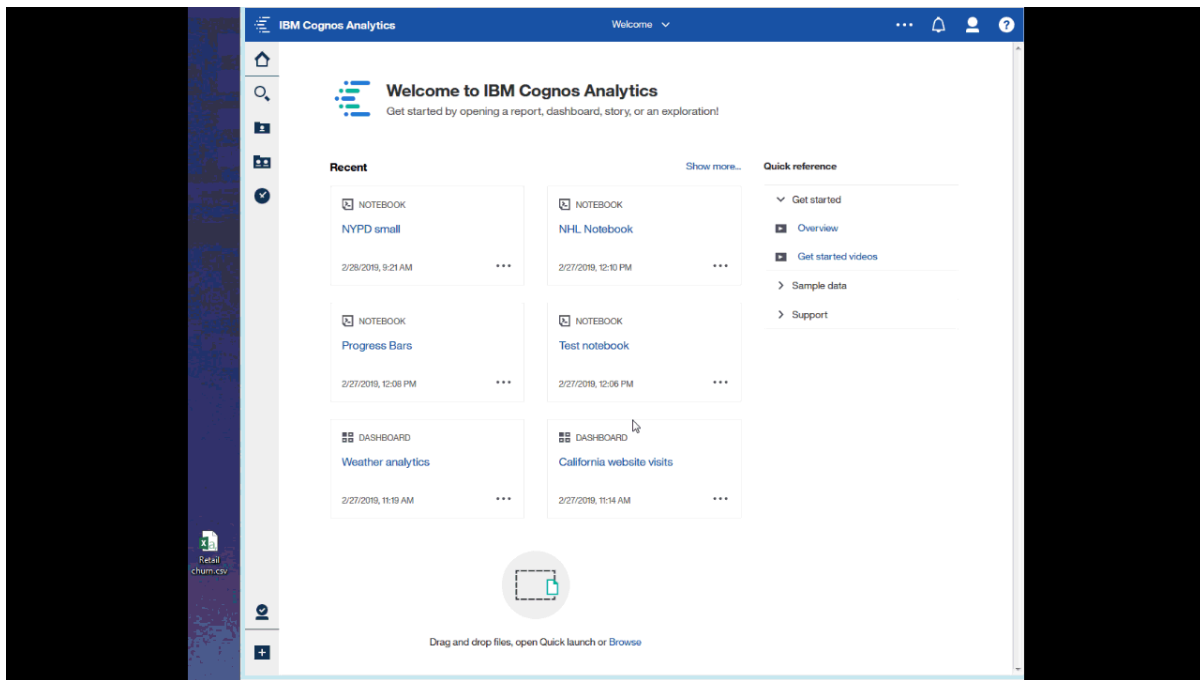
For more information about uploaded files, see "Uploaded files" on page 23.

Get started video tutorials and samples

If your administrator installs and configures the samples that are available with IBM Cognos Analytics, you can experiment with sample data, metrics, and report templates.

If you're a beginning user, as part of the base samples, there are Get started tutorials with samples (including data), videos, and written procedures to guide you through creating your first reports, active reports, dashboards and stories.

These samples and the sample data are in **Team content**, in the **Get started** folder. The **Data** folder includes Microsoft Excel files that were uploaded and saved for you to use with the **Get started** tutorials. The **Version 11.x base samples** report is added only to inform you about the version of IBM Cognos Analytics that these samples are included with. To complete the tutorials, open the samples to see the finished product, then click the **Play** button ▷ to watch the tutorial video. For the dashboard samples, the **Play** button is embedded.

For more information, see the For more information, see the *IBM Cognos Analytics Samples Guide.*

Chapter 3. Access permissions

Access permissions are used to secure the organization's data.

Your administrator adds you to the groups and roles that have the capabilities and permissions you need to work with secured functions, features, and your organization's content. For example, report authors typically have access to the reporting, but not the managing part of the user interface. Members of the report author role have **Write** permission on a report, but members of a sales group might have only **Run** permission for the same report.

If you want to see what you are permitted to do with a specific report or other entry, see "Viewing your permissions for content" on page 15.

If you lack sufficient access permissions for an item, item owners or users with more extensive access permissions can authorize you to use their credentials. For more information, see "Managing your credentials" on page 84.

For information on administering user access to groups, roles, and capabilities, see the *IBM Cognos Analytics Managing Guide*.

Simple and granular access permissions

Access permissions determine a user's ability to perform a specific action, or access a feature or object.

Permissions for a specific user are a combination of permissions for that user and permissions for the groups and roles where the user is a member. When a user is a member of more than one group or role, deny permissions for one group or role take precedence over granular permissions for a different group or role.

Users have **Read**, **Run**, **Write**, and **Full** permissions for items. These simple permissions represent combinations of more granular permissions that administrators use to control access.

Simple permissions mapped to granular permissions

The following simple permissions include combinations of granular permissions:

Read

Includes the read and traverse granular permissions.

Run

Includes the read, execute, and traverse granular permissions.

Write

Includes the read, write, execute, and traverse granular permissions.

Full

Includes the read, write, execute, traverse, and set policy granular permissions.

Granular permissions and permitted actions

The underlying, granular permissions are described in the following list:

Read

View all the properties of an entry, including the report specification and report output.

Note: To run a report with full interactivity, a user must have read permissions on the package or data model that is referenced in the report. For more information about the actions you can do in a report that runs with full interactivity, see "Limited and fully interactive reports" in the *IBM Cognos Analytics Reporting User Guide*.

Create a shortcut to an entry.

Write

Modify properties of an entry.

Delete an entry.

Create entries in a container, such as a package or a folder.

Modify the report specification for reports created in Reporting and Query Studio.

Create new outputs for a report.

Execute

Process an entry.

For entries such as reports, agents, and metrics, the user can run the entry.

For data sources, connections, and signons, the entries can be used to retrieve data from a data provider. The user cannot read the database information directly. The report server can access the database information on behalf of the user to process a request. IBM Cognos software verifies whether users have execute permissions for an entry before they can use the entry.

For credentials, users can permit someone else to use their credentials. To use the run as the owner report option, a user must have execute permissions for the account.

Set policy

Read and modify the security settings for an entry.

Traverse
View the contents of a container entry, such as a package or a folder, and view general properties of the container itself without full access to the content.

Setting permissions for content

Set access permissions to specify which users, groups, or roles can access your content.

About this task

You can set permissions for content that you own, such as reports, dashboards, stories, packages, and so on. Permissions can be granted, denied, or set as default.

Note: A value of **Default** means that permission is neither granted nor denied.

For information about the types of permissions that you can specify for entries, see "Simple and granular access permissions" on page 13.

When you set access permissions, you can reference both authentication provider users, groups, and roles, and Cognos groups and roles. However, if you plan to deploy your application in the future, we recommend that you use only the Cognos groups and roles to simplify the process.

Procedure

1. In **Team content** or **My content**, find your entry, and from its context menu ••• , click **Properties**.

2. On the **Permissions** tab, select the check box **Override parent permissions**, and click the add ✛ icon.

3. Open the namespace that contains the users, groups, or roles for which you want to specify permissions for the entry. To quickly find the entries, click the search 🔍 icon, or click the filter ▽ icon to narrow the view of entries within the namespace.

4. Select the users, groups, or roles that you need. You can control-select multiple entries. Click **Add**. The selected users, groups, or roles are added to the security policy of your entry with the basic permission **Read**.

5. To change the permission to **Run**, **Write**, or **Full**, click the set access ⌄ icon, and change the permission.

6. Click on the permission name to view the granular permissions that this permission is comprised of. To change the granular permissions, click the set access ⌄ icon for a permission, and change the access type to **Grant**, **Deny**, or **Default**.

7. If you want the children entries inherit the same permissions, select the **Apply to all children** check box.

8. Click **Apply**.

Viewing your permissions for content

To secure IBM Cognos Analytics content, administrators assign permissions. You can check your permissions for a report or another entry in the properties for the entry.

About this task

The Read, Run, Write, and Full permissions represent groupings of more granular permissions that administrators assign. For more information, see "Simple and granular access permissions" on page 13.

Procedure

1. For an entry in a list, tap the context menu ⋯, and then tap **Properties**.
2. On the **General** tab, tap **Advanced**.

   You see the **Permission** property and your permission value for the entry.

Viewing your permissions for functions and features

As a user or member of a group or role, you are assigned the capabilities that you need to work with different IBM Cognos Analytics functions and features.

About this task

If you are missing a capability that you require, contact your administrator. To see what groups and roles and what capabilities are available with your sign-in credentials, follow these steps:

Procedure

1. Tap your personal menu, then tap **My preferences** > **Personal** > **Advanced**.
2. Tap **View details** for either **Groups and roles** or **My capabilities**.

Chapter 4. Sources of data

To create and run reports, dashboards, stories, or explorations you need data. This data might be made available to you by an administrator who creates packages or data modules, or you could upload your own data files.

You can use data modules, packages, data sets, and uploaded files as sources of data for your IBM Cognos applications.

When data modules and models are built, and queries are planned and executed, the data source is required to describe the column data type to the query service. The query service maps the source column data types to the types it supports. If the source data type is not supported by the query service, the query service treats it as an unknown type. For more information, see "Supported SQL data types" in *IBM Cognos Analytics Data Modeling Guide*.

Data modules

Data modules contain data from data servers, uploaded files, data sets, other data modules, and from relational, dynamic query mode packages.

Data modules are created in the web modeling component in IBM Cognos Analytics, and saved in **Team content** or **My content**. You can use multiple input sources for a single data module.

Tip: If you create a data module using data from an uploaded file and you want the data to be available to other users, then store both the data module and the file in **Team content**. This ensures that another user can run a report that references the data. This restriction applies to report authors and consumers. Administrators can run reports that use data from any user's **My content** folder.

Data modules can be used as sources for reports, dashboards, stories, explorations, notebooks, data sets, and other data modules.

For more information, see the *IBM Cognos Analytics Data Modeling Guide*.

Data modules that are sourced from IBM Planning Analytics cubes are created in the administration component.

Packages

A package is a subset of a model, which can be the whole model, that is made available to the IBM Cognos Analytics application.

Relational packages are created in IBM Cognos Framework Manager, and OLAP packages in IBM Cognos Cube Designer and in IBM Cognos Administration. For more information, see the chapter on publishing packages in the *IBM Cognos Framework Manager User Guide*.

Not all types of packages can be used in all Cognos Analytics components. Only Reporting can use all types of packages traditionally supported in earlier versions of Cognos Analytics.

For dashboards and stories, the following packages are supported:

- Relational, dynamic query mode packages.
- Relational, compatible query mode packages if there is a JDBC connection defined for each data source in the package.
- Dimensional OLAP packages that are based on PowerCubes, dynamic cubes, TM1 data sources, dimensionally modeled relational (DMR) data sources, and other data sources.

The modeling component supports only relational, dynamic query mode packages as sources for data modules.

For more information, see the *IBM Cognos Analytics Data Modeling* Guide.

Note: Cognos Analytics doesn't support Framework Manager namespaces, which are containers that organize and uniquely qualify content in a model. The namespaces are shown as folders when Framework Manager packages are viewed in data modules, dashboards, and other content.

Data sets

Data sets are customized collections of data items that you use frequently. As you make updates to the data set, the dashboards, stories, or explorations that use that data set are also updated the next time you run them.

You can create data sets from packages or data modules, and use as sources to create dashboards, stories, explorations, and data modules.

You can't create a report directly from a data set. However, to use the data from the data set in a report, create a data module from the data set, and then use the data module as a source for your report.

The data set mechanism is based on the Cognos Analytics report foundation. You add data to a data set in a similar manner as you add data to a list report. You can switch between **Page design** and **Page preview** modes. The **Query** view provides an alternative way to modify the data sets. In this view, you can copy and paste queries from existing reports, manage advanced filters and prompts, and rename queries.

Here is an example of a data set in the **Page preview** mode.

Dealer Name	City	Address	Current Quarter [Quantity Sold]
Weston Auto	Arvada	9825 W 58th Ave	307
Colfax Auto	Denver	1350 W Colfax Ave	267
Northern Auto Sales	Denver	3320 W 38th Ave	338
Suwanda's Auto	Westminster	200 W 136th Ave	213
Great Outdoors Auto	Denver	9190 E 33rd Ave	324
South Parker Auto	Aurora	6462 S Parker Rd	271
Narezney's Auto	Colorado Springs	1905 S Federal Blvd	257
North Parker Auto	Aurora	2651 Parker Rd	277
Club Auto Sales	Federal Heights	9190 N Federal Blvd	291
Broadway Auto	Littleton	6300 S Broadway	219

Creating data sets

Create data sets to group customized collections of data items that you use frequently.

If a data set is based on a package with multiple data server connections or signons, the connection or signon that you choose is saved with the data set. If the package connection information changes later, users might see the ambiguous connection message. To avoid this message, edit the data set choosing the new connection or signon, and save the data set using the **Save as** option. Select yes when asked whether you want to overwrite the data set. The data set is saved with the new connection or signon and its subsequent refreshes use the new information.

Before you begin

The package or data module that you plan to use as a source for your data set must already be saved in **Team content** or **My content**.

About this task

The list in the data set can be associated with only one query. If you want to add data items from different queries to your data set, you can create a custom query in the **Queries** view that contains data items from different queries.

When creating or editing data sets, you can reuse queries from Cognos Analytics reports. For more information, see "Reusing report queries in data sets" on page 21.

Procedure

1. Locate the package or data module in **Team content** or **My content**.

2. From the package or data module context menu $^{\cdots}$, click **Create data set**.

   The data set editor is opened in the **Page design** mode.

3. Drag the data items from the **Insertable objects** pane to the work area. The items appear as columnar data in a similar fashion to a list report.

   To preview data in the data set, switch from the **Page design** mode to the **Page preview** mode.

4. For relational data or for data modules, select the **Summarize detailed values, suppressing duplicates, for relational data sources** checkbox.

   If you aren't sure if this checkbox must be selected, clear it and then select it again to see how the data is aggregated. Condensed data with fewer rows usually leads to better performing reports and dashboards. A reason for not aggregating the data in your data set is that you lose some details in the process, and the data from one system might not match the data from another system. This is especially true for calculations, such as an average.

5. Select **Row suppression** if you want to hide rows with no data or zeros.

   Suppressing rows without data gives you a more concise view of your data set.

6. Refine the data in the data set by using the options in the on-demand toolbar

   .
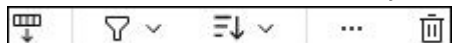
   To view the toolbar, click any column.

   To add filters to the columns or individual items of the data set, click the item, and then click the filter icon ▽ in the toolbar. You can add a customized filter or use one of the predefined filters.

   To sort the values, click the sort icon ⊒↓ ∨ , and select from the available sort options.

   To view the column expression, click the **More** icon $^{\cdots}$, and select **Edit Query Expression**.

7. Use the **Query** view to access more data set functionality.

   From the **Data set** menu, click **Queries** to open the Query Explorer.

   In this view, you can copy and paste queries from existing reports, manage advanced filters and prompts, or rename the queries.

   Here is an example of a data set in the **Queries** view:
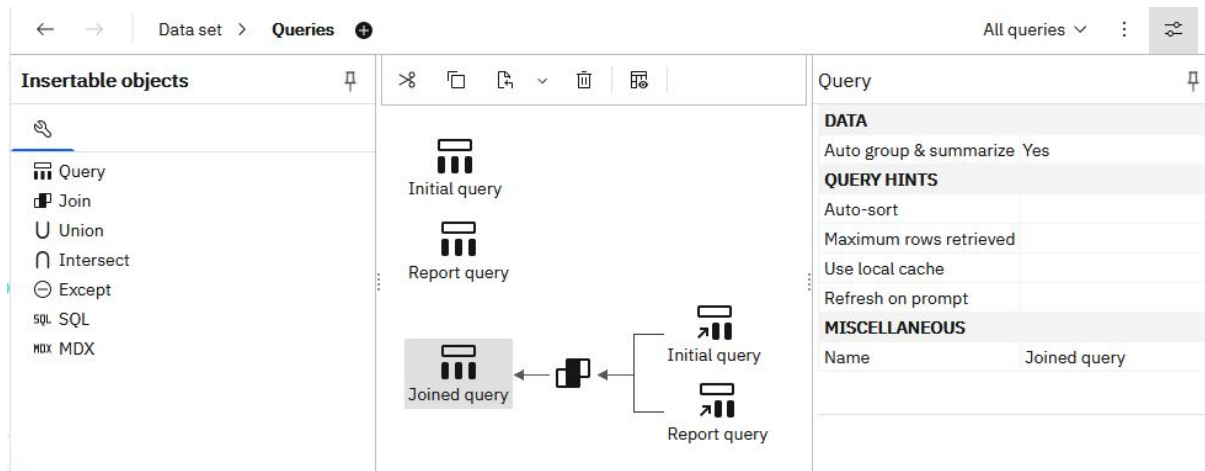
Note: The query names are used as table names when the data set is used to create data modules. Use logical names that clearly describe the data when renaming the queries.

8. Click the **More** icon ⋮ to access additional functionality:
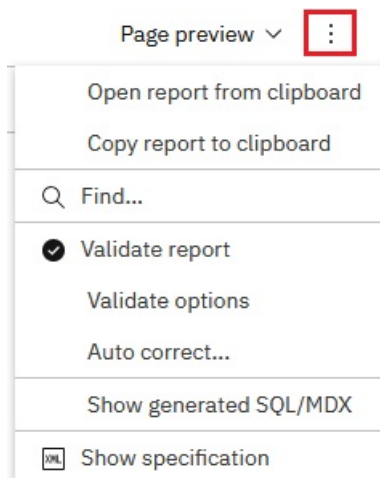
Click **Validate report** to validate the data set, or click **Show generated SQL/MDX** to view the data set SQL.

9. Click the save icon 💾, and choose one of the following options to save the data set:

  • To save the data set for the first time or to save changes to the data set, click **Save**. This option saves the metadata, but doesn't load the data. Depending on the data set, loading data might take some time.

  • To save an updated data set as a new data set, click **Save as**. This option saves the metadata, but doesn't load the data. Depending on the data set, loading data might take some time.

  • To save the data set and load the data, click **Save and load data**. In addition to saving the new or changed metadata, this option loads data. The data is immediately available when you create a dashboard or story.

Results

The data set object ⚬⚬ is created in a location that you saved it to.

What to do next

To edit the data set, open it from **Team content** or **My content**.

You can replace data items in the data set with data items from a different query. In the **Page design** or **Page preview** mode, click the **Reset** button. The previously selected data items are removed, and you can start adding new ones to the list.

You can also replace the data module or package that was used as a source for the data set. Right-click the source name in the **Insertable objects** pane, and select the **Replace data module** or **Replace package** option, as shown in the following screen capture:
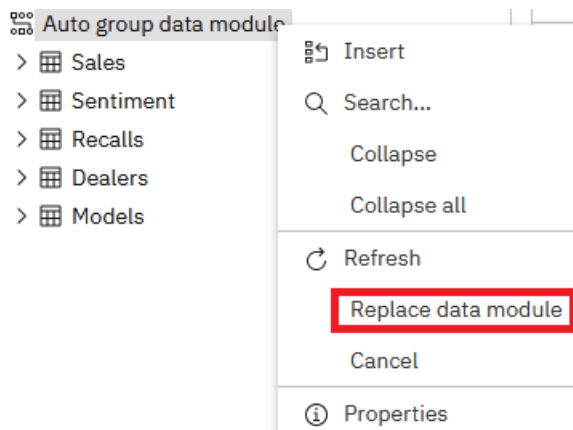
Reusing report queries in data sets

You can reuse existing queries from Cognos Analytics reports by copying either individual queries or entire report specifications into data sets.

The data set and the report from which you copy the queries must be based on the same type of data source, either a data module or a package.

When you copy an individual report query, you add the query to the data set, and can continue working with the data set.

When you copy the report specification, the data set is overwritten and you can use the query (or queries) from the report in the data set. The report layout is not copied. The data set is renamed to the default **New data set**. You can then save it as a new data set.

Procedure

1. Create or open an existing data set.
2. From **Team content** or **My content**, open the Cognos Analytics report in the edit mode.
3. Use the following steps to copy an individual query into your data set:
   a) In the report, from the **Report** menu, click **Queries** to open the report **Queries** view.
   b) Right-click the query that you want to copy, and click **Copy**.
   c) Go back to the data set, and from the **Data set** menu, click **Queries**.
   d) Right-click anywhere in the empty space in the **Queries** view, and click **Paste**. The new query is added to the view.
   e) Save the data set.
4. Use the following steps to copy the report specification:

   a) From any page in the report, click the **More** icon ⋮ , and select **Copy report to clipboard**.

   b) Go back to the data set, click the **More** icon ⋮ , and select **Open report from clipboard**.

   c) Paste the report specification into the empty box that is displayed, and click **OK**.

   You are back in the data set list view. The data source and the query in the data set were replaced. The data set name is shown as **New data set**, even if you started with a data set named differently.

d) Open the **Queries** view. All queries from the report are copied into the data set.

e) Save the data set using the **Save as** option.

5. From the **Data set** menu, click **Pages** > **Page1**. You are back in the data set list view.

6. Click the **Reset** button to break the list association with the previous query.

   The data items are removed from the list. You can now add data items from a different query, including the copied report queries, to the list.
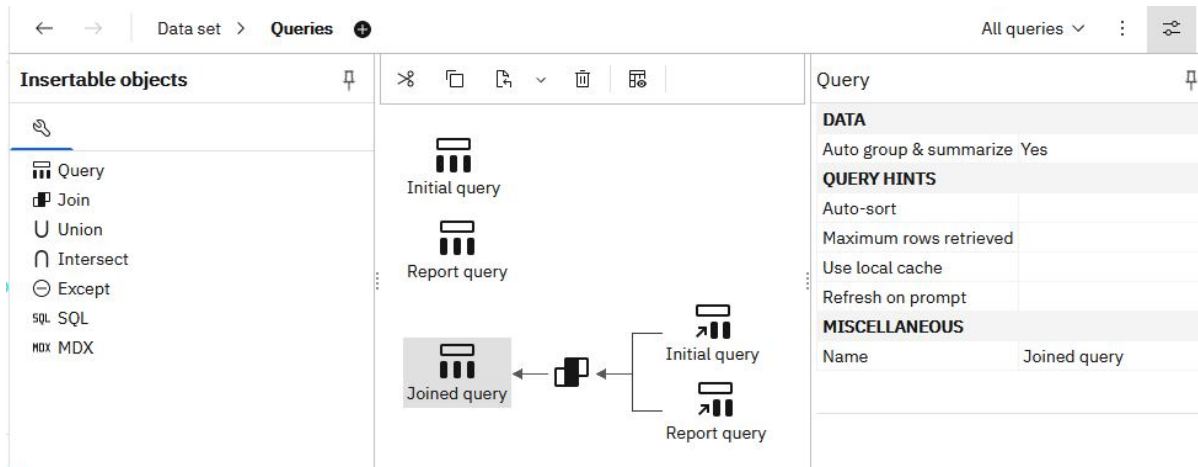
7. In the **Insertable objects** pane, click the **Data items** tab ⊞.

   The report queries and their data items are shown in the tab.

8. Drag items from one query to the data set list.

9. Save the data set.

Results

Here is an example of the **Queries** view after a query labeled `Report query` was copied into the data set. The report query was joined with a preexisting query labeled `Initial query`.

Later, the data items from the `Joined query` were used to populate the list in the data set.

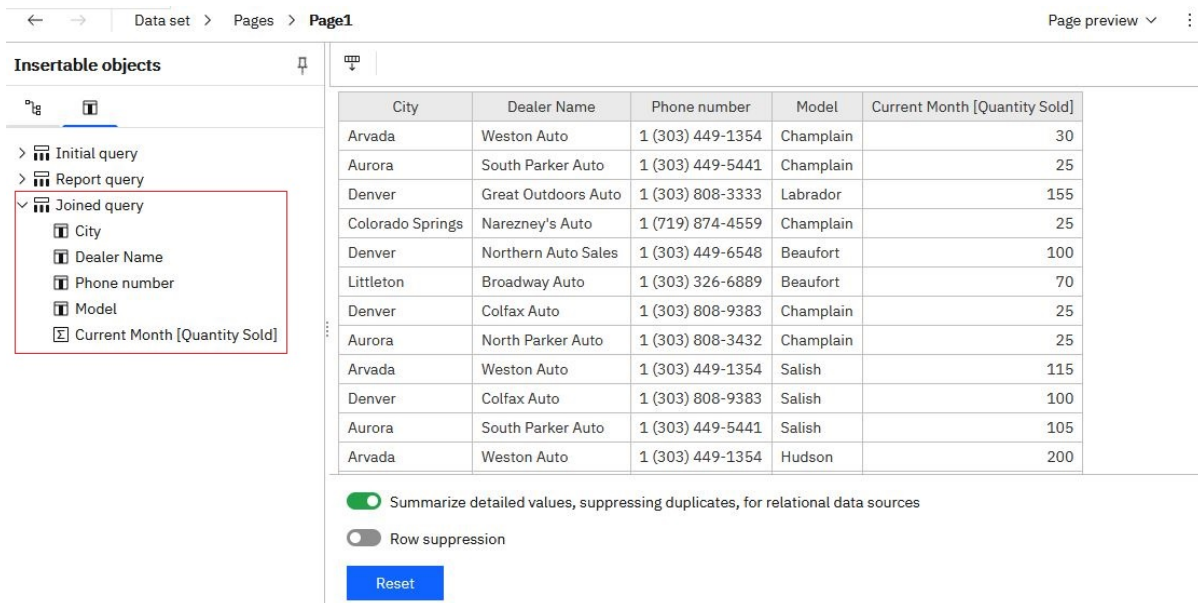# Uploaded files

If you want to do some quick analysis and visualizations with data files, you can upload the files to IBM Cognos Analytics by yourself. Your data files must meet size and structure requirements.

The data in the files must be in a simple columnar format. Pivot tables or crosstabs aren't supported.

The size limits for uploaded files are configured by administrators in **Manage** > **Configuration** > **System** > **Data**. The settings that need to be modified are **Size limit per upload of data (MB)** and **Size limit of stored data per user (MB)**.

The following file size limitations apply to individual users:

- Maximum size of each individual file. The default is 100 MB.
- Maximum size of all uploaded files. The default is 500 MB.

The file types that you can upload into Cognos Analytics are specified below.

Microsoft Excel workbook files

The supported Microsoft Excel file formats include `.xls` and `.xlsx` workbook files.

The file formats `.xlsb` and `.xlsm` aren't supported.

All worksheets in a multi-tab workbook are uploaded simultaneously. Each worksheet appears as a separate table in Cognos Analytics.

The following conditions apply to uploading Microsoft Excel files:

- `.xlsx` files that are saved in OpenOffice aren't supported.
- Password-protected Excel files aren't supported.
- Filters in Excel files are ignored. You can use the filtering options in data modules to reapply the filters.
- Comments before the first header row are interpreted as column headers.

  Text before the first row that describes the worksheet is incorrectly read as a column header. If you need a description of the worksheet, leave an empty row at the end of your data, and add the description under the empty row.
- Totals and subtotals are treated as part of the data.

  Totals can be mistaken as unsummarized data, and give misleading results. Consider removing totals and subtotals from your data before uploading the file.
- Each file can contain a maximum of 2000 columns.

  However, for better query performance, avoid uploading files with hundreds of columns. Try to remove redundant columns and rows from the files before uploading the files.

Delimiter-separated values files

The supported delimiter symbols include commas, tabs, semi-colons, and pipes (|). The file extension can be `.csv`, `.tsv`, `.tab`, or `.txt`.

The following conditions apply to uploading delimiter-separated values files:

- Quotation mark characters escape literal values. Single quotation marks (') and double quotation marks (") are supported.
- Record separators separate rows. Newline (\n), carriage return (\r), and carriage return followed by newline (\r\n) are supported.
- If your file is encoded as Unicode, it must contain a byte order mark (BOM) as the first character.
- Each string value in a file can contain a maximum of 5000 characters. Any extra characters are truncated.

- The date and time values in the files must be in a supported format. Otherwise, the data might not be rendered properly in visualizations. Cognos Analytics supports the ISO 8601 standard formats for times.

  The following date formats are supported:
  - M/d/yy
  - MMM d, y
  - MMMM d, y
  - dd-MM-yy
  - dd-MMM-yy
  - yyyy-MM-dd

  The following time formats are supported:
  - h:mm a
  - h:mm:ss a
  - h:mm:ss a z
  - HH:mm
  - HH:mm z
  - HH:mm:ss
  - HH:mm:ss.SS
  - HH:mm:ss z
  - HH:mm:ss.SS z

Jupyter Notebook (`.ipynb`) files

You can upload Jupyter Notebook (`.ipynb`) files that were created in a Jupyter environment outside of Cognos Analytics.

For more information, see .

Compressed files

The supported, compressed file types that you can upload are `.zip` and `.gz` files.

You can compress multiple files of supported types into a `.zip` or `.gz` file for a one-step upload. The files are saved together in **Public content** or **My content**, and you can quickly start creating dashboards, explorations, or data modules based on the `.zip` or `.gz` file. You can also reload all files in the archive at once.

When a compressed archive consists of two or more files, Cognos Analytics uploads them in the following way:
- Each file is processed sequentially.
- Relationships between the data in the files are detected.

If the data in the archive files is not related, consider uploading the files separately for the following reasons:
- Files are processed concurrently (which is faster) instead of sequentially.
- Individual files can be updated instead of reprocessing a set of files which might not be changed.

Uploading files

You can upload supported file types that are stored in any location to which your computer has local or LAN access.

You can upload each data file individually or upload multiple files concurrently. Multiple files can also be compressed for a one-step upload.

Procedure

1. Use the following methods to upload files:

   - In the vertical application toolbar, tap ✛ **New**, and then tap **Upload files**. Locate the files on your local drive or on the LAN, and select one or multiple files to upload them.

   - In the welcome page, drag one or multiple files from your local drive onto the welcome page to activate the **Quick launch** functionality. When **Quick launch** appears, drop the files into the appropriate box to immediately start building a data module, exploration, dashboard, or a notebook.

   - In the welcome page, tap the **Browse** link at the bottom of the page. Locate the files on your local drive, and select one or multiple files to upload them.

   - From a folder in **Team content** or **My content**, click the **New** ✛ icon, and select **Upload files**. Locate the files on your local drive or on the LAN, and select one or multiple files to upload them. The files are saved to the folder from which you initiated the upload.

   Tip: At different upload stages, progress and error messages are shown for single-file uploads and consolidated, progress messages for multi-file uploads.

2. Optional: If the **Replace data** message is displayed, it means that a file was uploaded before, and you can either replace or append data to the file. For more information, see "Updating data in uploaded files" on page 25.

Results

By default, the uploaded files are saved in **My content**. When the upload was initiated from a specific folder in **Team content** or **My content**, the files can be saved to that folder.

If an administrator specified a different default, shared location in **Team content** for uploaded files at the role, tenant, or global level, you can save the uploaded files to this location.

What to do next

Use uploaded files to create dashboards, stories, explorations, data modules, or data sets.

To join two uploaded files, create a data module using them as sources.

Reporting can't use uploaded files directly. However, they can be incorporated into a data module, which can then be used as a source in Reporting.

Updating data in uploaded files

You can replace or append data in an uploaded file with data from a different file.

The column names and data types, and the order of columns must be identical in both files. An empty file, which is a file that contains a header but no data, cannot be used for the update.

Procedure

1. In **Team content** or **My content**, locate the uploaded file that you want to update.

2. From the file context menu ⚏, choose one of the following options:

- **Replace file**

  This option replaces all rows of data in your uploaded file with rows of data from the file that you select.

- **Append file**

  This option appends new rows of data to your uploaded file from the file that you select.

Tip: While the file is being updated, progress and error messages are displayed.

Chapter 5. Explorations

Explore is a flexible workspace where you can discover and analyze data. You can also explore an existing visualization from a dashboard or story. Uncover hidden relationships and identify patterns that turn your data into insights. Correlated insights are represented by a green icon with a number on the x-axis, y-axis, or the title of a chart.

Starting explorations

Use one of several methods to start explorations.

Starting an exploration from an existing dashboard or story

When you are working on a dashboard or story, you can create or edit an exploration directly from a visualization.

About this task

Complete these steps to open a visualization in a new exploration or to add to an existing exploration:

Procedure

1. Open an existing dashboard or story.
2. Select a visualization.
3. Click the **Explorations** icon in the toolbar.
4. Select **New exploration** or **Add to existing**.

Starting a new exploration from the New menu

From the **welcome** page, you can start a new exploration from the **New** menu.

Procedure

1. Click **New** ＋ and then click **Exploration**.
2. Select a data source and click **Add**.
   A starting points page is generated from the data source you selected.

Starting a new exploration from a data asset on the welcome page

You can select the **Action menu** on a recently used data asset on the **welcome** page.

Procedure

1. On the **welcome** page, if the data asset you want to use is displayed as a tile in the **Recent** area, click the **Action menu** ⋯ icon.
2. Select **Create exploration**.

Adding a data source

Add a data source to your exploration to explore its data.

Procedure

1. In the **Selected sources** pane, click the **Add a source** ➕ icon.
2. Go to **My content** or the **Team content** folder and select the data source that you want to add. Click **Add**.
3. Expand the data source in the **Selected sources** pane to see what's available.
4. Use the starting points page to generate a relationship diagram from your data.

Chapter 6. Reports

IBM Cognos Analytics standard and active reports are created in the IBM Cognos Analytics - Reporting component.

After a report is saved in the portal, you can view, run, or edit it. You can view report outputs in various formats and languages. You can also distribute the report by email or by bursting, or send it to mobile devices. Reports can also be scheduled to run at regular time intervals.

For information about managing reports, see Chapter 9, "Managing content," on page 57.

Viewing and interacting with reports

You search and find an IBM Cognos Analytics report in the **Team content** or **My content** folder, and then you can open it or run it.

The report opens in a viewer. You now have different options, such as subscribe, save as a report view, edit in reporting, and more. The available options depend on the type of report that you view. When a report runs in the interactive viewer, you also have options to see different data in the report by filtering, drilling up and down, and more.

Choose the options that best suit your needs for viewing frequency and personalization. If you want to see a report on a regular basis, subscribe to it. If it's really important, you can set it as your home page. If you entered prompt and parameter values and you want to save those so you don't have to enter them every time, save the report as a report view. If you choose to edit, the report opens in Reporting with all the tools you need. For more information, see *The user interface* in *IBM Cognos Analytics Reporting User Guide*.

Depending on the report type, the appropriate actions are available in the viewer:

- **Subscribe**. Delivers reports with your prompt values and options.
- **Save as report view**. Saves your prompt values and options in a view.
- **Set as home**.
- **Edit**. Opens Reporting.
- **Run as**. Choose the output format.
- **Save** and **Save as**.

If you view saved report output, and you want to be alerted when there's a new version of the report, tap **Notify me**.

You can find entries in **Team content** by searching, and by viewing the **Recent** items list. But you can also save and organize your items in **My content**, which is useful for saving report views with your custom prompts or for saving report output versions.

When a report runs in the interactive viewer, the following options are available in the toolbar that appears when you select a report object:

- Sort data .
- In lists, group data .
- Summarize data Σ .
- Convert a list or crosstab to a chart, or change a chart to a different chart type .
- In crosstabs and charts, suppress columns or rows or swap columns and rows $\rightleftarrows$.
- Drill through to another report.

- Add calculated members ⊞.

- Drill up, drill down, and perform dimensional operations, such as top/bottom filtering ⌀.
- Run the report as Excel or CSV output.
- Select and interact with the elements of a chart, such as the bars in a bar chart.

- View lineage information for a data item ⌀.
- Access a business glossary, such as the IBM InfoSphere® Information Governance Catalog, for a data item ⌀.

- Create, edit or remove filters ▽.
- Share or embed report output, preserving the context of the current view of the report, such as prompt values.

  To share or embed report output, click the **Share** icon ⤴.

- Run a report as the report owner or with the capabilities granted to the owner.

  In the Cognos Analytics portal, access the **Properties** slideout of the report, click the **Report** tab, and then open the **Advanced** section.

Run variations of reports with report views

If you want to run an existing IBM Cognos Analytics report with different prompt values, schedules, delivery methods, run options, languages, or output formats, you can create a report view. Creating a report view does not change the original report.

To create a report view ⧉, run a report using the prompt values or other run options that you want and in the save options, select **Save as report view**. Your prompt values and run options are saved in the view. If you want to edit the prompt values for the report view, open the report view properties panel.

You can also create a report view in My content or Team content. Tap the context menu ⋯ next to a report, and then tap **Create report view**.

In the properties panel for the report view, you can see a link to the source report. If the source report is moved to another location, the report view link is maintained. If the source report is deleted, the report view link breaks.

Report versions

If you run IBM Cognos Analytics reports, you see the latest data from the source. But often you view report versions and outputs, such as when a report you subscribe to is delivered. Report outputs are generated by subscriptions, schedules, multiple formats or languages, bursting, and delivery methods that include save, print, and email.

In many instances, you are notified and receive a link to view report output, but you can also view saved and archived versions for reports in your content lists.

Save a report version

In the application bar, when you view a report, tap either 💾▾, or ⋯. The location of the save option depends on the type of report you view.

You also have the **Save as** option of saving the report version under a different name or in a different location.

View report versions and archived versions

For a report in a content list, tap ⋯ and then tap ⧉ **View versions**.

Set the maximum number of report versions that you can save

For a report in a content list, tap ⌗ > ⇄ **Properties** > **Report** > **Advanced**, and in the **Report output versions** field, enter a number to represent the maximum number of report versions that you can save.

Delete saved outputs for report versions

For a report in a content list, tap ⌗. Tap ▤ **View versions**, tap an entry in the list, and then tap the delete icon. Deleting removes all saved output formats for the version.
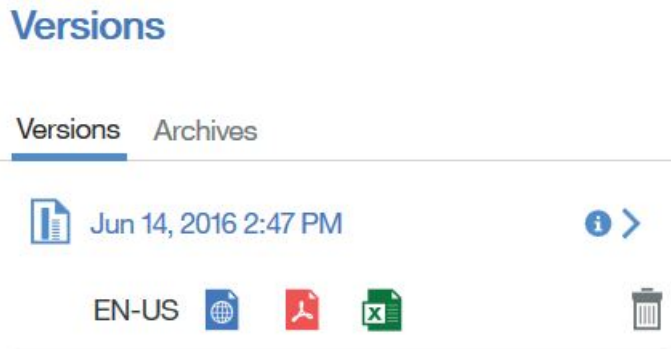
Subscribing to reports

If you use an IBM Cognos Analytics report regularly, you can subscribe to it. When you subscribe, you pick the time, date, format, and where you want it delivered. When you subscribe to a report, the subscription includes all your prompt and parameter values.

About this task

The subscription option is available when you run and view a report, but not when you are in editing mode or when you view saved output.

Tip: To ensure that you are in view mode, and not in edit mode, tap the Edit button ✎ until it is not selected.

If you edit a report, you must save it before you can subscribe.

After you subscribe, each time your report is delivered, you are notified by a red circle on the Notifications button 🔔 in the application bar. The number in the red circle indicates the number of notifications that you have not yet viewed. Tap the Notifications button 🔔 to find a message with a link to view the report output.

Procedure

1. Run a report.

2. In the application bar, tap ⋯ and then tap the **Subscribe** icon 🗓.

3. Select your subscription options, and then tap **Create**.

   Your subscription is created.

What to do next

After you create your subscriptions, you can view and manage them. For more information, see "My schedules and subscriptions" on page 81.

Chapter 7. Dashboards and stories

IBM Cognos Analytics provides dashboards and stories to communicate your insights and analysis. You can assemble a view that contains visualizations, such as a graph, chart, plot, table, map, or any other visual representation of data. You can customize a dashboard, story, or visualization by changing its visual properties.

Dashboards

A dashboard helps you to monitor events or activities at a glance by providing key insights and analysis about your data on one or more pages or screens. You can explore the data that is shown in a visualization by using the interactive title, drilling up or down columns, and viewing the details of a data point.

You can change the visualization type or change the columns that are used in the visualization. You can use filters to focus on one area of your data or to see the impact of one column, and you can use calculations to answer questions that cannot be answered by the source columns.

For information about managing dashboards, see Chapter 9, "Managing content," on page 57.

Stories

A story is a type of view that contains a set of scenes that are displayed in sequence over time. Types of stories include slide show and guided journey.

Stories are similar to dashboards because they also use visualizations to share your insights. Stories differ from dashboards because they provide an over-time narrative and can convey a conclusion or recommendation.

For example, each slide in a story contains an analysis, insight, or piece of information that is revealed as the viewer runs a slide show. The slides build upon each other until the final slide, which provides a conclusion or summary. You can also create the effect of animation by having visualizations and objects appear and disappear during a scene in a story.

You can quickly assemble a story by reusing analysis, insights, and visualizations that you set aside in your collection of pins. You can also add new visualizations, media, web pages, images, shapes, and text to your story.

For information about managing stories, see Chapter 9, "Managing content," on page 57.

Chapter 8. Notebooks

If IBM Cognos Analytics for Jupyter Notebook is enabled in IBM Cognos Analytics, you can work with notebook documents.

You can work with notebook documents, also referred to as notebooks, much like other content in Cognos Analytics.

Note: Before working with notebooks in Cognos Analytics, you should know how to work with and develop notebooks in Jupyter Notebook. You should be familiar with the Jupyter Notebook Editor.

Cognos Analytics for Jupyter Notebook supports the following notebook functionality:

Create and upload notebooks
Create notebooks. Edit, save, copy, and move notebooks. When you open a notebook, you work in the Jupyter Notebook Editor.

Create a notebook from the **New** icon ✛.

Upload notebooks that were created outside of Cognos Analytics. For more information, see "Uploading external notebooks" on page 53.

Run and work with data in a notebook
The CADataConnector API provides the read_data() and write_data() methods to read Cognos Analytics data sources and write to a data source. For example, you can run a notebook that reads external data, produces output, and saves the output as a data source.

You can use the Python programming language in your notebooks.

For more information, see "Reading data from a data source" on page 37 and "Writing data to a data source" on page 40.

Include notebook output in a dashboard, story, or report
Embed the output from a notebook code cell in a dashboard, story, or report. For example, you have a notebook that creates a visualization that is not available in Cognos Analytics. You can add this visualization to a dashboard or story by embedding the code cell that creates it.

For more information adding notebook output to a dashboard or story, see *Adding a Notebook widget* in the *Dashboards and Stories User Guide*.

For more information adding notebook output to a report, see *Including output from a notebook* in the *Reporting User Guide*.

To ensure that the notebook visualizations display properly in dashboards, use some coding best practices.

Samples

The samples show you how to work with notebooks in Cognos Analytics. If the samples are installed, you'll see them in **Team content** > **Samples** > **Notebooks**. For more information, see *Importing and configuring the Jupyter samples* in the *Samples Guide*.

Note: Before you can work with notebooks, Cognos Analytics for Jupyter Notebook must be installed and configured in your Cognos Analytics environment. Contact your administrator to confirm that you have the capability to work with notebooks. If you don't have the notebook capability, you won't see any of the functionality described in the following sections.

Creating a notebook

When you create a notebook, it opens in the Jupyter Notebook Editor.

Procedure

1. Click **New** ➕ and then click **Notebook**.

    Tip: If you don't see the **Notebook** selection, then the notebook capability might not be enabled for you. Contact your administrator to find out.

    The notebook opens in the Jupyter Notebook Editor.
2. To save the notebook, do the following steps:

    a) Click **Save** 🖫, and then click **Save as**.

    b) Choose the destination, type a name for the notebook, and click **Save**.

Notebook actions

After you've saved a notebook, you can perform actions on it from the welcome page or from **My content** or **Team content**.

Click the **Action menu** ⋯ for the notebook and select one of the following actions:

Edit
Open the notebook in the Jupyter Notebook Editor.

Run
Run the notebook in the background. A message is displayed when the notebook starts running and when it finishes. Also a notification is added to your unread notifications 🔔.

View
When you view a notebook, you can see its contents but you can't edit or run it.

Properties
View the notebook properties. This is where you can schedule a notebook to run at regular intervals or on a specific date and time. For more information, see "Scheduling an entry" in the *IBM Cognos Analytics Getting Started Guide*.

Create a new job
Add a notebook to a job that runs the notebook at a scheduled time. For more information, see "Using jobs to schedule multiple entries" in the *IBM Cognos Analytics Getting Started Guide*.

Take ownership
Take ownership of the notebook. When you own a notebook, you can change the permissions for it. This action is available only in **Team content** since you already own the notebooks in **My content**. For more information, see "Simple and granular access permissions" in the *IBM Cognos Analytics Getting Started Guide*.

Copy or move
Copy or move the notebook. For more information, see *Copying or moving entries* in the *IBM Cognos Analytics Getting Started Guide*.

Create a shortcut
Create a shortcut to your notebook in **My content** or **Team content**.

Share
You can copy the URL of the notebook and use it in other places. If Cognos Analytics is connected to a collaboration tool, such as Slack, you can send a link to your notebook to other users. For more information, see "Sharing content" in the *IBM Cognos Analytics Getting Started Guide*.

Remove from recent
Remove the notebook from the welcome page. It still exists in **My content** or **Team content**.

Delete
   Delete the notebook from Cognos Analytics.

Tip: You can also access these actions from **My content** or **Team content** by clicking the **More** icon [···] for a notebook.

Note: A subset of these actions is available if you do not have the **edit notebook** capability.

Reading data from a data source

You can read Cognos Analytics data in a notebook using the Python or R programming languages.

You can read the following types of Cognos Analytics data sources in a notebook:

- Uploaded CSV or XLS files
- Data sets
- Data modules
- Framework Manager packages, including OLAP data

Note: Cognos Analytics does not support reading from data that requires user input. For example, a query subject in Framework Manager with a parameterized filter.

To quickly insert the `read_data()` method in a notebook cell, do the following steps:

1. Create or edit a notebook and position your cursor in the cell after which you want to do the read.

2. Click **Sources** ⛁.

3. Navigate to a data source, select it, and then click **Open**. The method is inserted in the cell with the data source to read specified.

Alternatively, you can type the code in a cell:

In Python

```
data = CADataConnector.read_data(parameters as described in the following sections)
```

One of the following items is returned from the method:

DataFrame
   Returned by default.

List of DataFrame
   Returned when the **sheet_name** parameter is specified and multiple sheets are requested.

Iterator of DataFrame
   Returned when the **chunksize** or **iterator** parameter is specified.

Parameters common to all data sources

For examples of how to code the `read_data()` method, see .

The following parameters can be specified for all supported data source types:

Parameter	Required or optional	Description

path
id
	Specify one of **path** or **id**	Path to the data source. If the data source is in **My content**, specify `.my_folders` at the start of the path. If the data source is in **Team content**, specify `.public_folders` at the start of the path. For example, to specify a file called `sales-notebook` that is stored in **My content**, specify
		
		```path=".my_folders/sales-notebook"```
		
		The ID of the file. For information about how to get the ID of a file, see "Finding the ID of a file" on page 43. For example:
		
		```id="i1F8D76C0FAD34J9CA50118746935D9X7"```

usecols	optional	List of integers or strings that identifies a subset of columns to be returned. You can specify one or more columns by the position number of the column in the file or by column name. For example, to request columns **City** and **Quantity**, specify **In Python** ```usecols=["City","Quantity"]``` If not specified, then all columns are returned. **Note:** This parameter is not applicable for OLAP data in a Framework Manager package.
chunksize	optional	An integer. If specified, the method returns an iterator. The value specifies the number of rows to return each time the method is invoked. For example, to return 3 rows, specify ```chunksize=3``` If both **chunksize** and **iterator** are not specified, then a DataFrame is returned.

iterator	optional	If specified, the method returns an iterator. Specifying
		
		```iterator=True```
		
		without **chunksize** specified returns one row each time the method is invoked.
		
		Specifying `iterator=True` with **chunksize** specified, returns **chunksize** rows each time the method is invoked.
		
		Reset the iterator using the reset method:
		
		In Python
		
		```iterator.reset()```
		
		method.

Parameter	Required or optional	Description
nrows	optional	The maximum number of rows returned. Specify an integer.
		If omitted, the maximum number of rows returned is 10,000. If
		`nrows=0`
		is specified, then the column headings are returned.

XLS file parameters

Uploaded files are treated as sheets of data. Reading one of these data sources returns the rows for the specified sheet of data in the data source.

The following parameter applies only to XLS files:

sheet_name

Optional. Integer, string, or a list of integers or strings. Specifies the integer position of a specific sheet or tab in an XLS file. The first sheet is 0. If you specify a list of strings or integers, then a list of the corresponding sheets is returned. If not specified, the value defaults to 0. Example:

In Python

```
sheet_name=["sheet2","sheet3"]
```

Data module parameters

Reading data from a data module must reflect the modeling done on the data source. For example, a join between two tables and aggregation types to apply.

The following parameters apply only to data modules:

Parameter	Required or optional	Description
table_name	Optional	String or list of strings. Restrict the scope of the request to specific table(s) in the data module. Specify the table(s) by table name(s).
		If you omit **table_name**, the `read_data()` method returns a `DataFrame` that contains the names of the tables defined in the data module. Example:
		In Python
		`table_name=["table1","table2"]`
calculation `11.1.5`	Optional	String or list of strings. Read a calculation from a data module. Specify a calculated column in the data module.

Package parameters

Reading data from a package must reflect the modeling done on the data source. For example, the relationship between objects in the package.

The following parameters apply only to packages:

Parameter	Required or optional	Description
query_subject	Optional	String or list of strings. Restrict the scope of the request to the specific query subjects(s) in the package. Specify the query subject(s) by query subject name(s). Example: ```\nquery_subject="query1"\n```
folder_name	Optional	String or list of strings. Restrict the scope of the request to a folder in the package. Displays the contents of all folder(s) with that name in the package. If you want to see only the content of folder c that's in folder b that's in folder a specify the **folder_name** parameter as a list: **In Python** ```\nfolder_name=["a","b","c"]\n``` This returns only the folder c in this path, even if there are other folders with the name c in the package.

metadata	Optional. Applies only to OLAP data in a Framework Manager package.	Value can be True or False.
		
		Specifying
		
		```\nmetadata=True\n```
		
		returns the query subjects in the package. Specifying
		
		```\nmetadata=False\n```
		
		returns the data in the package. If not specified, then a default value of False is used.

Note: You can use either single or double quotation marks in a method but not a mix of both.

Writing data to a data source

You can write Cognos Analytics data in a notebook using the Python or R programming languages.

You can save or create the data source in **My content** or **Team content**.

To write data to the data source, specify the following code in a notebook cell:

In Python

```
data = CADataConnector.write_data(parameters as described in the following sections)
```

Parameter	Required or optional	Description
data	required	Pandas.DataFrame. Contains the table of data, which is written to the file.

Parameter	Required or optional	Description
path id	Specify one of **path** or **id**	Path to the data source. If the data source is in **My content**, specify `.my_folders` at the start of the path. If the data source is in **Team content**, specify `.public_folders` at the start of the path. For example, to specify a file called `sales-notebook` that is stored in **My content**, specify ``` path=".my_folders/sales-notebook" ``` The ID of the file. For information about how to get the ID of a file, see "Finding the ID of a file" on page 43. For example: ``` id="i1F8D76C0FAD34J9CA50118746935D9X7" ```
mode	optional	**x** 　Create the file and write to it. If the file exists, the method fails with an exception. Default value. **w** 　Overwrite any data that exists in the file. The columns that you are writing to the file must match the ones in the file. Create the file if it doesn't exist. **a** 　Append to the end of the file. The columns that you are adding to the file must match the ones in the file. Create the file if it doesn't exist. Example: ``` mode="w" ```

Note: You can use either single or double quotation marks in a method but not a mix of both.

For examples of how to code the `write_data()` method, see "Python notebook examples" on page 44 and "R notebook examples" on page 47.

Searching for data objects

11.1.7 You can search for data objects in a notebook using the Python or R programming languages.

The `search_data()` method is used to find data objects so that they can be further processed using the CADataConnector.

The result provides a list of data objects and their connection paths, which may be copy/pasted for use with the various connection and access functions in the CADataConnector.

To search for data objects, specify the following code in a notebook cell:

In Python

```
data = CADataConnector.search_data(parameters as described in the following sections)
```

In R

```
data <- CADataConnector::search_data(parameters as described in the following sections)
```

Paramet er	Req uire d or opti ona l	Description
query='se arch _term'	opti onal	*search _term* can be any data object. **Tip:** If no parameters are supplied, that is, `CADataConnector.search_data()`, all data objects available are selected, to a maximum of 50. See an example of the resulting output.
types=*typ es*	opti onal	*types* can be replaced with any number of (separated by either '|' or ',') the following data object types: • uploadedFile • dataset • dataset2 • module • package Example: ``` types='module,dataset' ``` If types=*types* is not specified, the default is all of the types listed above.
max=*nu mber*	opti onal	*number* is any number greater than zero. Example: ``` max=20 ``` If max=*number* is not specified, the default is ``` max=50 ``` **Note:** Use a higher number if you see a message that the maximum results were returned.

Note: You can use either single or double quotation marks in a method but not a mix of both.

Example output when no parameters are specified

When no parameters are supplied, the output appears in a list:

```
Results found: 50. ( see more results by using "max=" parameter with a number higher than 50 )

Type              Open path
package       .public_folders/Samples/Models/GO sales (analysis)
package       .public_folders/Samples_LG_DQ/Models/GO Data Warehouse (query)
package       .public_folders/Samples/Models/GO sales (query)
package       .public_folders/Samples_LG_DQ/Models/GO Sales (query)
package       .public_folders/Samples/Models/GO data warehouse (query)
package       .public_folders/Samples_LG_DQ/Models/GO Data Warehouse (analysis)
package       .public_folders/Samples/By feature/Audit
package       .public_folders/Samples/Models/GO data warehouse (analysis)
package       .public_folders/Samples_LG_DQ/Models/GO Sales (analysis)
package       .public_folders/Samples/Data/Sporting goods company
uploadedFile .public_folders/Samples/By feature/Notebooks/Data/Source files/Notebook data/
Weather
uploadedFile .public_folders/Samples/By feature/Notebooks/Data/Source files/
```

```
Hospital_floor_plan.xlsx
.....
```

Python notebook examples

```
CADataConnector.search_data('boston')
```

Returns everything with 'boston' in the name or data, to a maximum of the default number of results.

```
CADataConnector.search_data(types='module,package',max=100)
```

Returns only modules or packages to a maximum of 100 results.

```
CADataConnector.search_data(max=20)
```

Returns everything to a maximum of 20 results.

Note: All or none of the parameters may be used. If the query is to be used, it must be the first parameter. The other parameters are named and are not position-dependent.

R notebook examples

```
CADataConnector::search_data('boston')
```

Returns everything with 'boston' in the name or data, to a maximum of the default number of results.

```
CADataConnector::search_data(types='module,package',max=100)
```

Returns only modules or packages to a maximum of 100 results.

```
CADataConnector::search_data(max=20)
```

Returns everything to a maximum of 20 results.

Note: All or none of the parameters may be used. If the query is to be used, it must be the first parameter. The other parameters are named and are not position-dependent.

File paths that contain a forward slash

To reference a file or folder name that contains a folder slash in the CADataConnector API, you must use a specific syntax.

To enable the CADataConnector API to differentiate between a forward slash that indicates folder structure and a forward slash that is part of a file or folder name, enclose each folder or file name in single or double quotation marks, separate each folder or file name in the path with a comma, and enclose the whole thing in square brackets.

In the following example, the path to a file named `my/data.csv` is `my/folder-1/my/folder-2/my/data.csv`.

```
data = CADataConnector.read_data(path=["my/folder-1","my/folder-2","my/data.csv"])
```

Finding the ID of a file

To reference a file in the CADataConnector API, you can use its ID.

Procedure

1. Do one of the following things:

a) On the welcome page, click the **Action menu** ⬚ for a file and select **Properties**.

b) From **My Content** or **Team content**, click the **More** icon ⬚ for a file and then select **Properties**.

2. In the **General** tab, click **Advanced**. The **ID** field contains the file ID.

Python notebook examples

Here are some examples that demonstrate how to work with Cognos Analytics data sources in a notebook using the Python programming language.

Tip: To switch your notebook's programming mode from **R** to **Python**, from the **Kernel** menu, select **Change kernel** > **Python**.

Reading a file

The following example reads a file called `SampleFile_GOSales.xls`, outputs the entire file, and then specifies the **nrows** and **usecols** parameters to output the **City** and **Quantity** columns for the first 2 rows of data in the file.

Reading part of a file

Specify **iterator** and **chunksize** to work with chunks of data, rather than the whole data source all at once. The following example reads 20,000 rows at a time from the `SampleFile_GOSales.xls` file.

Writing to a file

The following example writes the contents of a `DataFrame` table of data in to a file called `regions sales`, which is then stored in **My content**.

```
In [20]:  import pandas as pd
          newData = pd.DataFrame({'Regions':['Americas','Europe','Asia'], 'Sales':[300,400,500]})

In [21]:  newData

Out[21]:     Regions  Sales
          0  Americas   300
          1  Europe     400
          2  Asia       500

In [22]:  CADataConnector.write_data(newData,path=".my_folders/region sales",mode="w")
```

Reading a data module

A data module has relationships, aggregations, calculated columns, and so on, defined on its data. The read_data() method defines a section of data from a data module by selecting columns from the tables in the module. The data that is returned includes the relationships, aggregations, calculated columns, and so on, defined in the data module.

Specifying the read_data() method without the **table_name** parameter returns a **DataFrame** that contains the names of all the tables defined in the data module, as shown in the following example:

```
In [26]:  data = CADataConnector.read_data(path=".public_folders/jimdatasets/sample data module")
          data

Out[26]:                   Name          Table Name          Type
          0  American Time Use Xlsx   M1_American_time_use_xlsx  Data
          1  Banking Loss Events Xlsx  M1_Banking_loss_events_xlsx  Data
```

In the following example, the M1_American_time_use_xlsx table in the sample data module data module is read and the columns **Year** and **Children** are returned.

```
In [28]:  data = CADataConnector.read_data(path=".public_folders/jimdatasets/sample data module",
                                           table_name='M1_American_time_use_xlsx',
                                           usecols=["Year","Children"])
          data

Out[28]:     Year   Children
          0  2004   0.844863
          1  2009   0.863970
          2  2010   0.881495
          3  2006   0.959833
          4  2008   0.902300
          5  2012   0.832634
          6  2003   0.872129
          7  2005   0.938406
          8  2007   0.914562
          9  2011   0.835999
```

Reading a calculated column from a data module `11.1.5`

Use the **calculation** parameter to read a calculated column from a data module.

The following example reads 2 calculations from the calculation_data_module data module.

```
In [5]:  # Multiple calculations can be read at once

         data = CADataConnector.read_data(
             path=".my_folders/calculation_data_module",
             calculation=['half_population', 'double_population']
         )
         data

Out[5]:     half_population  double_population
         0   16940919.0        67763676
```

Reading a package

Like a data module, a package has relationships, aggregations, calculated columns, and so on, defined on its data. In addition, a package logically groups data into query subjects and folders. You can use the read_data() method to navigate through the structure of a package by using the **query_subject** and **folder_name** parameters.

The following code reads the `Go data warehouse` package:

```
In [1]: toplevel = CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)")

In [2]: toplevel

Out[2]:
                   Name    Query Subject   Type
     0             HR (query)         N/A   Folder
     1   Sales and Marketing (query)  N/A   Folder
     2        Finance (query)         N/A   Folder
     3             Filters            N/A   Folder
```

Specifying the **folder_name** parameter returns the contents of all folder(s) with that name in the package. If you want to return only the content of one specific folder, for example folder c, that's inside folder b, that's inside folder a, put a list of the folder names in the **folder_name** parameter. The following example uses the **folder_name** parameter to get all of the query subjects in the `Employee expense` folder:

```
In [3]: CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)",folder_name=toplevel['Name'][0])

In [4]: hr

Out[4]:
                          Name        Query Subject   Type
     0   Employee expense (query)          N/A   Folder
     1   Employee expense plan (query)     N/A   Folder
     2   Employee position summary (query) N/A   Folder
     3   Employee ranking (query)          N/A   Folder
     4   Employee recruitment (query)      N/A   Folder
     5   Employee succession (query)       N/A   Folder
     6   Employee summary (query)          N/A   Folder
     7   Employee survey (query)           N/A   Folder
     8   Employee survey target (query)    N/A   Folder
     9   Employee training (query)         N/A   Folder

In [5]: exp = CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)",folder_name=hr['Name'][0])

In [6]: exp

Out[6]:
                  Name                          Query Subject                      Type
     0   Employee expense fact   [Employee expense (query)].[Employee expense f...  Data Sheet
     1   Account                 [Employee expense (query)].[Account]               Data Sheet
     2   Employee by manager     [Employee expense (query)].[Employee by manager]   Data Sheet
     3   Employee by region      [Employee expense (query)].[Employee by region]    Data Sheet
     4   Employee expense        [Employee expense (query)].[Employee expense]      Data Sheet
     5   Organization            [Employee expense (query)].[Organization]          Data Sheet
     6   Organization (consolidated)  [Employee expense (query)].[Organization (cons...  Data Sheet
     7   Position-department     [Employee expense (query)].[Position-department]   Data Sheet
     8   Time                    [Employee expense (query)].[Time]                  Data Sheet
     9   YTD Time                [Employee expense (query)].[YTD Time]              Data Sheet
```

The following code returns the query items that are in the `Employee expense fact` query subject:

```
In [20]: expfacts = CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)",
                                               query_subject=[exp['Query Subject'][0]])

In [21]: expfacts

Out[21]:
         Expense unit quantity  Expense total  Expense unit quantity YTD  Expense total YTD
     0   4.004779e+06           168696729.2    4.004779e+06               168696729.2
```

The following code returns the query items that are in the `Account` query subject:

```
In [24]: accounts = CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)",
                                              query_subject=[exp['Query Subject'][1]])
         accounts.columns

Out[24]: Index(['Account name (level 1)', 'Account name (level 2)',
                'Account name (level 3)', 'Account name (level 4)',
                'Account name (level 5)', 'Account name (level 6)',
                'Account name (level 7)', 'Account name (level 8)',
                'Account name (level 9)', 'Account name (level 10)',
                'Account name (level 11)', 'Account name (level 12)',
                'Account name (level 13)', 'Account name (level 14)',
                'Account name (level 15)', 'Account name (level 16)', 'Account name',
                'Account level', 'Account parent', 'Debit or credit',
                'Account code (level 1)', 'Account code (level 2)',
                'Account code (level 3)', 'Account code (level 4)',
                'Account code (level 5)', 'Account code (level 6)',
                'Account code (level 7)', 'Account code (level 8)',
                'Account code (level 9)', 'Account code (level 10)',
                'Account code (level 11)', 'Account code (level 12)',
                'Account code (level 13)', 'Account code (level 14)',
                'Account code (level 15)', 'Account code (level 16)', 'Account key',
                'Account code', 'Account type code', 'Account class code'],
               dtype='object')
```

The following code selects the first two query subjects in the `Employee expense` folder. **Expense total** is returned from the first query subject (**Employee expense fact**) and **Account code** is returned from the second query subject (**Account**).

```
In [25]: exp_by_account = expfacts = CADataConnector.read_data(path=".public_folders/jimdatasets/GO data warehouse (query)",
                                               query_subject=[exp['Query Subject'][0], exp['Query Subject'][1]],
                                               usecols=['Expense total','Account code'])

In [26]: exp_by_account

Out[26]:
         Expense total  Account code
     0   95723630.59    601100
     1   39936062.73    601500
     2   4008748.74     601600
     3   10555741.81    605050
     4   14514144.54    605500
     5   3958400.79     605800
```

Reading the metadata for OLAP data in a Framework Manager package

The following code shows the **metadata** parameter set to true, which returns the query subjects in the package:

```
In [5]: data = CADataConnector.read_data(
            path=".public_folders/PowerCubePackage",
            query_subject="[PowerCube].[Products].[Products]",
            metadata=True
        )
        display(data)
```

	Name	Query Subject
0	Products	[PowerCube].[Products].[Products].[Products]
1	Product line	[PowerCube].[Products].[Products].[Product line]
2	Product type	[PowerCube].[Products].[Products].[Product type]
3	Product	[PowerCube].[Products].[Products].[Product]

```
In [ ]:
```

R notebook examples

11.1.6 Here are some examples that demonstrate how to work with Cognos Analytics data sources in a notebook using the R programming language.

Tip: To switch your notebook's programming mode from **Python** to **R**, from the **Kernel** menu, select **Change kernel** > **R**.

A basic read

The following example reads a file called `SampleFile_GOSales.xls` and displays the first six rows of it.

```
In [3]: data <- CADataConnector$read_data(path=".public_folders/jimdatasets/SampleFile_GOSales.xls")
        head(data)
```

Retailer country	Province or State	City	Postal code	Short postal code	Order method type	Retailer type	Retailer	Product line	Product type	...		Planned revenue
United Kingdom	West Midlands	Birmingham	B29 5DW	B2	Web	Outdoors Shop	Seamate Chandlers	Camping Equipment	Cooking Gear		48	12310.12
Canada	Saskatchewan	Regina	S1J 3C5	S1J	Web	Sports Store	Ultra Sports	Camping Equipment	Cooking Gear	...	5	24112.81
United States	Florida	Miami	33176	33176	Web	Sports Store	Island Sports	Camping Equipment	Cooking Gear	...		8026.62
United Kingdom	West Midlands	Birmingham	B20 3BA	B2	Web	Department Store	Leisure Land	Camping Equipment	Cooking Gear		.88	10794.42
United Kingdom	West Midlands	Birmingham	B20 3BA	B2	Web	Department Store	Leisure Land	Camping Equipment	Cooking Gear	...		8665.85
United Kingdom	Greater London	London	E15 3JR	E1	Sales visit	Outdoors Shop	Jensen Mountaineering	Camping Equipment	Cooking Gear		.90	19967.70

Reading a file

The following example reads a file called `SampleFile_GOSales.xls` and specifies the **nrows** and **usecols** parameters to output the **City** and **Quantity** columns for the first two rows of data in the file.

```
In [1]:  data <- CADataConnector$read_data(
             path=".public_folders/jimdatasets/SampleFile_GOSales.xls",
             usecols=list('City', 'Quantity'),
             nrows=2
         )
         data
```

City	Quantity
Birmingham	1868
Regina	3659

Reading part of a file

Specify **iterator** and **chunksize** to work with chunks of data, rather than the whole data source all at once. The following example reads 20,000 rows at a time from the SampleFile_GOSales.xls file. As the file is read, the number of rows in the chunk is displayed.

```
In [8]:  iter <- CADataConnector$read_data(
             path=".public_folders/jimdatasets/SampleFile_GOSales.xls",
             chunksize=20000
         )
```

```
In [9]:  chunk <- iter$get_chunk()
         while(nrow(chunk) > 0) {
             print(nrow(chunk))
             chunk <- iter$get_chunk()
         }
```

```
[1] 20000
[1] 20000
[1] 20000
[1] 5535
```

Writing to a file

The following example writes the contents of a DataFrame table of data in to a file called regions sales, which is then stored in **My content**.

```
In [1]:  newData <- data.frame("Regions" = c("Americas", "Europe", "Asia"), "Sales" = c(300, 400, 500))
```

```
In [2]:  newData
```

Regions	Sales
Americas	300
Europe	400
Asia	500

```
In [5]:  CADataConnector$write_data(newData, path=".my_folders/region sales", mode="w")
```

Reading a data module

A data module has relationships, aggregations, calculated columns, and so on, defined on its data. The `read_data()` method defines a section of data from a data module by selecting columns from the tables in the module. The data that is returned includes the relationships, aggregations, calculated columns, and so on, defined in the data module.

Specifying the `read_data()` method without the **table_name** parameter returns a `DataFrame` that contains the names of all the tables defined in the data module, as shown in the following example:

```
In [6]: data <- CADataConnector$read_data(
            path=".public_folders/Samples/Data/Coffee sales and marketing"
        )
        data
```

Name	Table Name	Type
Sales Receipts	i201904_sales_reciepts	Data
Pastry Inventory	pastry_inventory	Data
Sales Targets	sales_targets	Data
Customer	customer	Data
Dates	Dates	Data
Product	product	Data
Sales Outlet	sales_outlet	Data
Staff	staff	Data
Generation	generations	Data
Spoilage_Expense	N/A	Calculation
beverages_sale	N/A	Calculation
beverages_sale_1	N/A	Calculation
beverages_sale_2	N/A	Calculation
beverages_sale_3	N/A	Calculation
beverages_sale_4	N/A	Calculation

In the following example, the `pastry_inventory` table in the `Coffee sales and marketing` data module is read and the columns **Date** and **Quantity Sold** are returned.

```
In [8]: data <- CADataConnector$read_data(
            path=".public_folders/Samples/Data/Coffee sales and marketing",
            table_name='pastry_inventory',
            usecols=list("Date", "Quantity Sold")
        )
        data
```

Date	Quantity Sold
2019-04-04	48
2019-04-05	0
2019-04-11	127
2019-04-12	133
2019-04-13	123
2019-04-17	149
2019-04-19	159
2019-04-20	163
2019-04-21	161
2019-04-22	102
2019-04-23	93
2019-04-26	102
2019-04-01	46
2019-04-02	46
2019-04-03	41
2019-04-06	70
2019-04-07	104
2019-04-08	118
2019-04-09	91
2019-04-10	110
2019-04-14	167
2019-04-15	149
2019-04-16	144
2019-04-18	117
2019-04-24	105
2019-04-25	109
2019-04-27	77

Reading a package

Like a data module, a package has relationships, aggregations, calculated columns, and so on, defined on its data. In addition, a package logically groups data into query subjects and folders. You can use the read_data() method to navigate through the structure of a package by using the **query_subject** and **folder_name** parameters.

The following code reads the `Go data warehouse` package:

```
In [3]: toplevel <- CADataConnector$read data(
        path=".public_folders/Samples_DQ_10.2.2_DB2/Models/GO Data Warehouse (query)")
        toplevel
```

Name	Query Subject	Type
HR (query)	N/A	Folder
Sales and Marketing (query)	N/A	Folder
Finance (query)	N/A	Folder
Filters	N/A	Folder

Specifying the **folder_name** parameter returns the contents of all folders with that name in the package. If you want to return only the content of one specific folder, for example folder c, that's inside folder b, that's inside folder a, put a list of the folder names in the **folder_name** parameter. The following example uses the **folder_name** parameter to get all of the query subjects in the `Employee expense` folder:

```
In [4]: hr <- CADataConnector$read_data(
            path=".public_folders/Samples_DQ_10.2.2_DB2/Models/GO Data Warehouse (query)",
            folder_name=toplevel[1,1]
        )
        hr
```

Name	Query Subject	Type
Employee expense (query)	N/A	Folder
Employee expense plan (query)	N/A	Folder
Employee position summary (query)	N/A	Folder
Employee ranking (query)	N/A	Folder
Employee recruitment (query)	N/A	Folder
Employee succession (query)	N/A	Folder
Employee summary (query)	N/A	Folder
Employee survey (query)	N/A	Folder
Employee survey target (query)	N/A	Folder
Employee training (query)	N/A	Folder

```
In [5]: exp <- CADataConnector$read_data(
            path=".public_folders/Samples_DQ_10.2.2_DB2/Models/GO Data Warehouse (query)",
            folder_name=hr[1,1]
        )
        exp
```

Name	Query Subject	Type
Employee expense fact	[Employee expense (query)].[Employee expense fact]	Data
Account	[Employee expense (query)].[Account]	Data
Employee by manager	[Employee expense (query)].[Employee by manager]	Data
Employee by region	[Employee expense (query)].[Employee by region]	Data
Employee expense	[Employee expense (query)].[Employee expense]	Data
Organization	[Employee expense (query)].[Organization]	Data
Organization (consolidated)	[Employee expense (query)].[Organization (consolidated)]	Data
Position-department	[Employee expense (query)].[Position-department]	Data
Time	[Employee expense (query)].[Time]	Data
YTD Time	[Employee expense (query)].[YTD Time]	Data

The following code returns the query items that are in the `Employee expense fact` query subject:

```
In [10]: expfacts <- CADataConnector$read_data(
             path=".public_folders/Samples_DQ_10.2.2_DB2/Models/GO Data Warehouse (query)",
             query_subject=list(exp[1,2])
         )
         expfacts
```

Expense unit quantity	Expense total	Expense unit quantity YTD	Expense total YTD
4004779	168696729	4004779	168696729

The following code returns the query items that are in the **Account** query subject:

```
In [14]: accounts <- CADataConnector$read_data(
             path=".public_folders/Samples_DQ_10.2.2_DB2/Models/GO Data Warehouse (query)",
             query_subject=list(exp[2,2])
         )
         accounts[0,]
```

Account name (level 1)	Account name (level 2)	Account name (level 3)	Account name (level 4)	Account name (level 5)	Account name (level 6)	Account name (level 7)	Account name (level 8)	na...	Debit or credit

Reading the metadata for OLAP data in a Framework Manager package

The following code shows the **metadata** parameter set to true, which returns the query subjects in the package:

```
In [5]: data <- CADataConnector$read_data(
            path=".public_folders/powercube",
            query_subject="[powercube].[Products].[Products]",
            metadata=TRUE
        )
        data
```

Name	Query Subject
Products	[powercube].[Products].[Products].[Products]
Product line	[powercube].[Products].[Products].[Product line]
Product type	[powercube].[Products].[Products].[Product type]
Product	[powercube].[Products].[Products].[Product]

Uploading external notebooks

You can upload Jupyter Notebooks (.ipynb or .zip extension) that were created in a Jupyter environment outside of IBM Cognos Analytics.

The uploaded notebooks are matched against the following JSON schemas:

- `https://github.com/jupyter/nbformat/blob/master/nbformat/v3/nbformat.v3.schema.json` (version 3 (v3) notebooks)
- `https://github.com/jupyter/nbformat/blob/master/nbformat/v4/nbformat.v4.schema.json` (version 4 (v4) notebooks)

If a notebook doesn't conform to either of these schemas, the upload is rejected.

Jupyter Server creates all new notebooks using the v4 schema.

About this task

The process of uploading notebook files is similar to the process of uploading spreadsheets and text files that are used as data sources in Cognos Analytics. For example, the notebook files have the same size limitations as other uploaded file types. For more information, see Upload data files.

Procedure

Use the following methods to upload the notebooks:

- In the vertical application toolbar, tap + **New**, and then tap **Uploaded files**. Locate the notebook files (.ipynb or .zip) on your local drive or on the LAN, and select one or multiple files to upload them.

- In the welcome page, drag one or multiple .ipynb or .zip files from your local drive onto the welcome page to activate the **Quick launch** functionality. When **Quick launch** appears, drop the files into the **Notebook** box.

- In the welcome page, tap the **Browse** link at the bottom of the page. Locate the files on your local drive, and select one or multiple files to upload them.

- From a folder in **Team content** or **My content**, click the **New** + icon, and select **Upload files**. Locate the notebook files on your local drive or on the LAN, and select one or multiple files to upload them. The files are saved to the folder from which you initiated the upload.

Results

A notebook is created for each uploaded .ipynb file in **My content**. However, when the upload was initiated from a specific folder, the notebooks are created in that folder.

What to do next

You can seamlessly open an uploaded v4 notebook in the edit mode. To open a v3 notebook in the edit mode, the Jupyter server temporarily converts it to the v4 format. If you save the notebook, it is saved in the v4 format.

Tip: Older versions of Jupyter might not read the v4 format. To preserve the original notebook version, close it without saving.

You can view both v3 and v4 notebooks in the view-only mode. Because you can't interact with notebooks in this mode, there is no need to convert v3 notebooks to v4.

You can import uploaded v3 and v4 notebooks into a Cognos Analytics dashboard. The **Notebook** widget in the dashboards conforms to the v4 JSON schema so the visualizations in v4 notebooks display seamlessly in the dashboard. To ensure that the v3 notebook visualizations display properly in the dashboard, you must open and save the v3 notebooks in the edit mode before you import them into the dashboard.

Connecting Watson Studio notebooks to Cognos Analytics (Cloud Pak for Data only)

If you are running Cognos Analytics on Cloud Pak for Data, you can configure Watson Studio notebooks on Cloud Pak for Data to connect to Cognos Analytics.

Once it is configured, your Watson Studio notebook can

- read data assets from Cognos Analytics
- write data to Cognos Analytics

To connect your notebook to Cognos Analytics, add these two lines to the notebook:

```
from ca_data_connector import CADataConnector
```

```
CADataConnector.connect({'url':'CA_URL_in_Cloud_Pak_for_Data'});
```

where *CA_URL_in_Cloud_Pak_for_Data* is the URL that you use to connect to your Cognos Analytics instance on Cloud Pak for Data.

Note: You don't need to include your credentials in the lines above. Cloud Pak for Data will use the credentials from your current Notebook session.

Best practices for displaying notebook visualizations in dashboards

As a notebook author, you can use some coding best practices to ensure that notebook visualizations are properly displayed when they are rendered in dashboards.

Resizing a Bokeh visualization

For the dashboard to properly resize any Bokeh visualization, don't hardcode the visualization width and height elements in the notebook. Also, when creating any figure, plot, or column, use the parameter `sizing_mode='scale_width'`.

Here is an example of the correct coding practice:

```
```
from bokeh.plotting import figure, show

x = [1, 2, 3]
y = [1, 2, 3]

p = figure(sizing_mode='scale_width')
p.line(x, y)

show(p)
```
```

The visualizations that are coded this way scale properly in the dashboard, maintaining their aspect ratio.

Reloading a Bokeh visualization after a browser refresh

For a dashboard to properly reload a Bokeh visualization after a browser refresh, include the Bokeh initialization statement `output_notebook()` in the applicable notebook output cells.

Here is an example of the correct coding practice:

```
```
# Notebook cell 1
from bokeh.plotting import figure, show

x = [1, 2, 3]
y = [1, 2, 3]

p = figure(sizing_mode='scale_width')
p.line(x, y)

# Notebook cell 2
output_notebook()
show(p)
```
```

Chapter 9. Managing content

The IBM Cognos Analytics content includes reports, report views, dashboards, stories, packages, uploaded files, folders, URLs, shortcuts, and so on.

Tip: To simplify the documentation process, the content items are often referred to as entries.

To organize and manage the content, you can create a folder hierarchy for entries. You can move, copy, disable, or delete the entries. You can also hide an entry to prevent it from unnecessary use, share the entry with other users, or embed it in a custom website.

Copying or moving entries

When you create a copy of an entry, you create a replica of that entry in another location in the portal. When you move an entry, you remove it from the current folder and place it in another folder. When you copy and move entries, the IDs and links are either maintained or overwritten.

Before you begin

You must have read permissions for the entry that you are attempting to copy or move. You must also have traverse permissions for the current folder, and write and traverse permissions for the target folder.

About this task

If you copy or move a report from one folder to another, the report retains its ID and any links, including the link to the associated package. However, when you overwrite an existing entry, the link behavior depends on whether you copy or move the entry.

- If you copy and overwrite an existing entry, the copied entry ID and links replace those of the existing entry. In this case, you might need to update links, such as links to job schedules for reports.
- If you move and overwrite an existing entry, the existing entry ID and links are maintained. In this case, references to the moved entry are broken.

Procedure

1. From the entry context menu ![...], click **Copy or move**.
2. Locate the target folder, and click **Copy to**.

Copying and pasting assets

You can reuse an asset that you created by copying and pasting it between a dashboard, report, exploration, or story.

The following table shows how you can copy and paste assets.

From (Source)	To (Target)
Dashboard	Dashboard, report, exploration, story
Exploration	Exploration, dashboard, report, story
Story	Story, dashboard, report, exploration
Report	Report

The pasted asset can lose properties because dashboards, reports, explorations, and stories do not support all properties. For example, some properties apply only to reports and not to dashboards. A message informs you about the properties that are not supported.

If you copy and paste assets between instances of Cognos Analytics, the instances must have the same version.

Before you begin

Before pasting your asset into the target report, select the location, such as a table cell or the page body.

In a dashboard, exploration, and story, you can't copy and paste from one browser tab to another browser tab or copy and paste between tabs in the same browser. Only in a report you can copy and paste from one browser's tab to another report in another browser's tab.

For copying and pasting between reports, you can use either the same tab or different tabs of the same browser. However, if the source report is larger (typically more than 5 MB), then use the same browser tab for pasting. The following message is displayed: **Due to the report size the paste can be done in the same tab only**.

When you paste multiple assets in a report, a dialog box is displayed to allow pasting the assets in a new table.

By default, the table has two columns with the number of rows calculated based on the number of assets that are being pasted. You can override the number of rows and columns. If the table does not have enough cells, then you get the following message: **The table is too small for the number of assets**. If you click **No**, then the table is not created and the assets are pasted one below the other. If you close the dialog box by clicking the **x** icon, the paste action is canceled.

In reporting, data items that do not match the report visualization slot type are dropped.

A certain mix of data sources that are supported by Dashboard, Exploration, and Story are not supported by Reporting. When this happens a proper warning is shown. For example, Reporting does not support a mix of modules and packages or multiple modules or multiple packages by using classic query mode. The

following warning for mixing packages looks is displayed: **A report can reference multiple packages that use the dynamic query mode, or one package that uses the compatible query mode.**

In addition, Reporting does not support dimensional modules, except for IBM Planning Analytics modules.

When you copy from Dashboard, Exploration, and Story to paste in a report, the original widget size is kept only if the size is specified in pixels. If the widget size is set in percentage, then it will not be used during paste, instead the Reporting default is used.

When you copy and paste from a report to another report, all the assets that are referenced by the copied asset from the source report are also pasted in the target report. For example, queries referencing other queries.

Note: IBM Cognos Analytics might change the name of the source assets to avoid name conflict with assets that are already present in the target report.

When you copy and paste from a report to another report, and you select the page body or a table and perform the copy action, then all their assets will be copied over. For example, you have a table with 10 cells each cell with a list, crosstab, visualization. You do not need to select them one by one. Select the table and perform the copy action. A message will display that one asset is copied. Cognos Analytics copied all assets, 10 in this example. Copying and pasting a page, results in similar behavior.

You can paste multiple times in the same or different target Dashboard, report, exploration, or story.

You cannot paste the following widgets and assets from a dashboard to a report:

- Text
- Image
- Media
- Web page
- Shape
- Data player
- Driver analysis
- Decision tree
- Sunburst
- Spiral

Note: Some attributes such as custom titles, named colors, data sets, stand-alone spreadsheet data sources, and border colors can't be carried over when you paste an asset. Make sure that you review the messages that appear after pasting and if necessary, update the asset in its new location.

Procedure

1. Select one or more assets.
2. Use the keyboard shortcut for your operating system to copy.

   A message is displayed that assets are copied.
3. In the dashboard, report, exploration, or story that you pasting to, use the keyboard shortcut for your operating system to paste.

Sharing content

If an administrator connects Cognos Analytics to Slack or enables email sharing, you can send Cognos Analytics report and dashboard content to other users. You can also share your Cognos Analytics content via URL links and embedded html in web pages. For Dashboards only, you can save your content as an exported PDF document.

You can share content from two locations:

- your Cognos Analytics canvas
- the Team content folder

Sharing content from the canvas

In Cognos Analytics, you can send Cognos Analytics content that you are currently viewing on your Reporting or Dashboard canvas to your colleagues via ✉ **Email** or ⣿ **Slack**.

For more information, see the Blog post Increased Collaboration with Slack Integration in IBM Cognos Analytics 11.1!

Before you begin

Your administrator must configure a mail server and/or a collaboration platform before you can use this feature.

Procedure

1. While viewing your Cognos Analytics content in the Reporting or Dashboard component, click the **Share** icon ⤳ in the application bar that appears at the top of your Cognos Analytics window.

   Tip: A different **Share** icon ⤳ appears in a context menu, after you click the More icon ••• for a content folder or on the **Welcome** page. However, the **Share** panel that you invoke from a context menu only allows you to share saved report outputs or dashboards. To share an image of an asset that is open and that you are currently viewing, you must click the **Share** icon ⤳ in the application bar.

2. In the **Share** panel, click the **Send** tab.

   Tip: If the **Send** tab does not appear, the administrator did not configure a mail server and did not configure a collaboration platform.

3. Click one of these platforms:

   - **Email** - go to step "4" on page 60.

     Tip: If **Email** does not appear as a platform, your administrator did not enable content sharing by email.

   - *Slack_platform_name* - go to step "5" on page 61.

     Tip: If a **Slack** platform appears grayed out, your administrator has disabled the platform. If you are not part of a slack workspace, you can join it through the pop-up window and then click on the workspace again in Cognos Analytics to continue sharing your content.

4. If you selected **Email**, in the **Share with email** panel, perform these steps:

   a) Search for a recipient name, group, role, distribution list, or contact and then click **Search directory**. Repeat this step as necessary.

      Tips:

      - To add an external email address, enter the full address and then press Enter.
      - If you start typing someone's name that you emailed recently, the full name quickly appears and you can select it.
      - You can narrow the search results and speed up retrieval time by typing more characters in the recipient fields.
      - Search results appear for all namespaces that you are logged into. You may need to scroll to see results for a different namespace.
      - You can also browse for a recipient, by clicking **Directory** > *namespace*.

        To quickly find an entry:

- Type text in the 🔍 **Find** field.

  You can click the Search Method icon ⚬ to find entries that either contain, start with, or are an exact match with the text that you type.

- Click the filter ▽ icon to narrow the view of entries.

b) Enter the email subject.

c) Enter the message that you want to send.

  Tip: To format your message, use the **Styles** and **Format** buttons.

5. If you selected *Slack_platform_name*, in the **Share with Slack:** *platform_name* panel, perform these steps:

a) Enter a channel or recipient name.

  Tip: Start typing either a Slack channel name (starting with the hashtag symbol (#)) or a Slack user name if you want to send a Direct Message in Slack. As you type, the list of possible choices is filtered, until you can select the one you want.

b) Enter the message that you want to send.

  Tip: You must include some text in your message.

6. Select **Include link** if you want your recipient to click a link to your content.

  Tip: Include link appears only if your content is located in the **Team content** folder. Other users cannot link to content located in **My content**.

7. Select **Include image** if you want to attach an image of your content to your Email or Slack message.

8. If you selected the **Include image** option, you can go to the **Modify your image (optional)** pane on the left and edit the image before you send it.

9. Click **Send**.

Results

Your message (and your image, if applicable) is sent to your selected recipients via email or Slack.

Editing canvas content for sharing

You can annotate a screen shot image of your Cognos Analytics content before you share it via email or Slack.

Before you begin

Open a dashboard or report, go to the view that you want to edit, and then begin the steps to send a message via email or via Slack.

Procedure

1. Go to the **Modify your image (optional)** pane on the left.

  Tips:

  • As you annotate your image, the only way you can lose your changes is to click **Cancel** in the **Share with Slack** panel on the right. If you accidentally click the top or left toolbar, the **Modify your image (optional)** temporarily disappears. However, you can resume your editing where you left off by clicking the **Share** icon ⤴.

  • Use the Expand button ↗ to enlarge the **Modify your image** window and hide the **Share with Slack** or **Share with Email** panel. Use the Collapse button ↘ to revert to the original view.

2. To add text, an arrow, or a freehand line to your image, follow these steps:

   a) Go to the toolbar ⊞✐✎◻◻◻◻◻ of the **Modify your image (optional)** pane and click one of these icons:

      - The Textbox icon ⊤
      - The Arrow icon ✐
      - The Pen icon ✎

   b) Select a color.

   c) Type your text or draw an arrow or line.

   d) Click **Done**.

3. To add a rectangle to your image, follow these steps:

   a) Go to the toolbar of the **Modify your image (optional)** pane and click the Rectangle icon ◻.

   b) Click the Border icon ◻, and then select the border color.

      Tip: If you previously selected a border color, the Border icon appears in that color.

   c) Click the Fill icon ■, and then select the fill color.

      Tip: If you previously selected a fill color, the Fill icon appears in that color.

   d) Hover over the image and click, drag, and then release to draw a rectangle.

   e) Click **Done**.

4. To edit any text, arrow, freehand line, or rectangle that you added, follow these steps:

   a) Ensure that you selected **Done** in the previous steps so that the Modify your image toolbar appears ⊞✐✎◻◻◻◻◻.

   b) Click on the image.

   c) To select an object, click on it.

      A rectangle with drag handles appears around the object.

      Tip: You can also press **Tab** successively to select each object that you created in the order that you created them. For more information, see "Keyboard commands to edit canvas content" on page 63.

   d) To move a selected object, move your cursor over the selected object so that the cursor changes to the Move cursor icon ✥ and then drag the object to the position you want.

   e) To resize a selected object, select and drag one of its handles.

   f) To delete one or more selected objects, click the Delete icon 🗑.

   g) To delete every object that you added to the image, from the Modify your image toolbar ⊞✐✎◻◻◻◻◻, click **Clear**.

5. To crop your image, follow these steps:

   a) Go to the toolbar of the **Modify your image (optional)** pane and click the Crop icon ⊐.

   b) On the image, click, drag, and then release to draw a highlighted rectangle over the area that you want to crop.

   c) Click **Done**.

6. If necessary, complete any remaining steps to send a message via email or Slack.

Results

Your message and edited Cognos Analytics content are shared with the Slack recipients that you selected.

Keyboard commands to edit canvas content

You can use keyboard shortcuts as an alternative way to invoke a command by pressing a combination of keyboard keys.

The following tables list keyboard shortcuts to edit an image on your canvas that you plan to share with your colleagues.

PC keyboard command	Macintosh keyboard command	Description
t	t	Activate the Textbox Tool
a	a	Activate the Arrow Tool
p	p	Activate the Pen Tool
r	r	Activate the Rectangle Tool
c	c	Activate the Crop Tool
q	q	Rotate object(s) clockwise 10 degrees
Shift + Q	Shift + Q	Rotate object(s) counter-clockwise 10 degrees
Delete/Backspace	Delete	Delete object(s)
[	[	If the active select object is a textbox, shrink the word-wrapped area horizontally by 5 px.
Shift + {	Shift + {	If the active select object is a textbox, shrink the word-wrapped area horizontally by 50 px.
]	]	If the active select object is a textbox, expand the word wrapped area horizontally by 5 px.
Shift + }	Shift + }	If the active select object is a textbox, expand the word wrapped area horizontally by 50 px.
Ctrl + z	Ctrl + z / Command + z	Undo Previous Action
Ctrl + y	Ctrl + y / Command + y /	Redo Previous Action
Escape	Escape	Close Entire Panel

PC keyboard command	Macintosh keyboard command	Description
Tab	Tab	Move the tool selection on the toolbar from Left to Right one at a time. If you press Tab on the final tool (for example, Clear/Done) the focus moves from the toolbar to the image.
Shift + Tab	Shift + Tab	Move the tool selection on the toolbar from Right to Left one at a

PC keyboard command	Macintosh keyboard command	Description
		time. Pressing Shift + Tab on the First tool moves the focus from the toolbar to the parent element.
Enter	Enter/Return	Activate the selected tool/color

PC keyboard command	Macintosh keyboard command	Description
Up Arrow	Up Arrow	Scroll the image up (If applicable)
Down Arrow	Down Arrow	Scroll the image down (If applicable)
Left Arrow	Left Arrow	Scroll the image left (If applicable)
Right Arrow	Right Arrow	Scroll the image right (If applicable)
Up Arrow	Up Arrow	Move the selected Object(s) up by 5 px.
Down Arrow	Down Arrow	Move the selected Object(s) down by 5 px.
Left Arrow	Left Arrow	Move the selected Object(s) left by 5 px.
Right Arrow	Right Arrow	Move the selected Object(s) right by 5 px.
Shift + Up Arrow	Shift + Up Arrow	Move the selected Object(s) up by 50 px.
Shift + Down Arrow	Shift + Down Arrow	Move the selected Object(s) down by 50 px.
Shift + Left Arrow	Shift + Left Arrow	Move the selected Object(s) left by 50 px.
Shift + Right Arrow	Shift + Right Arrow	Move the selected Object(s) right by 50 px.
Shift + Alt + Up Arrow	Alt + Up Arrow	Scale the selected Object(s) up by 5 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Down Arrow	Alt + Down Arrow	Scale the selected Object(s) down by 5 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Left Arrow	Alt + Left Arrow	Scale the selected Object(s) left by 5 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Right Arrow	Alt + Right Arrow	Scale the selected Object(s) right by 5 px. Bottom Right Corner is selected for scaling.

PC keyboard command	Macintosh keyboard command	Description
Shift + Alt + Up Arrow	Shift + Alt + Up Arrow	Scale the selected Object(s) up by 50 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Down Arrow	Shift + Alt + Down Arrow	Scale the selected Object(s) down by 50 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Left Arrow	Shift + Alt + Left Arrow	Scale the selected Object(s) left by 50 px. Bottom Right Corner is selected for scaling.
Shift + Alt + Right Arrow	Shift + Alt + Right Arrow	Scale the selected Object(s) right by 50 px. Bottom Right Corner is selected for scaling.
Tab	Tab	Press successively to select each object that you created in the order that you created them. If the final object is already selected, hitting Tab will move focus from the image to the Share Panel.
Shift + Tab	Shift + Tab	Press successively to select each object that you created in the order that you created them. If the first object is already selected, hitting Shift + Tab will move the focus from the image to the toolbar.
Enter	Enter/Return	Enter Textbox Editing Mode if the active select object is a textbox.
Escape	Escape	Deselect any active object. If the selected object is a textbox and is currently in Textbox Editing Mode, it exits Textbox Editing Mode.
Escape	Escape	Deselect the active object and stop drawing. If the active select object is a textbox, exit Textbox Editing Mode
Enter	Enter/Return	Begin drawing an object with the virtual cursor by simulating a mouse down event.
Enter	Enter/Return	End drawing an object with the virtual cursor by simulating a mouse
Up Arrow	Up Arrow	Move the Virtual Cursor up by 5 px.
Down Arrow	Down Arrow	Move the Virtual Cursor down by 5 px.

PC keyboard command	Macintosh keyboard command	Description
Left Arrow	Left Arrow	Move the Virtual Cursor left by 5 px.
Right Arrow	Right Arrow	Move the Virtual Cursor right by 5 px.
Shift + Up Arrow	Shift + Up Arrow	Move the Virtual Cursor up by 50 px.
Shift + Down Arrow	Shift + Down Arrow	Move the Virtual Cursor down by 50 px.
Shift + Left Arrow	Shift + Left Arrow	Move the Virtual Cursor left by 50 px.
Shift + Right Arrow	Shift + Right Arrow	Move the Virtual Cursor right by 50 px.

Exporting dashboard content to PDF

You can export your dashboard content to a PDF that you can print or share electronically.

About this task

When you export a PDF from the **Share** panel, the same process is used to create the PDF as when you click the more icon in an open dashboard.

For tips on preparing your content for export and to understand browser differences, see *Exporting a dashboard to PDF*.

Procedure

1. Open your Cognos Analytics dashboard and navigate to the view that you want to send to a co-worker.
2. Click the **Share** icon in the application bar.

   Tip: Although the **Share** icon also appears when you click the More icon in a content folder or on the **Welcome** page, you are limited to sharing links or embedded html. You cannot save the image as a PDF because the content does not appear in your window.
3. Click the **Export** tab.
4. Select the settings you want from the **Page size** and **Orientation** menus.
5. To apply filters, select the **Include filters** check box.
6. Click **Export**.

   The print window for the browser opens.
7. You can now save your PDF. For browser-specific details, see *Exporting a dashboard to PDF*.

What to do next

You can view the PDF or send it by email. If your administrator has configured a collaboration platform, such as Slack, you can drag the exported PDF file from your desktop into the Message box of a Slack channel or direct message.

Sharing assets from the Team content folder

You can share with your colleagues report outputs or dashboards that are located in the **Team content** folder.

Sharing assets from Team content via email

You can share Cognos Analytics report outputs or dashboards in the **Team content** folder by ✉ **Email**.

Before you begin

Your administrator must configure a mail server before you can use this feature.

About this task

Cognos Analytics allows you to select ⤴ **Share** in an asset's context menu from several access points:

- the **Team content** 👤 folder

- the **Home** 🏠 page, in the list of recently opened assets

- the **Search results** 🔍 pane

- the **Recent** 🕐 pane

Note: The following task describes accessing the context menu from the **Team content** folder. However, you can use any of the access points listed above.

Procedure

1. Save your dashboard or report output in the **Team content** folder.

   Tip: Other users are not authorized to open content in your **My content** folder.

2. Navigate to the saved asset in the **Team content** folder.

3. Click the More icon ⋯ for the asset and then, in the context menu, click ⤴ **Share**.

   Tip: A different **Share** icon ⤴ appears in the application bar at the top of your window when you are viewing content on your canvas:

   - If you are editing a new report or dashboard on your canvas and you click the **Share** icon ⤴ in the application bar, the **Share** panel only allows you to share the content from your current view.

     Previously saved report output cannot be shared by clicking the **Share** icon ⤴ in the application bar.

   - If you are viewing a saved report output PDF and you click the **Share** icon ⤴ in the application bar, the **Share** panel only allows you to share the saved PDF version as a link or an attachment.

4. In the **Share** panel, click the **Send** tab.

   Tip: If the **Send** tab does not appear, the administrator did not configure a mail server and did not configure a collaboration platform.

5. Click **Email**.

   Tip: If **Email** does not appear as a platform, your administrator did not enable content sharing by email.

   The **Share with email** panel appears.

6. Search for a recipient name, group, role, distribution list, or contact and then click **Search directory**. Repeat this step as necessary.

   Tips:
   - To add an external email address, enter the full address and then press Enter.
   - If you start typing someone's name that you emailed recently, the full name quickly appears and you can select it.
   - You can narrow the search results and speed up retrieval time by typing more characters in the recipient fields.
   - Search results appear for all namespaces that you are logged into. You may need to scroll to see results for a different namespace.
   - You can also browse for a recipient, by clicking **Directory** > *namespace*.

     To quickly find an entry:

     – Type text in the 🔍 **Find** field.

       You can click the Search Method icon ⚬— to find entries that either contain, start with, or are an exact match with the text that you type.

     – Click the filter 🔽 icon to narrow the view of entries.
7. Keep the default subject or enter a new one.
8. Enter the message that you want to send.

   Tip: To format your message, use the **Styles** and **Format** buttons.
9. Select **Include link** if you want your recipient to click a link to your content.

   Tip: Include link appears only if your content is located in the **Team content** folder. Other users cannot link to content located in **My content**.
10. If report output exists in a valid attachment format, you can attach one or more outputs to your email.

    Tip: For more information, see "Valid report output formats for email attachments" on page 68.

    a) Select **Attach report output**.
    b) Click **Add**.

       The **Pick report output** panel appears. Each output option appears only if it already exists as a saved report output. However, HTML format cannot be attached to an email.
    c) Select a report version.
    d) Select a burst key, if the field appears in the panel.
    e) Select a format.
    f) Select a language.
    g) Click **Add**.
    h) If there are additional version outputs that you want to attach, repeat steps "10.b" on page 68 to "10.g" on page 68.
    i) Click **Done**.
11. Click **Send**.

Results
Your message is sent to your selected recipients via email.

Valid report output formats for email attachments
Most formats of saved report outputs can be attached to an email that you send to your colleagues.

You can attach report output versions that were saved in the following formats:

- Excel
- Excel Data
- PDF
- CSV
- XML

Note: A report output saved in HTML format cannot be attached to an email. Although HTML output can be viewed in Cognos Analytics, it is not compatible as an email attachment.

Sharing assets from Team content via Slack

In Cognos Analytics, you can send Cognos Analytics report outputs or dashboards in the **Team content** folder by ![Slack icon] **Slack**.

For more information, see the Blog post Increased Collaboration with Slack Integration in IBM Cognos Analytics 11.1!

Before you begin
Your administrator must configure a collaboration platform before you can use this feature.

About this task

Cognos Analytics allows you to select ![share icon] **Share** in an asset's context menu from several access points:

- the **Team content** ![folder icon] folder

- the **Home** ![home icon] page, in the list of recently opened assets

- the **Search results** ![search icon] pane

- the **Recent** ![clock icon] pane

Note: The following task describes accessing the context menu from the **Team content** folder. However, you can use any of the access points listed above.

Procedure

1. Save your Cognos Analytics dashboard or report output in the **Team content** folder.

   **Tip:** Other users are not authorized to open content in your **My content** folder.

2. Navigate to the saved asset in the **Team content** folder.

3. Click the More icon ![...] for the asset and then, in the context menu, click ![share icon] **Share**.

   Tip: A different **Share** icon ![share icon] appears in the application bar at the top of your window when you are viewing content on your canvas:

   - If you are editing a new report or dashboard on your canvas and you click the **Share** icon ![share icon] in the application bar, the **Share** panel only allows you to share the content from your current view.

     Previously saved report output cannot be shared by clicking the **Share** icon ![share icon] in the application bar.

   - If you are viewing a saved report output PDF and you click the **Share** icon ![share icon] in the application bar, the **Share** panel only allows you to share the saved PDF version as a link or an attachment.

4. In the **Share** panel, click the **Send** tab.

   Tip: If the **Send** tab does not appear, the administrator did not configure a collaboration platform.

5. Click *Slack_platform_name.*

   Tip: If a **Slack** platform appears grayed out, your administrator has disabled the platform. If you are not part of a slack workspace, you can join it through the pop-up window and then click on the workspace again in Cognos Analytics to continue sharing your content.

   The **Share with Slack:** *platform_name* panel appears.

6. Enter a channel or recipient name.

   Tip: Start typing either a Slack channel name (starting with the hashtag symbol (#)) or a Slack user name if you want to send a Direct Message in Slack. As you type, the list of possible choices is filtered, until you can select the one you want.

7. Enter the message that you want to send.

   Tip: You must include some text in your message.

8. Select **Include link** if you want your recipient to click a link to your content.

   Tip: Include link appears only if your content is located in the **Team content** folder. Other users cannot link to content located in **My content**.

9. Click **Send**.

Results
Your message is sent to your selected recipients via Slack.

Linking to saved content

In Cognos Analytics, you can create a URL for any view in your dashboard or report. You can then send the URL by email or embed the URL in a web page or another dashboard or report.

You can share content objects, such as reports and dashboards, with a URL that opens the content object directly, instead of having to browse to the content object from the Cognos Analytics welcome screen. You can also embed Cognos Analytics content objects (except for data modules) in customized web pages. An embedded content object does not display the application or navigation bars.

Procedure

1. Save your Cognos Analytics dashboard or report output in the **Team content** folder.

   Tip: Other users are not authorized to open content in your **My content** folder.

2. Navigate to the view that you want to send to a co-worker.

3. Click the More icon $^{\cdots}$ for the asset and then, in the context menu, click ⧉ **Share**.

   Tip: A different **Share** icon ⧉ appears in the application bar at the top of your window if you are viewing content on your canvas. However, if you click that icon, the **Share** panel only allows you to share the content from your current view, not previously saved output.

4. In the **Share** panel, click the **Link** tab.

   Tip: You can modify the URL to perform other actions, such as opening a report for editing instead or running the report, or changing the output format of the report. For more information, see *Creating custom URLs to display and run Cognos Analytics content* in *IBM Cognos Analytics Getting Started User Guide*.

5. If you want to send the link to a co-worker by email, do the following:

   a) In the **Link** section, click the Copy icon ⬛.

      The URL is copied to your clipboard.

   b) Paste the URL into your email and send the email.

6. If you want to embed the html code for your view in a web page, go to the **Embed code:** section, and follow these steps:

    a) If you want to change the height and width of the iframe that will contain the code, adjust the values in the **Width** and **Height** fields.

    b) click the Copy icon ⌐□.

    The URL is copied to your clipboard.

    c) Paste the URL into the html text of your web page.

Authentication sample with embedded content

The embedded content sample shows how to use the IBM Cognos Analytics REST API to sign in a user and then display embedded content.

Procedure

1. Copy the embedded_content folder from the *<installation_location>*\samples folder to the *<installation_location>*\webcontent folder.

2. Open the \webcontent\embedded_content\preLoginSample.html file in a text editor, and locate the <select> element:

```
<select size="1" name="namespace">
        <option value="CognosEx">CognosEx (Example)</option>
        <option value="LDAP">LDAP (Example)</option>
</select>
```

3. For any of the configured namespaces that you want to see as a selection in the login page, define the <option> element within the <select> element, using the following syntax:

```
<option value="namespace_ID">namespace_name</option>
```

The *namespace_ID* corresponds to the **Namespace ID** property, as defined for the namespace in Cognos Configuration, under **Security** > **Authentication**. The *namespace_name* can be any word; however, the name defined in Cognos Configuration is preferred.

4. Open the \webcontent\embedded_content\iFrameSample.html file, and replace the iFrame objects with **Embed** iFrame objects from your Cognos Analytics installation.

5. In a web browser, type http://*<server_name>*:*<port>*/embedded_content/ preLoginSample.html

Results

A sign-in web page is displayed. After you sign in, the embedded content objects are shown.

Creating custom URLs to display and run Cognos Analytics content

You can create URLs that open or run IBM Cognos Analytics content objects, such as reports, dashboards, stories, and data modules. This feature extends the **Share** > **Link** command that creates a URL to display Cognos Analytics content objects to provide more control over the actions that are taken when the content object is displayed or run.

When you link to saved content, you create a URL that opens or runs Cognos Analytics content objects. You can create these URLs if you require more control over the actions invoked by them.

The following report types are supported in custom URLs: standard reports, report views, active reports, data sets, Query Studio reports, Analysis Studio reports, and their saved outputs.

If the content object is a report that has saved output, the saved output may be displayed, depending on the chosen URL parameters. Otherwise, the content object is run. If the content object is saved output, it is displayed. An error message is displayed if the saved output has been deleted.

Syntax

The syntax of the custom URLs takes one of the following two forms.

- http://*<servername>*:*<port>*/bi/?pathRef=*<path>*&*<option1>*=*<value1>*&*<option2>*=*<value2>*...
- http://*<servername>*:*<port>*/bi/?objRef=*<id>*&*<option1>*=*<value1>*&*<option2>*=*<value2>*...

pathRef or **objRef** identify the content object to use.

pathRef
Specifies the location of the object. This value does not change if the version of Cognos Analytics is changed or if the object is exported or imported in a deployment.

The easiest way to determine the value of **pathRef** is to create a URL by using the **Share** command. This URL contains the value of **pathRef**.

objRef
Specifies the id of the object. This value does not change if the content object is moved to a different location in **My content** or **Team content**.

The value of **objRef** is the **ID** value in the properties pane of the object.

perspective
Specifies which perspective to use: classicViewer or authoring. This parameter should normally not be specified, as the system will determine it based on properties of the object referenced by the URL.

A number of optional parameters can be appended to the URL. The following two options can be used in any perspective:

ui_appbar
Specifies whether to display the Application bar (true) or not (false). The default value is true.

ui_navbar
Specifies whether to display the Navigation bar (true) or not (false). The default value is true.

The following options can be used if the content object is a report.

action
Specifies whether to view saved output, run a report, or author an object. The following values are supported: viewOutput, run, edit. The default value is determined by the object's properties. When viewOutput is specified and there is no saved output, the object is run.

a11y
When running a report, specifies whether to include accessibility features (true) or not (false). The default value is false.

bidi
When running a report, specifies whether to enable bidirectional support (true) or not (false). The default value is false.

contentLocale `11.1.5`
Specify the locale in which the report output is created when running or which locale to view when the report output was saved using multiple locales. The default is determined from the user's preferences. Use an ISO country code for the value. For example, for German, specify contentLocale=de.

For this parameter to work, you must have a multilingual reporting environment. For more information, see "Setting up a multilingual reporting environment" in the *IBM Cognos Analytics Reporting User Guide*.

format
When running a report, specifies the output format. When viewing saved output, specifies which of the available formats to view.

The possible values are: HTML, PDF, spreadsheetML, xlsxData, CSV and XML. layoutDataXML, XLWA, rawXML, XHTML, singleXLS, and HTMLFragment. The default value is determined from the object's properties or the user's preferences.

productLocale

Specify the product locale to use. The default is determined from the user's preferences.

prompt

When running a report, specifies whether to show the prompt page (true) or not (false). The default value is false.

p_*<prompt_name>*

When running a report, specifies the value to use for the parameter named *<prompt_name>*.

promptParameters

When running a report, specifies prompt parameters as a JavaScript Object Notation (JSON) object. You can pass more complex parameter values to use when you run a report. For more information, see promptParameters option syntax.

- The easiest way to create a custom URL is to use the **Share** command for the content object that you want to create a custom URL for, and then to modify the options in this URL.

- Custom URLs can be long and your Cognos Analytics server environment might impose a length limit on the query portion of the URL You can work around this limitation by using the URL fragment identifier (#) in the URL. Here are some examples.

  – http://*<servername>*:*<port>*/bi/#pathRef=*<path>*&*<option1>*=*<value1>*&*<option2>*=*<value2>*...

  – http://*<servername>*:*<port>*/bi/?pathRef=*<path>*&*<option1>*=*<value1>*#*<option2>*=*<value2>*...

- If you use a custom URL in an HTML item in a report, replace instances of & with &.

Note: You can either specify a URL or use the HTTP POST method to send the options to the Cognos Analytics server. However, you must specify all parameters using the same method: either URL or HTTP POST.

Example

The following example uses the HTTP POST method to specify a customized URL.

```
<html>
<body>
<div class="acordion">
   <div class="submit">
      <form method="POST" id="cognosPost" accept-charset="UTF-8"
         action="http://cognos_analytics_IP_address:9300/bi/">
         <input type="hidden" name="pathRef" value=".public_folders/folder1/report1"
            style="display: none">
         <input type="hidden" name="promptParameters" id="promptParameters"
            value='{"name":"p_Line","value":{"use":"Camping Equipment"}}'
            style="display: none">
         <input type="hidden" name="format" value="HTML" style="display: none">
         <input type="hidden" name="Download" value="false" style="display: none">
         <input type="submit" name="btn" value="Run report with Camping Equipment">
      </form>
   </div>
</div>
</body>
</html>
```

promptParameters option syntax

You can use the **promptParameters** option to pass complex parameter values for use when you run a report. The parameter values are contained in a JavaScript Object Notation (JSON) object.

Syntax

The syntax of the **promptParameters** option is promptParameters=[{*<parameter_1>*}, {*<parameter_2>*,...]. The syntax of each parameter value depends on the type of parameter value and are described as follows.

Specific values

```
{
    "name":"<parameter_name>",
    "value":[
        {"use":"<use_value1>","display":"<display_value_1>"},
        {"use":"<use_value2>"},
        ...
    ]
}
```

<parameter_name> is the name of the parameter, *<use_value1>* is the use value, and *<display_value_1>* is the display value. The display value is optional.

Bounded range

```
{
    "name":"<parameter_name>",
    "value":[
        {
        "boundRange":{
            "start": {"use":"<use_start_value>", "display":"<display_start_value>"},
            "end": {"use":"<use_end_value>"}
        }}
    ]
}
```

<parameter_name> is the name of the parameter, *<use_start_value>* is the lower use value, *<display_start_value>* is the lower display value, and *<use_end_value>* is the upper use value. The display value is optional.

Unbounded start range

```
{
    "name":"<parameter_name>",
    "value":[
        {
        "unboundedStartRange": {
        "end": {"use":"<use_end_value>", "display":"<display_end_value>}
    }
}
```

<parameter_name> is the name of the parameter, *<use_end_value>* is the upper use value, *<display_end_value>* is the upper display value. The display value is optional.

Unbounded end range

```
{
    "name":"<parameter_name>",
    "value":[
        {
        "unboundedEndRange": {
        "start": {"use":"<use_start_value>", "display":"<display_start_value>}
    }
}
```

<parameter_name> is the name of the parameter, *<use_start_value>* is the lower use value, *<display_start_value>* is the lower display value. The display value is optional.

Creating shortcuts

You can create shortcuts for entries, such as dashboards, explorations, reports, and folders. The shortcut context menu provides the same options as the target context menu. For example, the **Run as option** is available from both the report and its shortcut context menus.

Procedure

1. In **Team content**, **My content**, or **Recent**, from the entry context menu, click **Create shortcut**.
2. Find a location for the shortcut, and click **Create shortcut**.

Creating URLs to other sites

A URL is a standard way of identifying the location of any external file or website. Create URLs to keep the files and websites you use most frequently at your fingertips. Clicking a URL opens the file or website in the browser.

About this task

The URL must contain a valid server name that is included in the valid domains list, as specified by your administrator. Otherwise, you cannot create the URL.

Administrators maintain the list of valid domains. For more information, see the *IBM Cognos Analytics Installation and Configuration Guide*.

Procedure

1. Click **Team content** or **My content**, and click the **New** ➕ icon.
2. Click **URL** 🔗.
3. In the **Name** box, type the name for your new URL.
4. If you want, specify the **Description** and **Screen tip**.
5. In the **URL** box, type the URL location.

   If the URL points to a website address, the protocol must be included. For example, to create a URL for the IBM website, type `http://www.ibm.com`

   The URL must use a valid domain, as specified by your administrator. To view a list of acceptable domains, click **View acceptable domains**.
6. Click **OK**.

Hiding entries

To prevent unnecessary use of IBM Cognos Analytics items, such as reports, packages, folders, jobs, or data servers, you have the option of hiding them. This is especially important for drill-through reports that can waste system resources when they are run unnecessarily.

To hide an entry, open its context menu and click **Properties**. On the **General** tab, open the **Advanced** section, and select the **Hide this entry** check box.

To show hidden entries in your content lists, click your user name 👤 icon in the application bar, and then click **My preferences**. On the **General** tab, select the **Show hidden entries** check box.

Hidden entries are visible, but faded in the following parts of the user interface:

- Search results.
- Properties panel, **Permissions** tab.
- **Personal** tabs.
- Job steps that refer to hidden entries already in a job.
- Agent tasks that refer to hidden entries already in an agent.
- Details in a report run history.

The following rules apply to hidden entries:

- A hidden report is accessible as a drill-through target. Drill-through targets include parameter values to avoid resource-intensive query operations. However, users still require appropriate permissions to use this target report in a drill-through activity.
- A hidden drill-through definition is not displayed in the **Go To** page if the user interface does not show hidden entries.

- A visible shortcut can point to a hidden entry. If the shortcut points to a hidden folder, any hidden entries in the folder are not visible.

Setting properties for entries

You can control the way entries appear and behave in IBM Cognos Analytics by modifying their properties.

You can view and set general and advanced properties for reports, folders, dashboards, stories, uploaded files, data modules, and other entries. When you open the properties panel, you see the **General** tab and the **Permissions** tab for all entries, and the tabs that are appropriate for the entry you're viewing, such as **Report** and **Schedule** for reports.

To open the properties panel for an entry, from its context menu ⋯, click **Properties**. You can also click the properties icon ⊶ in the application bar.

Tip: To specify **Team content** properties, click this folder, and in the slide-out panel that opens, click the properties icon ⊶ in the toolbar.

Chapter 10. Managing your schedules and subscriptions

You can schedule entries to run at a time that is convenient for you or when demands on the system are low. Or you may want to run them at a regular weekly or monthly interval. Similarly, you can subscribe to reports that were made public by other people.

To use scheduling, you must have permissions for the **Scheduling** capability. For more information, see the *IBM Cognos Analytics Managing Guide*.

For information about creating schedules or subscriptions, see "Scheduling an entry" on page 77 or "Subscribing to reports" on page 31.

Scheduling an entry

You schedule an entry, such as a report, report view, or a notebook, to run it later or at a recurring date and time.

About this task

Only one schedule can be associated with each entry. If you require multiple schedules for a report, you can create report views, and then create a schedule for each view.

You can schedule entries individually, or use jobs to schedule multiple entries at once. Jobs have their own schedules independent from the individual entries schedules. For more information, see "Using jobs to schedule multiple entries" on page 79.

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 for the parent report. You also need the required access permissions for any data sources that the entry relies on.

The scheduling options that are available to you depend on your permissions for the **Scheduling** capability.

For more information, see the *IBM Cognos Analytics Managing Guide*.

Procedure

1. Click the entry context menu ⬚, and then click **Properties**.
2. In the **Properties** pane, click the **Schedule** tab, and then click **New**.
3. In the **Create schedule** pane, specify the schedule options.
4. 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.

What to do next

After you create a schedule, the entry or job runs at the time and date specified. You can then view the schedules and manage them. For more information, see "My schedules and subscriptions" on page 81.

If you no longer need a schedule, you can delete it. You can also disable schedules without losing any of the scheduling details. The schedules can be enabled later.

Differences between a schedule and a subscription

In IBM Cognos Analytics, you can create and maintain both schedules and subscriptions. Although they share some similar characteristics, there are also key differences.

The following table shows the main differences between schedules and subscriptions.

Schedule	Subscription
Only the report owner can create the schedule.	Many people can create a subscription from the same report.
The scheduler must have Read, Write, and Execute permissions for the report.	A subscriber requires only Read and Execute permissions for the report. If you have an Analytics Viewer license, you can subscribe to reports, but not schedule them. For more information, see "License roles" in *Managing IBM Cognos Analytics*.
There can only be one schedule per report.	There can be up to 32 subscriptions for the same report.
Created by tapping the More button ⋯ for the report's list entry.	Created by running a report and, in view mode, tapping the More button ⋯ in the application bar.
Anyone with read access can view the schedule.	Only the subscriber can view their subscription.
The owner controls the maximum number of saved report versions.	Only the most recent saved report output is available.
You can specify that an email be sent to many people.	If you specify email delivery, it can be sent only to you.
The report can be run daily, weekly, monthly, yearly, or in response to a trigger that is set by the administrator, such as a database refresh.	The report can be run daily or weekly.

Deleting a subscription

You can delete one or more subscriptions that you created.

Before you begin

After you subscribe to a report, you can view a list of your schedules and subscriptions. If you want to delete one of your subscriptions, follow the steps below.

Procedure

1. Click your user name, then click **My preferences**.
2. Select the **Show hidden entries** check box.
3. Click **My content** and then click the **Subscriptions** folder.

   Tip: The **Subscriptions** folder is gray, as it is a hidden folder that is now enabled to be shown.

   Your subscriptions appear as a list of report views 🗎.

4. Click the More button ⋯ next to the subscription that you want to delete.
5. Click **Delete** 🗑.

Results

The subscription is removed from the **My schedules and subscriptions** list.

Using jobs to schedule multiple entries

You can set the same schedule for multiple entries by creating a job. A job identifies a collection of reports, report views, and other jobs that are scheduled together and share the same schedule settings. When a scheduled job runs, all the entries in the job run.

If a job item is unavailable, you can select a different link by clicking **Link to an entry**.

Jobs contain steps, which are references to individual reports, jobs, and report views. You can specify whether to run the steps all at once or in sequence.

- When steps are run all at once, all the steps are submitted at the same time. The job is successful when all the steps run successfully. If a step fails, the other steps in the job are unaffected and still run, but the job has a **Failed** status.
- When the steps are run in sequence, you can specify the order in which the steps run. A step is submitted only after the preceding step runs successfully. You can choose to have the job stop or have the other steps continue if a step fails.

You can schedule a job to run at a specific time, on a recurring basis, or based on a trigger, such as a database refresh or an email. For more information about trigger-based entry scheduling, see the *Administration and Security Guide*.

The individual reports, jobs, and report views in steps can also have individual schedules. Run options for individual step entries override run options set for the job. You can set run options for the job that serve as the default for step entries that do not have their own run options.

You can run reports to produce outputs based on the options that you define, such as format, language, and accessibility.

Permissions required to include an entry as part of a job vary depending on the type of entry. The permissions are the same as for scheduling an entry. For more information on scheduling an entry, see "Scheduling an entry" on page 77

Procedure

1. In the IBM Cognos Analytics portal, click **New** ✛ , and then click **Job**⬀.

   The **Steps** page appears.

2. Click the **Add job step** icon ⊕ .
3. Navigate to a report that you want to include in your job step, select it, and then click **Add job steps**.
4. If you want to change the default run options for the step, click the Edit options icon ▨, and then edit the format, delivery, prompts, languages, or accessibility options.
5. Repeat steps "2" on page 79 -"4" on page 79 to include additional steps in your job.
6. To remove a step, hover over the step and then click the Remove job step icon ⊖.
7. If you want to revert to the default run options for any future steps that you add, select **Change default step options**.
8. Under **Run order**, select whether the steps should **Run all at once** or **Run in sequence**.

   If you select **Run in sequence**, the steps are executed in the order they appear in the **Steps** list. If you want the job to continue to run even if one of the steps fails, select the **Continue on error** check box.

   Tip: To change the order of steps, click a step and drag it to the position that you want.

9. In the application bar, click the Save icon 🖫 .
10. Navigate to a folder in which to save your job, enter a job name in the **Save as** box, and then click **Save**.

    Run now and **Schedule** links appear in the **Run Options** section.

11. To run the report immediately, click **Run now** and click **Finish**. .
12. To schedule at a recurring time, follow these steps:

    a) Click **Schedule**.

    b) Click **New**.

    c) Enter the details of when you want the job to run.

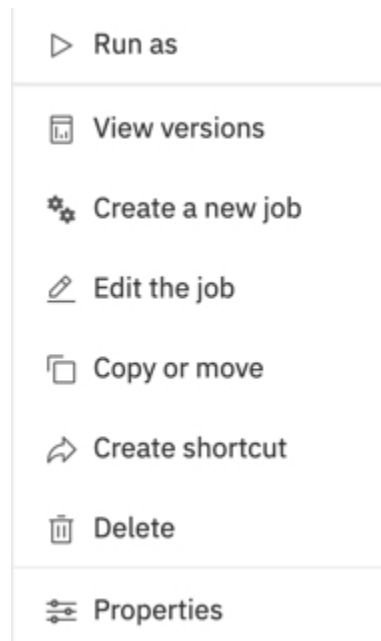   d) Click **Create**.

    > **Tip:** If this message appears: "Your credentials are required to complete this operation", click **Renew** and then enter your Cognos Analytics userid and password.

Results

A job, denoted by the job icon ⚙️, is created in the folder you selected and will run at the next scheduled time.

What to do next

You can select operations from the following menu after you click the More icon `***` for the job you created:

▷ Run as

🖬 View versions

✤ Create a new job

✎ Edit the job

🗐 Copy or move

↗ Create shortcut

🗑 Delete

🎚 Properties

Chapter 11. Personal settings

Use personal settings to customize your IBM Cognos Analytics experience. You can view and edit your personal and regional information, monitor the system activities, set up logging, and so on.

To view or change any of the personal settings, click the Personal menu icon ⚇ in the application bar.

To view notifications about the latest system activities that are applicable to you, click the notifications icon ▣ in the application bar.

Notifications

Notifications help you stay on top of important data. If you subscribe to a report or report view, you are notified every time your subscription is delivered. If you view saved output and you want to know when there's a new version of the report, you can subscribe to it.

The **Subscribe** option is available in view mode of a saved output version of a report when you tap the More button ⬚ in the application bar.

Tip: To ensure that you are in view mode, and not in edit mode, tap the Edit button ✎ until it is not selected.

If you request notification and then someone runs that report, you get a notification with a link to the updated version.

When you subscribe, if you choose the **Save the report on the system** delivery option, you receive a notification with a link to the new report version. To see all your notifications, tap the Notifications button ▣ in the application bar.

For more information, see "Subscribing to reports" on page 31.

My schedules and subscriptions

You can view all your scheduled activities and subscriptions on the **My schedules and subscriptions** panel.

About this task

You can view a list of your 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. 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.

You can see the **My schedules and subscriptions** option in the Personal menu ⚇ only if your administrator has granted you access to the Scheduling capability. For more information, see "Assigning capabilities based on license roles" in the *IBM Cognos Analytics Managing Guide*.

You can enable, disable, modify, or delete subscriptions, and view their saved outputs or archived versions. If you view the versions, you can also open the version details panel for information such as the run status, error messages, and run time.

For more information, see "Differences between a schedule and a subscription" on page 78.

Procedure

1. In the application bar, click your user name ⚇ icon , and then click **My schedules and subscriptions**.

2. To see both a listing and a graph of your schedules and subscriptions for a specific time frame, click the Type button ⌄ and then click **Upcoming**, **Past**, or **Current**.

3. To perform actions on a schedule or subscription in the list, click the More button ⋯ next to the list item, and then click an action.

My preferences

You can set up preferences for your IBM Cognos Analytics application.

To set your preferences, click your user name ⚇ icon in the application bar, and then click **My preferences**.

Language settings

You can select the language that you prefer for the IBM Cognos Analytics user interface. If your data and reports are available in multiple languages, you can also select the language that you prefer for the content. Make your selections in **My preferences**.

To change the language setting, close all your open items first, select the language in **My preferences**, close **My preferences**, and refresh your browser. The new language setting takes effect.

There is also support for bidirectional languages such as Hebrew, Arabic, Urdu, and Farsi. Report authors can control the display of native digits and the direction of text, crosstabs, and charts. For more information about support for bidirectional languages in reporting, see *Support for bidirectional languages* in the *Reporting User Guide*.

For general information about language settings, see the *IBM Cognos Analytics Administration and Security Guide*.

Turn UI hints on

When you first sign in to IBM Cognos Analytics, you can see hints that help you navigate the user interface. If you turn the hints off, but want to show them again, select the **Show hints** check box in **My preferences**.

Setting the default format for report runs

You can set the default run format for your IBM Cognos Analytics reports.

Procedure

1. Click your user name, then click **My preferences**.
2. Select the report format that you want.

Credentials

Your credentials are the user name and password that you use to sign in to IBM Cognos Analytics. Your credentials are associated with groups, roles, capabilities, and permissions that determine what parts of the user interface you can access and how you can interact with content.

If you change the password you use to sign in to Cognos Analytics, be sure to renew your credentials. Your saved credentials are used to run scheduled requests when you're not signed in, for example, overnight. Credentials are automatically renewed once a day, but a schedule run can fail, if it runs after you change your password, but before your credentials are automatically renewed.

If you are prompted for credentials when you connect to a data server, you can save your credentials so you aren't prompted for them every time that you use the same data server. Your saved data server credentials are listed in your advanced, personal preferences. You can view and delete listed entries.

To see what groups and roles and what capabilities are available with your sign-in credentials, see "Viewing your permissions for functions and features" on page 15.

FAQ: Security of your user credentials

This section answers common questions about how Cognos Analytics ensures that stored user credentials are kept secure.

Cognos Analytics stores user credentials for two reasons:

- When a report is scheduled, user credentials must be stored with the object. When the report is run, the user's credentials are authenticated to ensure that they have permission to run the report.
- When you access a secured database, the data source signon credentials are checked to ensure that you have permission to access the data.

When Cognos Analytics stores credentials, where are they stored?

Credentials are stored in the content store database. Database security can be applied to protect the contents of the content store tables. Only a dedicated account should have read permission on the content store. The credentials for accessing the content store are saved in a Cognos Analytics configuration file in encrypted form.

Are the credentials stored in clear text in the content store database?

Never. The credentials are encrypted with proven standard security algorithms. For obvious reasons, information about this encryption is kept confidential.

Are the credentials dynamically updated when a password changes in the underlying external authentication source?

Any scheduled job or report will automatically update the stored credentials in the schedule when it is run. This eliminates the need for the user having to renew their credentials.

Are the credentials accessible externally, as with Identity Management tools?

No. Cognos Analytics encrypts the credentials and stores them in the content store. This content can be accessed only by functions within Cognos Analytics. External sources cannot write credentials directly to the content store, either through the SDK or by any other method.

Renewing your credentials

Your credentials are renewed automatically once a day or at an interval that is determined by your administrator, but if you change your sign-in password, update your credentials manually.

About this task

It is important to manually renew your credentials when you change your sign-in password, if your credentials are used to run schedules.

Procedure

1. Click your **Personal menu**, then click **My preferences** > **Personal** > **Advanced**.
2. For **Credentials**, click **Renew**.

Managing your credentials

If you own an entry, you can authorize trusted users to use your credentials when those users lack sufficient access permissions to perform specific tasks. In your personal, advanced preferences, you can view, add to, or delete from the list of groups, users, and roles that are authorized to use your credentials.

About this task

If you want to add groups, users, or roles from multiple namespaces, you can use the type in method described as a choice in step 3.

Procedure

1. Click your **Personal menu** ⊝, then click **My preferences** > **Personal** > **Advanced**.
2. For **My credentials**, click **Manage**.
3. To add a group, user or role, click ＋, then do one of the following actions:
   - Select a Namespace from the Name list. You can then search by keyword or filter by type to find what you want faster.
   - To type the names of entries you want to add, click the **Options** icon ⌄ and select **Type in**. Type the names of groups, roles, or users by using the following format, where a semicolon (;) separates each entry:

     namespace/*group_name*;*namespace*/*role_name*;*namespace*/*user_name*;

     Here is an example:

     Cognos/Authors;LDAP/scarter;
4. Select the names that you want and click **Add**.

   Your selections are now listed in the **My credentials** slide-out panel.

Managing your data server credentials

You can view and delete your saved data server credentials in your personal, advanced preferences.

Procedure

1. Click your **Personal menu** ⊝, then click **My preferences** > **Personal** > **Advanced**.
2. For **Data server credentials**, click **Manage**.

Setting logging levels

In addition to the logging capabilities that exist on the IBM Cognos server, you can produce logs and error reports for your own workstation. This type of client-side logging is important for troubleshooting and can cover JavaScript anomalies that are not detectable from the server environment.

About this task

You can turn logging on or off as well as set the logging level. Under normal circumstances, logging is on, but the level is set to **Error**. In some circumstances, IBM customer support might direct you to increase the logging level. Set it to one of the following levels:

Error
Basic level of logging that tracks only major error messages that occur during processing on the client workstation.

Warning

    The next level of logging that includes all the information from the Error level of logging and includes warnings about situations that might not affect your system function.

Information

    This level of logging aggregates all previous levels of logging and includes more detail about the regular operation of the user interface. You might notice that performance at this level is slower.

Debug

    This level of logging contains the most information. Use it if you are testing your own extensions or when you are advised by a member of the software development team or customer support. You can expect that performance at this level is noticeably slower.

Logging levels are stored in the browser cache. If you clear the browser cache, logging levels return to the default setting.

Procedure

1. Click your **Personal menu** ⊙ in the application bar, and then click **My preferences**.
2. On the **Personal** tab, expand the **Advanced** section.
3. For **Logging**, click **Manage**.
4. Ensure that logging is on.
5. Set the **Logging level** to the level directed by the customer support representative.
6. To retrieve logs from the browser console, press the **F12** key on your keyboard or from the browser menu, click **Developer**, and then click **Web Console**.

   Tip: For the Firefox web browser, you can use an add-on, such as Firebug to make it easier to retrieve and save log files from the console.
7. After you are done troubleshooting, return to the **Logging** preferences window and ensure that logging is set back to **Error** to prevent logging from slowing down your system while you are working.

What to do next

For more information about troubleshooting your system, see the *IBM Cognos Analytics Troubleshooting Guide*.

Chapter 12. Integrating with other Cognos products

IBM Cognos Analytics integrates with supported versions of other IBM Cognos products so your analytics capabilities can grow with your needs.

To access the following applications, they must be installed, and IBM Cognos Analytics must be installed with the custom option which enables other applications. For information on opening companion applications, see "Opening companion apps" on page 89.

Cognos Planning - Analyst
> For supported versions, you can access published plan data in IBM Cognos Analytics by using the Generate Framework Manager Model wizard. For more information, see the *IBM Cognos Analyst User Guide*.

Cognos Planning - Contributor
> For supported versions, you can access unpublished (real-time) Contributor cubes in IBM Cognos Analytics by custom installing the IBM Cognos Analytics - Contributor Data Server component that is included with IBM Cognos Planning - Contributor.
>
> For supported versions, you can access published plan data in IBM Cognos Analytics by using the Generate Framework Manager Model administration extension in Contributor. For more information, see the *IBM Cognos Contributor Administration Guide*.

Cognos Finance
> You can access IBM Cognos Finance cubes that are secured against a Series 7 namespace by using the IBM Cognos Finance Network API Service. You can also export data and metadata from IBM Cognos Finance for use in Framework Manager.

Cognos Controller
> You can access IBM Cognos Analytics to create IBM Cognos Controller Standard Reports by using a predefined Framework Manager model that is created when IBM Cognos Controller is installed. You can also access published Controller data and structures in Framework Manager for custom reporting and analysis.

Cognos Transformer
> You can use IBM Cognos PowerCubes and Transformer models, that were generated by supported Transformer versions, directly in IBM Cognos Analytics. The cubes and models are upwards compatible and require no migration or upgrade tools. You can run reports and analyses in IBM Cognos Analytics against the IBM Cognos PowerCubes.

Cognos TM1®
> IBM Cognos TM1 integrates business planning, performance measurement and operational data to enable companies to optimize business effectiveness and customer interaction regardless of geography or structure. Cognos TM1 provides immediate visibility into data, accountability within a collaborative process, and a consistent view of information, allowing managers to quickly stabilize operational fluctuations and take advantage of new opportunities. For more information, see the *IBM Cognos TM1 User Guide*.

Cognos PowerPlay
> You use IBM® Cognos® PowerPlay® Studio to create and view reports that are based on PowerCube data sources. For more information, see the *IBM Cognos PowerPlay Studio User Guide*.

IBM Cognos Software Development Kit

The IBM Cognos Software Development Kit provides a platform-independent automation interface for working with IBM Cognos Analytics services and components.

Developers in your organization can use IBM Cognos Software Development Kit to create custom reports, manage deployment, and integrate security and portal functionality to suit your needs, locale, and existing software infrastructure. The Software Development Kit uses a collection of cross-platform web services, libraries, and programming interfaces.

You can choose to automate only a specific task, or you can program the entire process from modeling through to reporting, scheduling, and distribution.

The Software Development Kit is included in the Cognos Analytics installer package.

For more information, see the *IBM Cognos Software Development Kit Developer Guide*.

Functionality mapping from Cognos BI to Cognos Analytics

IBM Cognos Analytics is the next version of IBM Cognos Business Intelligence.

The following table describes where you can find BI functionality in Cognos Analytics. The companion applications are only available in the user interface if they are installed and if legacy applications are enabled in a custom installation of Cognos Analytics. Some, but not all of the companion applications, are installed separately.

Table 3. BI to Cognos Analytics functionality mapping

IBM Cognos Business Intelligence	IBM Cognos Analytics
Cognos Connection	Welcome portal
Cognos Viewer	The viewer is not named. Depending on the item you view, there is different functionality in the viewer.
Report Studio	Reporting: to create a new report, in the Welcome portal, click ✚, then click **Report**. For a report entry in a content list, if you click 🔲, then click **Edit**, the report opens in Reporting.
No equivalent, new in Cognos Analytics.	Data modeling: to create a new data module, in the Welcome portal, click the New ✚ icon, and then click **Data module**.
Cognos Administration	Managing: incorporates part of the administration functionality. Access from the **Welcome** portal. Link to the full Administration console from the **Manage** panel.
Workspace Advanced	Reporting: incorporates Workspace Advanced functionality. Page preview in Reporting is similar to Page preview in Workspace Advanced.
Drill-through definitions	Companion application: to access Drill-through, in the **Welcome** portal navigation bar, click **New** ✚, then **Other**. Drill-through definitions support Framework Manager packages, but not data modules.
Event Studio	Companion application: to access Event Studio, in the **Welcome** portal navigation bar, click **New** ✚, then **Other**.
My Inbox	Notifications: if you select Save to the system for subscriptions and report output versions, you go to **Notifications** in the **Welcome** portal, open the notice and click a link to the report version. Also, you can access My Inbox from your personal settings.
Analysis Studio	Companion application: to access, in the **Welcome** portal, click **New** ✚, then **Other**.
Query Studio	Companion application: to access, in the **Welcome** portal, click **New** ✚, then **Other**.

Table 3. BI to Cognos Analytics functionality mapping (continued)	
IBM Cognos Business Intelligence	**IBM Cognos Analytics**
Workspace	Dashboarding: incorporates Workspace functionality. However, for some additional functionality, you can access the Workspace companion application if it was installed. In the **Welcome** portal navigation bar, click **New** ✛ , then **Other**.
Framework Manager	Framework Manager

Move from quirks to standards mode HTML

Because of the move from quirks to standards mode HTML in much of the user interface, you might need to make minor changes to existing reports. You might also need to update your web browser settings.

Many IBM Cognos Analytics user interfaces now use standards mode HTML, including the Cognos Analytics portal, Cognos Analytics – Reporting, and HTML viewers and reports. Because reports have moved from quirks to standard HTML, there might be small differences in the look of your reports. These differences do not have an impact on the majority of reports that were created in previous Cognos versions. However, minor changes might be required in a small number of existing reports.

If you use the Microsoft Internet Explorer web browser after you upgrade to Cognos Analytics, you might need to change your browser settings. Previously, when Cognos 10.2.x was used with the Internet Explorer browser, you either had to enable the **Automatically recover from page layout errors with Compatibility Mode** option or add websites to the **Compatibility View Settings**. Because Cognos Analytics uses standards mode HTML, you must change settings that enabled compatibility mode to avoid problems with caching. To ease your transition to standards mode HTML, legacy components, such as IBM Cognos Query Studio and IBM Cognos Analysis Studio that still require it now use meta tags to automatically switch into compatibility mode.

For more information, see Cognos Analytics conversion to Standards Mode.

Opening companion apps

Companion applications might be accessible in the IBM Cognos Analytics user interface.

About this task

You can access the following applications if you have the required capabilities and if the applications are enabled during installation:

- Cognos Analysis Studio
- Cognos Query Studio
- Cognos Event Studio
- Cognos Workspace
- Drill-through definitions
- My Inbox
- My Watch Items
- Create new jobs

The following applications are separately installed. To see them, the custom installation option must be selected when IBM Cognos Analytics is installed, and you must have the appropriate capabilities:

- IBM Cognos PowerPlay
- IBM Cognos Planning

Procedure

1. To see My Inbox and My Watch Items, in the **Welcome** portal, click your **Personal menu** 👤.

2. To see all other companion applications, in the **Welcome** portal navigation bar, click ＋, then **Other**.
3. Click the companion application that you want.

Index

properties
    setting for Team content 76

Q

Query Studio 89
quick launch
    uploading files 10

R

read permissions 13
read_data() method 37
replacing data
    uploaded files 25
report versions
    delete saved output 30
    save versions 30
    saved outputs 30
    view archives 30
    view versions 30
report views 30
reports
    managing 29
    personalize 30
    scheduling 77

S

samples 11, 35
schedules 81
scheduling
    reports 77
search_data() method 41
security
    groups and roles 15
    permissions 13
select entries 10
set default report format 82
set policy permissions 13
shortcuts
    creating 74
sources
    data modules 17
    data sets 18
    packages 17
    uploaded files 23
subscribe to reports 31
subscriptions 31, 81

T

Team content
    setting properties 76
traverse
    permissions 13

U

uploaded files
    appending data 25
    notebooks 53
    quick launch 10

uploaded files *(continued)*
    replacing data 25
uploading files 25

V

visualizations
    copy 57
    paste 57

W

Workspace 89
write permissions 13
write_data() method 40