



# **Getting started with Data Warehouse**

## OnCommand Insight

NetApp  
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# Getting started with Data Warehouse

OnCommand Insight Data Warehouse enables you to configure options needed before generating reports that include your data. Data Warehouse contains many features; however, you need to use only a few of them to get started. To set up Data Warehouse, you use options in the Data Warehouse Portal.

## About this task

To set up OnCommand Insight Data Warehouse, a storage administrator should complete the following procedures:

- Accessing the Data Warehouse portal
- Connecting Data Warehouse to OnCommand Insight servers
- Building the database from history
- Setting up backup and restore processes

Additionally, a storage administrator might want to complete the following procedures.

- Accessing MySQL using the command line interface
- Scheduling daily builds
- Setting up multiple tenancy in reporting
- Troubleshooting setup issues
  - Why can't I see my annotations?
  - What should I do with failing historical build points?

If this is the first time you are using the Data Warehouse Portal, you must set up Data Warehouse before any information can appear on the Jobs page. You also need to repeat this setup process after resetting the Data Warehouse database.

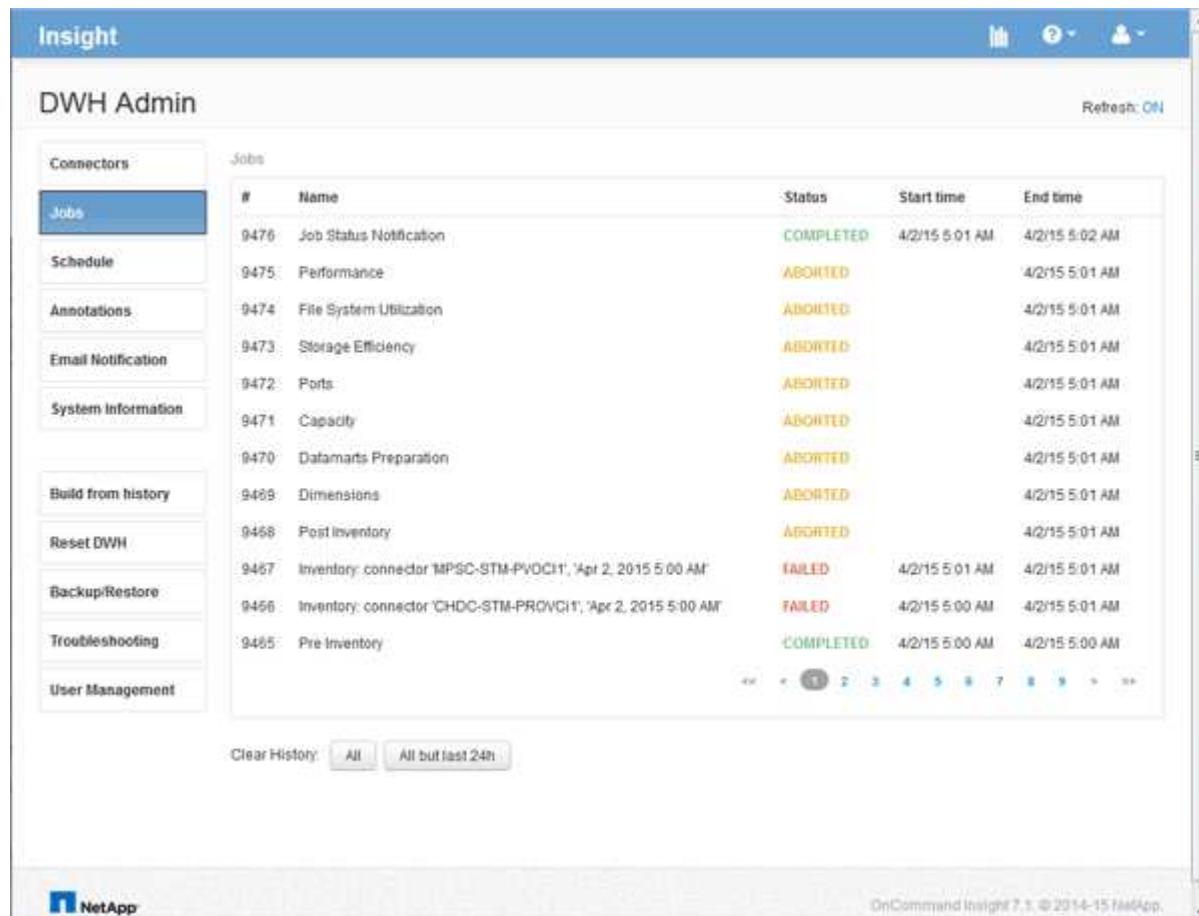
## Accessing the Data Warehouse portal

The OnCommand Insight Data Warehouse portal is a web-based user interface that you can use to update connector information, view job queues, schedule daily builds, select annotations, set up email notifications, view system information, build the database, reset Data Warehouse, back up and restore the database, troubleshoot issues, manage Data Warehouse and Reporting portal user accounts, and access documentation and schema diagrams.

### Steps

1. Log in to the Data Warehouse portal at `https://hostname/dwh`, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. Enter your user name and password.
3. Click **Login**.

The Data Warehouse portal opens:



The screenshot shows the 'DWH Admin' section of the OnCommand Insight interface. On the left, a sidebar lists various administrative categories: Connectors, Jobs, Schedule, Annotations, Email Notification, System Information, Build from history, Reset DWH, Backup/Restore, Troubleshooting, and User Management. The 'Jobs' category is currently selected, indicated by a blue background. The main content area displays a table of jobs with the following data:

#	Name	Status	Start time	End time
9476	Job Status Notification	COMPLETED	4/2/15 5:01 AM	4/2/15 5:02 AM
9475	Performance	ABORTED	4/2/15 5:01 AM	
9474	File System Utilization	ABORTED	4/2/15 5:01 AM	
9473	Storage Efficiency	ABORTED	4/2/15 5:01 AM	
9472	Ports	ABORTED	4/2/15 5:01 AM	
9471	Capacity	ABORTED	4/2/15 5:01 AM	
9470	Datamarts Preparation	ABORTED	4/2/15 5:01 AM	
9469	Dimensions	ABORTED	4/2/15 5:01 AM	
9468	Post Inventory	ABORTED	4/2/15 5:01 AM	
9467	Inventory: connector 'MPSC-STM-PVDCI1', 'Apr 2, 2015 5:00 AM'	FAILED	4/2/15 5:01 AM	4/2/15 5:01 AM
9466	Inventory: connector 'CHDC-STM-PROVCI1', 'Apr 2, 2015 5:00 AM'	FAILED	4/2/15 5:00 AM	4/2/15 5:01 AM
9465	Pre Inventory	COMPLETED	4/2/15 5:00 AM	4/2/15 5:00 AM

Below the table, there are buttons for 'Clear History' and two options: 'All' and 'All but last 24h'. The bottom right corner of the interface shows the NetApp logo and the text 'OnCommand Insight 7.1, © 2014-15 NetApp'.

## Managing Data Warehouse and Reporting user accounts

User accounts, user authentication, and user authorization for the OnCommand Insight reporting tools are defined and managed from the Data Warehouse (DWH). Based on these configurations, users and administrators gain access to some or all of the available OnCommand Insight reports.

Access to the User Management in the Data Warehouse requires an account with System Administrator privileges. This includes:

- Full administrative capabilities for the Data Warehouse
- Configuration and maintenance of all user accounts
- Read access to the database
- Capability to set up connectors in the ETL, schedule Data Warehouse jobs, reset the database, assign or change roles, and add and remove user accounts

## Accessing the Data Warehouse and Reporting portal

The Data Warehouse portal provides access to administration options. From the Data Warehouse portal, you can also access the Reporting portal.

## Steps

1. Log in as an administrator to the Data Warehouse portal at <https://hostname/dwh>, where hostname is the name of the system where OnCommand Insight Data Warehouse is installed.
2. On the Data Warehouse toolbar, click  to open the Reporting portal.

## Reporting user roles

Each user account is assigned a role with a set of permissions. The number of users is limited by the number of Reporting licenses attached to each role.

Each role can perform the following actions:

- **Recipient**

Views OnCommand Insight Reporting portal reports and sets personal preferences such as those for languages and time zones.



Recipients cannot create reports, run reports, schedule reports, export reports, nor perform administrative tasks.

- **Business Consumer**

Runs reports and performs all Recipient options.

- **Business Author**

Views scheduled reports, runs reports interactively, creates stories, in addition to performing all Business Consumer options.

- **Pro Author**

Creates reports, creates packages and data modules, in addition to performing all Business Author options.

- **Administrator**

Performs reporting administrative tasks such as the import and export of report definitions, configuration of reports, configuration of data sources, and the shutdown and restart of reporting tasks.

The following table shows the privileges and the maximum number of users allowed for each role:

Feature	Recipient	Business Consumer	Business Author	Pro Author	Admin
View reports in the Team Content tab	Yes	Yes	Yes	Yes	Yes
Run reports	No	Yes	Yes	Yes	Yes

Schedule reports	No	Yes	Yes	Yes	Yes
Upload external files	No	No	Yes	Yes	No
Create stories	No	No	Yes	Yes	No
Create reports	No	No	Yes	Yes	No
Create Packages and Data Modules	No	No	No	Yes	No
Perform administrative tasks	No	No	No	No	Yes
Number of users	Number of OnCommand Insight users	20	2	1	1

When you add a new Data Warehouse and Reporting user, if you exceed the limit in a role, the user is added as “deactivated,” and you need to deactivate or remove another user with that role to give a new user membership.



Report authoring capabilities require Insight Plan license. You can add additional Business Author and Pro Author users by purchasing the ARAP (Additional Report Authoring Package). Contact your OnCommand Insight representative for assistance.

These reporting user roles do not affect direct database access. These reporting user roles do not impact your ability to create SQL queries using the data marts.

## Adding a Reporting user

You must add a new user account for each person who requires access to the Reporting portal. Having a different user account for each person provides a way of controlling access rights, individual preferences, and accountability.

### Before you begin

Before adding a Reporting user, you must have allocated a unique user name, determined what password to use, and verified the correct user role or roles. These roles are specialized in the Reporting portal.

### Steps

1. Log in as an administrator to the Data Warehouse Portal at <https://hostname/dwh>, where hostname is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **User Management**.

3. In the **User Management** window, click **Add New User**.
4. Enter the following information for the new Reporting user:
  - **User name**

User name (alphanumeric, including a-z, A-Z, and 0-9) for the account
  - **E-mail Address**

Email address associated with the user account and required if the user subscribes to any reports
  - **Password**

Password to log in to OnCommand Insight with this user account, which is typically selected by the user and confirmed in the interface
  - **Insight role**

Roles available to the user with appropriate permissions

 The options for the OnCommand Insight role are shown only if OnCommand Insight is installed on the same machine as the reporting facilities, which is not typical.
  - **Reporting roles**

Reporting role for this user account (for example, Pro Author)

 The Administrator role is unique. You can add this role to any user.

5. Click **Add**.

## Managing user accounts

You can configure user accounts, user authentication, and user authorization from the Data Warehouse portal. Each user account is assigned a role with one of the following permission levels. The number of users is limited by the number of Reporting licenses attached to each role.

### Steps

1. Log in to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **User Management**.

Name	OnCommand Insight roles			Reporting roles							E-mail	Edit	Delete	Change password	Deactivate
	Guest	User	Administrator	Recipient	Business Consumer	Business Author	Pro Author	Administrator							
guest	X														
user	X	X													
admin	X	X	X					X	X						
oadmin	X	X	X												

LDAP Configuration   Add New User   Change DWH User password

The following table shows the privileges for each reporting role:

Feature	Recipient	Business Consumer	Business Author	Pro Author	Administrator
View reports (in Public Folder tab, My Folders)	Yes	Yes	Yes	Yes	Yes
Run reports	No	Yes	Yes	Yes	Yes
Schedule Reports	No	Yes	Yes	Yes	Yes
Create reports in Query Studio	No	No	Yes	Yes	No
Create reports in Workspace (Standard)	No	Yes	Yes	Yes	No
Create reports in Workspace (Advanced)	No	No	Yes	Yes	No
Create reports in Report Studio	No	No	No	Yes	No
Perform administrative tasks	No	No	No	No	Yes

### 3. Do one of the following:

- To edit an existing user, select the row for the user and click **Edit**.
- To change a user’s password, select the row for the user and click **Change password**.
- To delete a user, select the row for the user and click **Delete**

### 4. To activate or deactivate a user, select the row for the user and click **Activate** or **Deactivate**.

## Configuring LDAP for Reporting

From the Data Warehouse portal, the Administrator can configure LDAP usage for Data Warehouse and Reporting.

### Before you begin

You must log in to Insight as an Administrator to perform this task.

For all Secure Active Directory (i.e. LDAPS) users, you must use the AD server name exactly as it is defined in the certificate. You can not use IP address for secure AD login.



If you changed `server.keystore` and/or `server.trustore` passwords using `securityadmin`, restart the `sanscreen` service before importing the LDAP certificate.

### Steps

1. Log in to the Data Warehouse Portal at `https://hostname/dwh`, where `hostname` is the name of the system on which OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **User Management**.
3. Click **LDAP Configuration**.
4. Select **Enable LDAP** to start the LDAP user authentication and authorization process.
5. Make whatever changes are necessary to configure LDAP.

The majority of the fields contain default values. The default settings are valid for the Active Directory.

- **User principal name attribute**

Attribute that identifies each user in the LDAP server. Default is `userPrincipalName`, which is globally unique. OnCommand Insight attempts to match the contents of this attribute with the username that has been supplied above.

- **Role attribute**

LDAP attribute that identifies the user's fit within the specified group. Default is `memberOf`.

- **Mail attribute**

LDAP attribute that identifies the user's email address. Default is `mail`. This is useful if you want to subscribe to reports available from OnCommand Insight. Insight picks up the user's email address the first time each user logs in and does not look for it after that.



If the user's email address changes on the LDAP server, be sure to update it in Insight.

- **Distinguished name attribute**

LDAP attribute that identifies the user's distinguished name. default is `distinguishedName`.

- **Referral**

Indicates whether to follow the path to other domains if there are multiple domains in the enterprise. You must always use the default `follow` setting.

- **Timeout**

Length of time to wait for a response from the LDAP server before timing out, in milliseconds. default is 2,000, which is adequate in all cases and should not be modified.

- **LDAP servers**

This is the IP address or DNS name to identify the LDAP server. To identify a specific port, where `ldap-server-address` is the name of the LDAP server, you can use the following format:

```
ldap://ldap-server-address:port
```

To use the default port, you can use the following format:

```
ldap://ldap-server-address
```



When entering multiple LDAP servers in this field, separate entries with a comma, and ensure that the correct port number is used in each entry.

- + To import the LDAP certificates, click **Import Certificates** and automatically import or manually locate the certificate files.

- **Domain**

LDAP node where OnCommand Insight should start looking for the LDAP user. Typically this is the top-level domain for the organization. For example:

```
DC=<enterprise>,DC=com
```

- **Insight server admins group**

LDAP group for users with Insight Server Administrator privileges. Default is `insight.server.admins`.

- **Insight administrators group**

LDAP group for users with Insight Administrator privileges. Default is `insight.admins`.

- **Insight users group**

LDAP group for users with Insight User privileges. Default is `insight.users`.

- **Insight guests group**

LDAP group for users with Insight Guest privileges. Default is `insight.guests`.

- **Reporting administrators group**

LDAP group for users with Insight Reporting administrator privileges. Default is `insight.report.admins`.

- **Reporting pro authors group**

LDAP group for users with Insight Reporting pro authors privileges. Default is `insight.report.proauthors`.

- **Reporting business authors group**

LDAP group for users with Insight Reporting business authors privileges. Default is `insight.report.business.authors`.

- **Reporting business consumers group**

LDAP group for users with Insight Reporting business consumers privileges. Default is `insight.report.business.consumers`.

- **Reporting recipients group**

LDAP group for users with Insight Reporting recipient privileges. Default is `insight.report.recipients`.

6. Enter values in the **Directory lookup user** and **Directory lookup user password** fields if you made any changes.

If you do not enter the revised values in these fields, your changes are not saved.

7. Retype the directory lookup user password in the **Confirm directory lookup user password** field, and click **Validate Password** to validate the password on the server.
8. Click **Update** to save the changes. Click **Cancel** to remove changes.

## Connecting Data Warehouse to OnCommand Insight servers

Connectors establish connections from the OnCommand Insight Data Warehouse to the OnCommand Insight servers. You can connect Data Warehouse with one or more OnCommand Insight servers. You can add or remove connections to or from OnCommand Insight databases.

### About this task

Data Warehouse assigns a global unique ID to the connector that is used in conjunction with the connector name. After adding a connector, Data Warehouse queries the OnCommand Insight database for the OnCommand Insight site name and version.

You can choose to connect to a data source with or without SSL. Choosing the secure data source forces the connection to use SSL when communicating with the OnCommand Insight remote database.

Data Warehouse can provide a consolidated view of data from multiple OnCommand Insight installations. This consolidated database provides the following information:

- Globally Unique Identifiers

Each object is assigned a globally unique ID that is independent of the IDs used by individual sites, to avoid conflicting IDs and enable duplicate detection. These IDs are shared between all the data marts. This ID is the Globally Unique ID (GUID) in the `Comment` column of the `Inventory` data mart tables.

- No duplication

Entities that exist in multiple OnCommand Insight databases are registered only once in the consolidated database.

- Current record

The data in the consolidated database (Inventory data mart) is always the most up-to-date possible.

When you add or edit a connection, you can also test the connection. The test does the following:

- Verifies the host IP address, user name, and password and ensures that a connection can be established.

Invalid connections appear in red.

- Compares the OnCommand Insight version to the Data Warehouse version.  
If the versions are not compatible, an error message appears.
- Verifies that the OnCommand Insight database has not been changed or restored to a different database as seen by the last Data Warehouse processing. If there has been a change, an error message appears.

## Steps

1. Log in to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.

2. From the navigation pane on the left, click **Connectors**.

The Connectors table appears blank at first and shows connector information after you add a connector.

3. Click **New** to add a new connector.

4. Enter the following:

- **Encryption**

To enable Data Warehouse requests to be made using SSL encryption, select **Enabled**.

- **Name**

A connector name that will identify the connector on the Connectors view.

- **Host**

Host IP address

- **User name**

“inventory”



Using this user name and password, you can log in to the remote OnCommand Insight database and perform queries on the data.

- **Password**

“sanscreen”

5. To specify the port to use for TCP connections to the host, click **Advanced** and enter the TCP port number.

6. To specify the port (other than the default port) to use for HTTPS connections to the host, click **Advanced** and enter the port number.

7. Click **Test**.

Data Warehouse tests the connection.

8. Click **Save**.

If you enter multiple connections for multiple installations, Data Warehouse invokes independent build

processes, one for each database from which data should be extracted. Each such build process extracts data from an OnCommand Insight database and loads it into the consolidated database.

## Data Warehouse database build from history overview

You can build the Data Warehouse database using historical data in your OnCommand Insight server. Data Warehouse extracts data from the OnCommand Insight servers and builds the Data Warehouse data marts according to the build from history schedule.

This option does not require a special license and inventory data is included in the build. However, to build capacity information, the OnCommand Insight Plan and OnCommand Insight Perform licenses are required.

If any build (from history or current) has already been performed, the build cannot be done on dates before the last job. This means if you perform a current build, you cannot build from history. More specifically, if you performed builds from history that ended on Jan 1, 2012, you cannot perform any build on the year 2011.

If the history build does not include a day or two of any unsuccessful ETL processes, do not try building history for just these few days. Historical data is for longer periods and a day or two is not going to change trending significantly. If you do want to rebuild from history, rebuild the entire history.

The Build from History view displays all build jobs from all connectors. For example, the view might display an inventory job for every connector, a port capacity job for every build run, and an annotations job.

Before you configure the Build from History, the following must occur:

- Connectors must be configured.
- Annotations should be entered in OnCommand Insight and can be manually updated using the **Force Update of Annotations for DWH** option in the old OnCommand Insight Portal or will be automatically updated 15 minutes after they are set.

## Adding a job that builds a Data Warehouse database from history

You can build the Data Warehouse database using historical data that is kept in your OnCommand Insight server, which enables you to run projection reports.

### Before you begin

You must have updated annotations in the OnCommand Insight server and forced an update of annotation information for Data Warehouse.

### Steps

1. Log in to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **Build from History**.

#### Build From History

Target time	Start running	Status
3/13/15 12:00 AM	3/25/15 9:28 AM	COMPLETED
3/14/15 12:00 AM	3/25/15 9:34 AM	COMPLETED
3/15/15 12:00 AM	3/25/15 9:39 AM	COMPLETED
3/16/15 12:00 AM	3/25/15 9:45 AM	COMPLETED
3/17/15 12:00 AM	3/25/15 9:51 AM	COMPLETED
3/18/15 12:00 AM	3/25/15 9:57 AM	COMPLETED
3/19/15 12:00 AM	3/25/15 10:03 AM	COMPLETED
3/20/15 12:00 AM	3/25/15 10:09 AM	COMPLETED
3/21/15 12:00 AM	3/25/15 10:16 AM	COMPLETED
3/22/15 12:00 AM	3/25/15 10:23 AM	COMPLETED
3/23/15 12:00 AM	3/25/15 10:30 AM	COMPLETED
3/24/15 12:00 AM	3/25/15 10:38 AM	COMPLETED
3/25/15 12:00 AM	3/25/15 10:44 AM	COMPLETED

<< < 1 2 > >>

[Cancel Pending Jobs](#)

[Configure](#)

[Run](#)

Skip history build failures:

### 3. Click **Configure**.

#### Configure Build From History

Start time:	11	February		
	2015	<input type="button" value="..."/>		
End time:	02	April		
	2015	<input type="button" value="..."/>		
Interval:	<input checked="" type="radio"/> Daily	<input type="radio"/> Weekly	<input type="radio"/> Monthly	<input type="radio"/> Quarterly
Hour:	12:00 AM <input type="button" value="..."/>			
<input type="button" value="Save"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/>				

### 4. Enter the start and end times.

To display a calendar from which you can select these dates, click the down arrow near the month name.

The time format depends upon the locale of the Data Warehouse server.

The start and end times must be within the range of history contained in all the OnCommand Insight servers to which Data Warehouse is connected, as set in the Data Warehouse portal Connectors option. The default start and end times reflect the maximum valid period. The Data Warehouse build job runs automatically at the time you specify.



Configuring a non-realistic schedule such as “Daily for 4 years” results in 1460 build cycles, which could take 10 days to complete.

## 5. Choose the interval.

If you select a monthly or weekly interval, the Day field appears. If you selected monthly, then Day is a date. If you selected weekly, Day is Sunday through Saturday.

## 6. Choose the hour when the build will take place.

## 7. Optionally, to return the options to default settings, click **Reset**.

## 8. Click **Save**.

## 9. From the **Build from History** page, to perform a build outside of the automatic schedule build, click **Run**.

The Target Time column displays the time that this entry was built. The Status column displays whether the build was completed or failed.

## Canceling a build from history job

You can cancel all planned jobs. The job status becomes “Aborted”.

### Steps

1. Log in to the Data Warehouse Portal at <https://hostname/dwh>, where hostname is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **Build from History**.
3. Click **Cancel**.

## Backing up the Data Warehouse database

You can back up the Data Warehouse database, which also includes a Cognos backup, to a file and later restore it using the Data Warehouse portal. Such a backup enables you to migrate to a different Data Warehouse server or upgrade to a new Data Warehouse version.

### Steps

1. Log in to the Data Warehouse Portal at <https://fqdn/dwh>.
2. From the navigation pane on the left, select **Backup/Restore**.
3. Click **Backup** and select your backup configuration:

- a. All Datamarts except Performance Datamart
- b. All Datamarts

This operation can take 30 minutes or more.

+ Data Warehouse creates a backup file and displays its name.

4. Right-click the backup file and save it to a location you want.

You might not want to change the file name; however, you should store the file outside the Data Warehouse installation path.

The Data Warehouse backup file includes the DWH instance's MySQL; custom schemas (MySQL DBs) and tables; LDAP configuration; the data sources that connect Cognos to the MySQL database (not the data sources that connect the Insight server to devices to acquire data); import and export tasks that imported or exported reports; reporting security roles, groups, and namespaces; user accounts; any modified Reporting Portal reports; and any custom reports, regardless of where they are stored, even in the My Folders directory. Cognos system configuration parameters, such as SMTP server setting, and Cognos custom memory settings are not backed up.

The default schemas where custom tables are backed up include the following:

dwh\_capacity

dwh\_capacity\_staging

dwh\_dimensions

dwh\_fs\_util

dwh\_inventory

dwh\_inventory\_staging

dwh\_inventory\_transient

dwh\_management

dwh\_performance

dwh\_performance\_staging

dwh\_ports

dwh\_reports

dwh\_sa\_staging

Schemas where custom tables are excluded from backup include the following:

information\_schema

acquisition

cloud\_model

host\_data

innodb

inventory

inventory\_private

inventory\_time

logs

management

mysql

nas

performance

performance\_schema

performance\_views

sanscreen

scrub

serviceassurance

test

tmp

workbench

In any backup initiated manually, a .zip file is created that contains these files:

- A daily backup .zip file, which contains Cognos report definitions
- A reports backup .zip file, which contains all the reports in Cognos, including those in the My Folders directory

- A Data Warehouse database backup file In addition to manual backups, which you can perform at any time, Cognos creates a daily backup (automatically generated each day to a file called `DailyBackup.zip`) that includes the report definitions. The daily backup includes the top folders and packages shipped with the product. The `My Folders` directory and any directories that you create outside the product's top folders are not included in the Cognos backup.



Due to the way Insight names the files in the `.zip` file, some unzip programs show that the file is empty when opened. As long as the `.zip` file has a size greater than 0 and does not end with a `.bad` extension, the `.zip` file is valid. You can open the file with another unzip program like 7-Zip or WinZip®.

## Backing up custom reports and report artifacts

If you created custom reports in a version of Insight earlier than 7.0, and you want to upgrade to the newest Insight version, you should back up your reports and report artifacts before the upgrade installation and restore them after the upgrade installation. You should also pay attention to the folders that you are using to store report artifacts.

### About this task

If you made changes to the predesigned reports, create your own copies of those reports in a separate folder. That way, when you update the predesigned artifacts, you do not overwrite your changes.

If you have reports in the `My Folders` area, you should copy them to the `Custom Reports` folders so that they are not lost.

## Restoring the Data Warehouse database

You can restore a Data Warehouse database by using the `.zip` file that was created when you backed up that Data Warehouse database.

### About this task

When you restore a Data Warehouse database, you have the option to restore user account information from the backup as well. User management tables are used by the Data Warehouse report engine in a Data Warehouse only installation.

### Steps

1. Log in to the Data Warehouse Portal at `https://hostname/dwh`, where `hostname` is the name of the system on which OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **Backup/Restore**.
3. In the **Restore Database and Reports** section, click **Browse**, and locate the `.zip` file that contains the Data Warehouse backup.
4. If you want to restore reports or user account data, select one or both of the following check boxes:
  - **Restore database**

Includes Data Warehouse settings, data marts, connections, and user account information.

- **Restore reports**

Includes custom reports, predesigned reports, changes that you made to predesigned reports, and reporting settings that you created in the Reporting Portal.



If your database backup contains a custom report that has a slash (/) or an open bracket ([) in its name (for example, US IT Center Switch Port Boston/July), the restore operation renames the report, replacing the slash or open bracket with an underscore (for example, US IT Center Switch Port Boston\_July).

## 5. Click **Restore**.

After the restore process is completed, a message is displayed below the Restore button. If the restore process is successful, the message indicates success. If the restore process fails, the message reports the specific exception that caused the failure. If an exception occurs and the restore process fails, the original database is automatically reset.

## Setting up multiple tenancy in reporting

OnCommand Insight Data Warehouse accommodates multiple tenancy (often shortened to “multi-tenancy” or “multitenancy”) in reporting by allowing you to associate users with one or more business entities. With this feature, administrators can separate data or reports according to user attributes or user affiliation.

Business entities use a hierarchy for the purposes of capacity chargeback using the following values:

- Tenant: Primarily used by service providers to associate resources with a customer, for example, NetApp.
- Line of Business (LOB): A line of business within a company, for example "Hardware" or "Software."
- Business Unit: A traditional business unit such as "Sales" or "Marketing."
- Project: A project to which you might want to assign capacity chargeback.

The process of configuring multiple tenancy involves the following major steps:

- Configure a Data Warehouse user account.
- Create a group in Reporting Portal.
- Assign users to one or more groups, which represent business entities.
- Assign users to one or more business entities. For example, users associated with "NetApp" obtain access to all business entities that have "NetApp" as a tenant.
- Test that users can see only those reports that they should see.

The following points summarize how users access reporting data:

- A user, not assigned to any group, gets access to all the data.
- A user, assigned to any group, will not be able to get access to records without business entity.

For example, you might have the following departments and need to separate reports for users within these departments.

User	Engineering	Support	Finance	Legal
User1	X	X		
User2			X	X
User3		X		

## Configuring user accounts

You must complete several steps to configure user accounts.

### Steps

1. Log in to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **User Management**.
3. Configure each user account.

## Assigning users to business entities

You must complete a series of steps to assign users to business entities. Data Warehouse accommodates multiple tenancy (often shortened to “multi-tenancy” or “multitenancy”) in reporting by allowing you to associate users with one or more business entities. This enables administrators to separate data or reports according to user attributes or user affiliation.

### Steps

1. Log in to the Data Warehouse Portal as administrator at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. On the Data Warehouse toolbar, click  to open the Reporting Portal.
3. Enter your user name and password and click **Login**.
4. From the Launch menu, select **IBM Cognos Administration**.
5. Click the **Security** tab:
6. In the Directory, select **Cognos**.
7. Create a new subfolder in the Cognos folder called “BEs”, for business entities.
8. Open the BEs folder.
9. Click the **New Group** icon to add groups that correspond to different permission levels.

These permission levels can be either the full name of the business entity (for example, NetApp.N/A) or a prefix (for example, NetApp.N/A.Finance). Either of these formats enables access to all projects within the business entity (NetApp.N/A.Finance).

The New Group wizard displays.

10. Complete the pages of the wizard.
11. Select a business entity and click **More**.
12. Click **Set members**.
13. Click **Add**.
14. Select the SANscreen directory.
15. From the list of users, select each user that you want to include in the Business Entity and add the user to the Selected Entries box.
16. Click **OK**.
17. Repeat the process of adding members to each of the business entity groups.

## Troubleshooting setup issues

There are several common issues with annotations, builds, and reports that you may face during setup. You can troubleshoot these issues by following the steps outlined.

### Why I cannot see my annotations

If you cannot see annotations in Data Warehouse, you might need to force an update of annotations and then initiate a Data Warehouse build.

Missing annotations affect the way data is imported into Data Warehouse and is displayed in the reports. For example, if the annotation “Tier” is not available, you will not be able to group storage systems by tier in Data Warehouse reports.

#### Forcing an update of annotations for Data Warehouse

You can initiate an update of annotations from OnCommand Insight to Data Warehouse.

##### About this task

You can update annotations using one of two options:

- Including deleted objects: This includes data about devices that no longer exist such as hosts, storage arrays, or switches that were removed. This is needed if you want to build Data Warehouse data with historical data points.
- Not including deleted objects: Choose this option if you want to exclude deleted objects.

##### Steps

1. Log in to the OnCommand Insight Portal as administrator <https://hostname>, where `hostname` is the name of the system where OnCommand Insight is installed.
2. Click on **Admin > Troubleshooting**. At the bottom of the page, click on **Advanced Troubleshooting**.
3. In the **Actions** tab, click **Update DWH Annotations (include deleted)**.

#### Generating a manual Data Warehouse build

After forcing an annotations update (running transient data) in OnCommand Insight, you

need to initiate a Data Warehouse build. You can wait until the next scheduled build or initiate a build now.

#### Steps

1. Log in as an administrator to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **Schedule**.
3. Click **Build now**.

#### Importing user-defined annotations into Data Warehouse

After forcing an annotation update in OnCommand Insight, you need to select the annotations you want in Data Warehouse and initiate a Data Warehouse build. You can wait until the next scheduled build or initiate a build now.

#### Steps

1. Log in as an administrator to the Data Warehouse Portal at <https://hostname/dwh>, where `hostname` is the name of the system where OnCommand Insight Data Warehouse is installed.
2. From the navigation pane on the left, click **Annotations**.

Annotations			
Annotation	Column Name	Target Object	Published
Compute_Resource_Group	Compute_Resource_Group	Virtual Machine	
Data_Center	dataCenter	Host	✓
Data_Center	dataCenter	Storage	✓
Data_Center	dataCenter	Switch	✓
Note	Note	Switch	
Switch_Level	switchLevel	Switch	✓
Tier	Tier	Internal Volume	
Tier	Tier	Qtree	
Tier	Tier	Storage	
Tier	Tier	Storage Pool	
Tier	Tier	Volume	

**Edit**

The list displays a row for every annotation type and a target object to which the annotation can be assigned. A check mark in the Published column indicates that the annotation was already selected for the particular target object and is already available through the Data Warehouse data marts.

3. Click **Edit** to edit how annotations will be imported from OnCommand Insight.

Annotation	Column Name	Target Object	Published All / None	Init With Current All / None
Compute_Resource_Group	Compute_Resource_Group	Virtual Machine	<input type="checkbox"/>	<input type="checkbox"/>
Data_Center	dataCenter	Host	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Data_Center	dataCenter	Storage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Data_Center	dataCenter	Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Note	Note	Switch	<input type="checkbox"/>	<input type="checkbox"/>
Switch_Level	switchLevel	Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tier	Tier	Internal Volume	<input type="checkbox"/>	<input type="checkbox"/>
Tier	Tier	Object	<input type="checkbox"/>	<input type="checkbox"/>
Tier	Tier	Storage	<input type="checkbox"/>	<input type="checkbox"/>
Tier	Tier	Storage Pool	<input type="checkbox"/>	<input type="checkbox"/>
Tier	Tier	Volume	<input type="checkbox"/>	<input type="checkbox"/>

**Save** **Cancel**

4. To edit the annotation process, do the following:

- Select **Published** to add annotations retrieved from OnCommand Insight into the Data Warehouse database. Click **All** to select all annotations on all objects. Click **None** to ensure that all options are not selected.



Uncheck this option to remove the annotation column from the specific object's inventory table and associated data marts. If any custom-designed reports use annotation data, the reports do not run successfully.

- Check **Init with Current** to initialize historical data in Data Warehouse dimension tables with the current annotation value. Click **All** to select all annotations on all objects. Click **None** to ensure that all options are not selected. This check box is disabled after an annotation is published; the check box is enabled for annotations that are not published. For example, if a host is annotated with annotation type "floor" and gets the value "1", and there are 3 rows for that host in the host\_dimension table, then selecting **Init with Current** associates the value "1" in the "floor" column for all 3 rows in the host\_dimension table. If **Init with Current** is not selected, then only the latest row for that host will have the value "1" in the floor column.

5. Click **Save**.

A warning message appears indicating that this will cause changes to the structure of the data or data loss, if you are removing annotations.

6. To continue, click **Yes**.

Data Warehouse initiates an asynchronous annotations job that applies the requested changes. You can see the job in the Jobs page. You can also see the changes in the Data Warehouse database schema.

## What to do with failing historical build points

You can build from history, omitting any failed builds by enabling the **Skip history build failures** option.

If you do this, the build from history continues. If a build fails and this option is enabled, Data Warehouse continues building and ignores any failed builds. In such cases, there is no data point in the historical data for any skipped builds. If you do not enable this option and the build fails, all subsequent jobs are aborted.

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