



# DeepSee Site Configuration and Maintenance Guide

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*DeepSee Site Configuration and Maintenance Guide*  
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# About This Book

**Important:** This book is for DeepSee I. For information on DeepSee II, see [Getting Started with DeepSee II](#), which also lists the other books for DeepSee II.

This book describes how to configure and maintain a DeepSee site. It contains the following sections:

- [Logging In to DeepSee](#)
- [Managing DeepSee Metadata](#)
- [Configuring the DeepSee Site](#)
- [Loading Images Into the DeepSee Library](#)
- [Maintaining DeepSee Roles and Users](#)
- [Scheduling DeepSee Tasks](#)
- [Customizing the DeepSee User Interface](#)
- [Common Problems](#)

For a detailed outline, see the [table of contents](#).

For more information, see the following books:

- [Overview of DeepSee](#), an introductory guide for all users who are interested in learning about DeepSee.
- [DeepSee Model Design Guide](#), an introductory guide for implementers and business users.
- [DeepSee Developer Tutorial](#), a tutorial for implementers who are creating DeepSee models, pivot tables, and dashboards.
- [Using the DeepSee Connector](#), a guide for implementers who are using the DeepSee Connector to import externally stored data. Note that the DeepSee Connector is available only with Ensemble.
- [Using the DeepSee Architect](#), a guide for implementers who are setting up a DeepSee model for use in the Analyzer.
- [Using the DeepSee Analyzer](#), a guide for implementers and advanced users who want to create pivot tables to embed in applications — or who simply want to explore their data.
- [Using the DeepSee Dashboard Designer](#), a guide for implementers who are using the Dashboard Designer to create dashboards.
- [Expressions and Scripts in DeepSee](#), an implementer guide that describes the syntax and options for all formulas, expressions, and scripts supported in DeepSee. This book also lists all the locations where you can use these expressions and scripts.
- [DeepSee User Guide](#), a user manual for your end users. This book describes how to work with deployed dashboards and pivot tables.

For general information, see the [InterSystems Documentation Guide](#).



# 1

## Logging In to DeepSee

**Important:** This book is for DeepSee I. For information on DeepSee II, see [Getting Started with DeepSee II](#), which also lists the other books for DeepSee II.

This chapter describes how to log in to DeepSee and how to switch to another namespace.

### 1.1 Logging In

First be sure to consult the book *InterSystems Supported Platforms* for information on system requirements.

To log in to DeepSee:

1. In Internet Explorer, go to the following URL:

```
http://localhost:57772/csp/sys/bi/default.htm
```

Where *localhost* is the server on which Caché is running, and *57772* is the port used by the web server.

If you have not yet specified a namespace, the system displays a page that prompts you for a namespace. Otherwise, the system displays the DeepSee login page.

2. If you are prompted for a namespace, type the name of the namespace you want to work in and then click **Logon to DeepSee**.

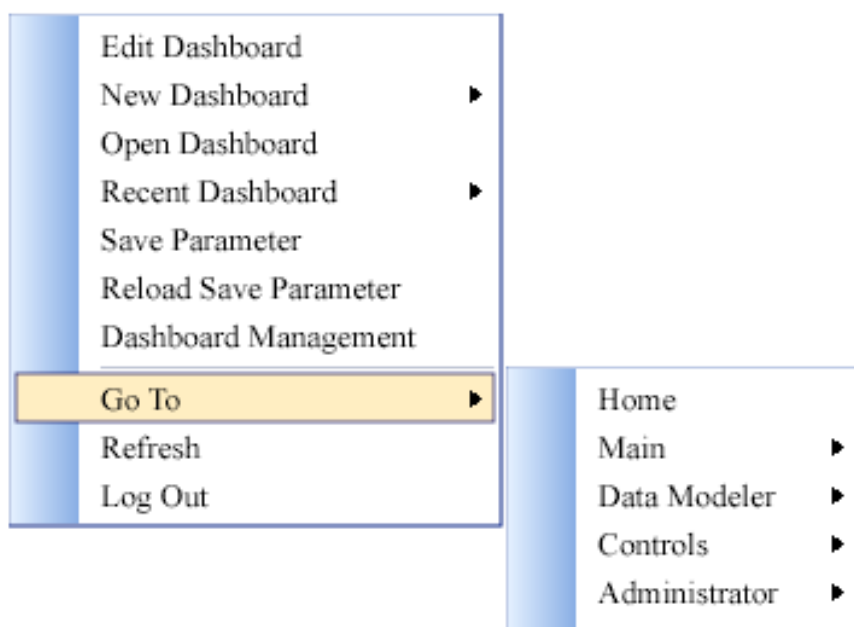
The system then displays the DeepSee login page.

3. Enter a DeepSee username and password. For example, you can use the username `demo` with the password `demo`.
4. For **Role**, select `demo`.
5. Click **Login**.

DeepSee displays the home page, which depends upon the user ID you used to log in. The home page is either a DeepSee module or a dashboard. If the page is a DeepSee module, it has a row of buttons at the top as follows:



If the page is a dashboard, the context menu provides access to all the same options provided by these buttons, in addition to options that apply to dashboards:



## 1.2 Switching to Another Namespace

To switch to a different namespace:

1. Log out. To do so, do one of the following, depending on what you are currently viewing:
  - If you are currently viewing a DeepSee module, click **Log Off** in the upper right.
  - If you are currently viewing a DeepSee dashboard, right-click and then click the **Log Out** option.

The system logs you out of DeepSee.

2. Click **Switch Namespace**.
3. For **Namespace**, type the name of the namespace you want to work in.
4. Click **Logon to DeepSee**.

This displays a login page.

5. Log in as usual.

# 2

## Managing DeepSee Metadata

This chapter describes how to manage the DeepSee metadata (the data apart from your transactional data). It discusses the following topics:

- [Overview of the DeepSee metadata](#)
- [How to modify a namespace to map the DeepSee metadata from other databases](#)
- [How to export and import the DeepSee metadata](#)
- [How to make the image files available on the production system](#)

### 2.1 Overview of the DeepSee Metadata

The DeepSee metadata consists of the DeepSee model, pivot tables, dashboards, and so on.

It is useful to be able to manage the DeepSee metadata separately from the transactional data. For example, it is common practice to create the DeepSee metadata in a test system and then copy it to a production system. You can do this in two different ways:

- You can set up the test namespace so that the DeepSee metadata is mapped from another database. You can then move that database as needed to the production system and then recompile the base class.
- You can export the DeepSee metadata from the test system. You can then import it into the production system and then recompile the base class.

Similarly, for performance, it can be useful to store the DeepSee indices in a separate database. (The indices are not part of the metadata, strictly speaking. This chapter discusses options for them anyway.)

### 2.2 Modifying a Namespace for Use with DeepSee

Before working with DeepSee, it is worthwhile to make the following changes to the namespace that you plan to use:

1. Create a new database (the model database) to contain the DeepSee model and other elements.
2. Optionally create another new database (the index database) to contain the DeepSee indices. For performance, optionally switch off journaling for this database.
3. In the namespace, map the model elements from the new model database. To do so, define the following global mappings:

Global	Subscript	Database	Contents of This Global
BI.*		<i>model database</i>	Most of the model definition
BIidx.Condition*		<i>model database</i>	Definitions of any compound members
SYS	( "BI" )	<i>model database</i>	DeepSee configuration settings

4. If you created an index database, also define the following global mappings:

Global	Subscript	Database	Contents of This Global
BIidx.*		<i>index database</i>	DeepSee indices
BIlog.*		<i>index database</i>	Log data

For example:

The global mappings for namespace SAMPLES are displayed in the following table:

	Global	Subscript	Database	
	BI.*		SAMPLEDSMODEL	<a href="#">Edit</a>
	BIidx.Condition*		SAMPLEDSMODEL	<a href="#">Edit</a>
	BIidx.*		SAMPLEDSIX	<a href="#">Edit</a>
	BIlog.*		SAMPLEDSIX	<a href="#">Edit</a>
	SYS		SAMPLES	<a href="#">Edit</a>
	SYS	("BI")	SAMPLEDSMODEL	<a href="#">Edit</a>

(Notice that the user interface automatically adds a mapping for SYS.)

For general information on mapping globals, see the *Caché System Administration Guide*.

**Important:** You can perform the same configuration on a test system and a production system and then create your DeepSee model on the test system. When your DeepSee model is complete, you can copy the model database from the test system to the production system. When you do so, be sure to recompile and rebuild before using the Analyzer or any dashboards.

## 2.3 Exporting and Importing the DeepSee Metadata

DeepSee also provides two utilities to export and import the DeepSee metadata (except from the indices).

- For model elements, click **Data Modeler > Architect**. This utility enables you to export and import dimensions (and measures), dynamic dimensions, compound members, detail listings, listing fields, relationships, and subject areas.
- For elements that are outside the model, click **Administrator > Folder Management**. This utility enables you to export and import pivot tables, KPIs, and dashboards.

In both cases, the toolbar includes the following buttons:



The following subsections describe how to use these utilities.

## 2.3.1 Export and Import Directories

When you work with these utilities, you cannot specify the directories that they use. Instead:

- DeepSee writes the export files to the export subdirectory of your working directory; for information on specifying the working directory, see the section “[Path Options](#),” later in this book.


By default, this is *install-dir/csp/sys/bi/work/namespace/export/*.

- DeepSee assumes the import files are in the import subdirectory of your working directory.

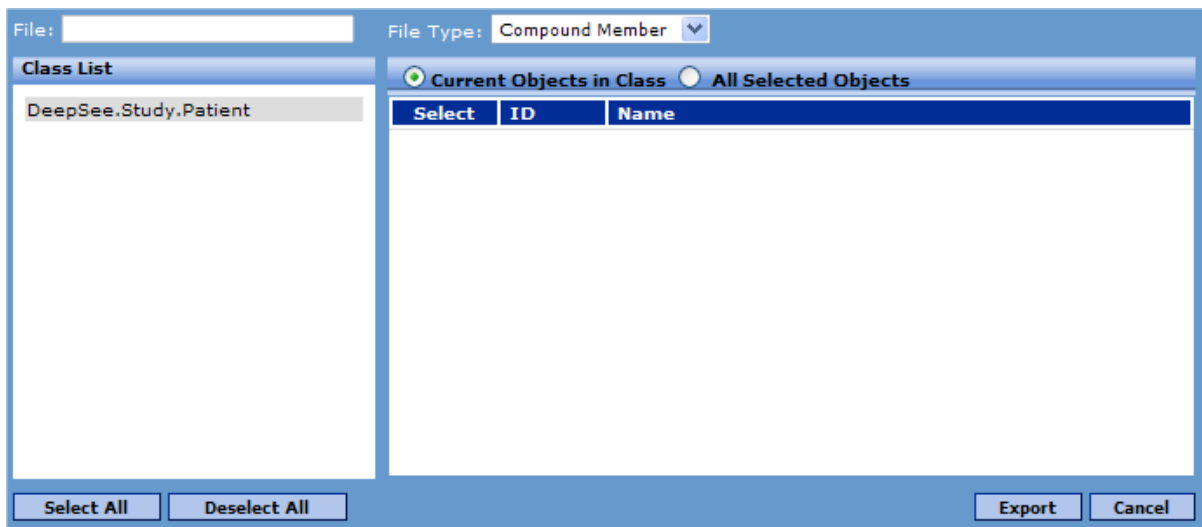
By default, this is *install-dir/csp/sys/bi/work/namespace/import/*.

## 2.3.2 Exporting Model Elements

To export model elements:

1. Click **Data Modeler > Architect**.
2. Click the Export button .

DeepSee displays a dialog box where you choose the items to export.



3. For **File**, type a filename, without a path.  
If this file already exists, DeepSee does not let you overwrite it.
4. Click a class in the list on the left.
5. For **File Type**, select one of the following:
  - **Compound Member** — Exports the compound members as shown on the **Compound Mem** tab.

- **Detail Listing** — Exports the detail listings as shown on the **Detail List** tab.
- **Dimension** — Exports the dimensions as shown on the **Dim** tab.
- **Dynamic Dimension** — Exports the dynamic dimensions as shown on the **Dyn Dim** tab.
- **List Field** — Exports the independent listing fields as shown on the **List Field Library** tab.
- **Relationship** — Exports the relationships as shown on the **Rel** tab.
- **Subject Area** — Exports the subject areas as shown on the **Subject** tab.

The table on the right then lists all the elements of that type in the selected class.


6. Select the elements to export.
7. Click **Export**.

DeepSee then writes the export file.

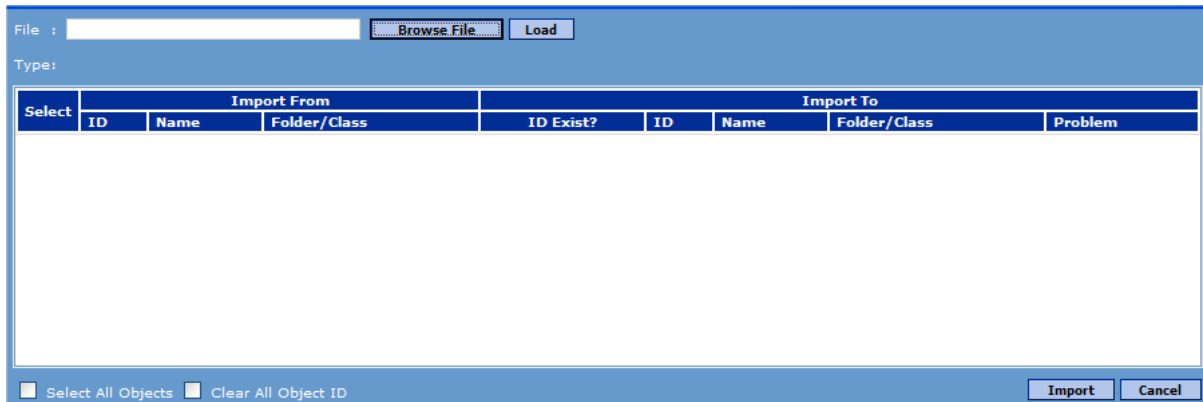
## 2.3.3 Importing Model Elements

The class to which these elements refer must already exist in this namespace.

To import model elements:

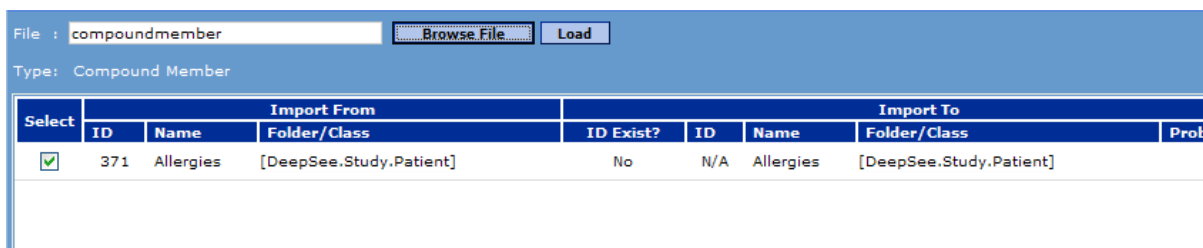
1. Click **Data Modeler > Architect**.
2. Click the Import button .

DeepSee displays the following dialog box.



Select	Import From			ID Exist?	ID	Import To			Problem
	ID	Name	Folder/Class			Name	Folder/Class		

3. Click **Browse File** and then select a file.



Select	Import From			ID Exist?	ID	Import To			Problem
	ID	Name	Folder/Class			Name	Folder/Class		
<input checked="" type="checkbox"/>	371	Allergies	[DeepSee.Study.Patient]	No	N/A	Allergies	[DeepSee.Study.Patient]		


4. Select the items to import.
5. Click **Import**.

Be sure to import or create each element required by the imported files. For example, if you import a detail listing, you must also import the listing fields that it uses or define those listing fields in this namespace. Similarly, if you import a compound member, either import the dimensions to which it refers to or define those dimensions in this namespace.

**Important:** After importing model elements, you must recompile and possibly also rebuild, depending on what has changed. See “[When to Recompile and Rebuild](#)” in *Using the DeepSee Architect*.


## 2.3.4 Exporting Other Elements

To export other metadata elements that are outside the DeepSee model:

1. Click **Administrator > Folder Management**.
2. Click the Export button .  
DeepSee displays a dialog box where you choose the items to export.
3. For **File**, type a filename, without a path.  
If this file already exists, DeepSee does not let you overwrite it.
4. For **File Type**, select one of the following:
  - **Dashboard** — Exports dashboards.
  - **Pivot** — Exports pivot tables.
  - **KPI** — Exports KPIs.
5. Click a folder on the left.  
The table on the right then lists all the elements of that type in the selected folder.
6. Select the elements to export.
7. Click **Export**.  
DeepSee then writes the export file.

## 2.3.5 Importing Other Elements

To import other metadata elements that are outside the DeepSee model:

1. Click **Administrator > Folder Management**.
2. Click the Import button .  
DeepSee displays a dialog box where you choose the items to import.
3. Click **Browse File** and then select a file.
4. Select the items to import.
5. Click **Import**.

## 2.4 Copying the Image Files

When you load images into the DeepSee image library, DeepSee copies them to the directory *install-dir/csp/sys/bi/work/namespace/img*, where *install-dir* is the directory where Caché is installed and *namespace* is the namespace into which you copied the files.

When you deploy DeepSee, be sure to copy this directory to the production system.

# 3

## Configuring the DeepSee Site

DeepSee provides a central configuration module that you can use to control the currency prefix, locations of files, various defaults, and so on. This chapter describes this module. It discusses the following topics:

- [How to access the site configuration module](#)
- [Data Type options](#)
- [ETL options](#)
- [E-mail options](#)
- [OLAP options](#)
- [Path options](#)
- [Pivot options](#)
- [Syntax options](#)
- [System options](#)

### 3.1 Accessing the Site Configuration Module

To access the Site Configuration module:

1. First:
  - If you are currently viewing a DeepSee module, click **Administrator > Site Configuration**.
  - If you are currently viewing a dashboard, right-click and then click **Go To > Administrator > Site Configuration**.

The left side of the page lists configuration areas.

2. To use this screen, click a configuration area on the left and then edit details on the right.

When you edit an item, the **Comments** field displays information about the item.

3. Click **Save** to save your changes.

Your changes take effect immediately, except where noted.

The main configuration areas are as follows:

**Table 3–1: Site Configuration Options**

Configuration Area	Purpose	For Information
<b>Audit Trail</b>	Ignore these options.	
<b>Data Type</b>	Specify the days of the month, days of the week, the financial month, and the months of the year.	See “ <a href="#">Data Type</a> .”
<b>E-Mail</b>	Specify email options for DeepSee.	See “ <a href="#">E-Mail</a> .”
<b>ETL</b>	Most options here apply to the Connector. This set of options also includes an option to enable incremental rebuilds of all DeepSee indices.	See “ <a href="#">ETL</a> .”
<b>Fonts</b>	Ignore these options.	
<b>OLAP</b>	Fine-tune the behavior of DeepSee, especially its performance.	See “ <a href="#">OLAP</a> .”
<b>Path</b>	Specify locations, especially of log files.	See “ <a href="#">Path</a> .”
<b>Pivot</b>	Fine-tune the behavior of pivot tables.	See “ <a href="#">Pivot</a> .”
<b>SMS</b>	Ignore these options.	
<b>Syntax</b>	For advanced use only.	See “ <a href="#">Syntax</a> .”
<b>System</b>	Specify the currency prefix, number formatting, and other options.	See “ <a href="#">System</a> .”

## 3.2 Data Type Options

You use the **Data Type** options to specify the days of the month, days of the week, the financial month, and the months of the year.

## 3.3 E-Mail Options

DeepSee can send email automatically, particularly from the Connector module.

For the **E-Mail** configuration area, you can specify the following options:

- **SMTP Server** — Specify the SMTP server for DeepSee to use when sending email.
- **System e-mail address** — Specify the email address of the email account from which DeepSee can send email.
- **System e-mail password** — Specify the password of that email account.
- **ETL mail default mailto address** — Specify the default email address for DeepSee send messages to. This is used if no email address is specified within the Connector.
- **ETL mail default subject** — Specify the default subject for email messages. This is used if no email subject is specified within the Connector.

Ignore **POP3 Server**, which is not used.

## 3.4 ETL Options

You use the **ETL** options primarily to fine-tune the behavior of the Connector. Here, you can specify the following options:

- **Incremental Index Update** — Select this to enable incremental rebuilding of the DeepSee indices. This affects all classes in the current namespace that used by DeepSee, not just the classes created by the Connector.

**Important:** After changing this option, recompile the classes. This change does not take effect until the classes are recompiled.

See the section “[Incremental Rebuilds](#)” in the book *Using the DeepSee Architect*.

- **Multi Site?** — Select this to enable the multi site feature of the Connector. See the chapter “[Using Multiple Databases for a Single Class](#)” in *Using the DeepSee Connector*.
- **Database?** — Specify the type of external database that the Connector can use. Specify 0 for Microsoft Access (the default), 1 for Oracle, or 2 for Postgres SQL.

## 3.5 OLAP Options

You use the **OLAP** options to fine-tune the behavior of DeepSee, especially its performance. Here, you can specify the following options:

- **Number of Threads?** — Specify the number of threads to use when building indices the indices.
- **# of Rebuild Process** — Specify the number of processes to use when building indices. The default is 1. For fast builds, set this equal to the number of CPUs.

You can also set this option for a specific BI-enabled class. See the chapter “[Enabling Classes for Use in DeepSee](#)” in the book *Using the DeepSee Architect*.

- **%BI.Adaptor %OnAfterSave Script** — Specify Caché ObjectScript statements to run at the beginning of the **%OnAfterSave** method of %BI.Adaptor.
- **%BI.Adaptor %OnDelete Script** — Specify Caché ObjectScript statements to run at the beginning of the **%OnDelete** method of %BI.Adaptor.

## 3.6 Path Options

You use the **Path** options to specify locations, particularly of files. Here, you can specify the following options:

- **Rebuild Status** — Specify where to write log files when rebuilding indices.

The default is `install-dir\dev\bi\namespace\status\rebuild\`

- **ETL Status** — Specify where to write log files when loading data. DeepSee writes a separate file for each class.

The default is `install-dir\dev\bi\namespace\status\etl\`

- **Class Compilation Status** — Specify where to write log files when recompiling BI-enabled classes. DeepSee writes a separate file for each class; the files contain the same compilation messages that are shown in the Architect or in Studio.

The default is *install-dir\dev\bi\namespace\status\compile\*

- **Pivot Status** — Specify where to write errors that occur when executing a pivot table.

The error files are named 1.txt, 2.txt, and so on. The **Max Pivot Error File** option (in the **Pivot** section) specifies the maximum number of such error files to write, before overwriting the oldest file.

The default is *install-dir\dev\bi\namespace\status\pivot\*

- **Web application** — Specify the location of the DeepSee web application.

The default is *install-dir\csp\sys\bi\*

- **Working Directory** — Specify where to write other files (for example, when users export data in a pivot table to Excel), relative to the directory *install-dir\CSP\sys\bi*.

The default is *\work\namespace\*

- **Dashboard wizard default logo** — Specify the ID of the image file for the Dashboard Designer wizards to use by default. This image is placed in the upper left of the dashboards generated by the wizards. The default is 2, which corresponds to the DeepSee logo.

**Note:** Be sure to include a final slash or backslash on these paths, as appropriate for your operating system.

When you first access a namespace, DeepSee sets up the directories described here. These directories must be read/write. If DeepSee fails to set up these directories, open the Terminal, change to the namespace that you want to use, and enter the following command:

```
do setPath^%bi.SMr.Setup(1)
```

This routine creates the directories and sets the appropriate **Path** options for this namespace.

Ignore the other **Path** options.

## 3.7 Pivot Options

You use the **Pivot** options to fine-tune the behavior of pivot tables. Here, you can specify the following options:

- **Max Pivot Row Per Page** — Specify the maximum number of rows to display in a single page of a pivot table. The default is 50.
- **Max Pivot Error File** — Specify the maximum number of pivot table error files to write, before overwriting the oldest files. The default is 100. (Note that the **Path** options include an option for setting the location of these files.)
- **Minimum Row to allow Drill Down** — Specify the minimum number of source records required for a user to be able to display the detail listing for a cell in a pivot table. The default is null, which means there is no minimum. If you set this option, if a given cell uses more than zero records but less than the minimum, the user cannot display a detail listing for that cell.
- **Minimum Row replacement string** — Applies only if you set **Minimum Row to allow Drill Down**. This option specifies a graphic or string to display in place of the normal cell contents, in the case where a cell uses more than zero records but less than the minimum. Specify either the numeric ID of a graphic or use the syntax *\$\$tag^Routine* to return a string, by calling your own routine.

# 3.8 Syntax Options

The **Syntax** section provides one option:

- **GetData - RowId** — Specify the syntax used to get the row ID for a row. The default is `GetData ( 1 )`

# 3.9 System Options

You use the **System** options to control basic behavior. Here, you can specify the following options:

- **Display Value for All Option (Combo box)** — Specify the string to display in combo boxes and list boxes, as the special first line, which represents “no selection.”  
The default is null. You can type a string such as `all` or `no selection`, without quotes.
- **Default currency prefix** — Specify the default prefix to use when displaying numbers in currency format. The default is \$
- **System date** — Specify an integer that indicates which format to use for dates. The following table lists some common options:

Value	Format*	Example
-1	Default format specified by locale	
1	<i>MM/DD/YYYY</i>	07/13/2009
2 or 0	<i>DD Mmm YYYY</i>	13 Jul 2009
3	<i>YYYY-MM-DD</i>	2009–07–13
4	<i>DD/MM/YYYY</i>	13/07/2009

\*Here, *DD* is a two-digit day, *MM* is a two-digit month, *Mmm* is the month name abbreviation, and *YYYY* is a four-digit year.

For other values, see the details for the *dformat* argument to the \$ZDATE function.

- **Record load limit (per excel file)** — Specify the maximum number of records to export to Excel.
- **Number Formatting** — Specify the character to use as the thousands separator in numbers (in pivot tables and other dashboard elements):
  - The default is null, which means that a comma is used as the thousands separator. (In this case, a period is used as the decimal separator.)
  - Use a period ( . ) instead for European-format numbering. For example:

**Number Formatting:**

This setting means that a period is used as the thousands separator (and a comma is used as the decimal separator).

Ignore the other options.



# 4

## Loading Images Into the DeepSee Library

DeepSee provides a module that enables you to load existing image files into the DeepSee library for use in dashboards and other locations.

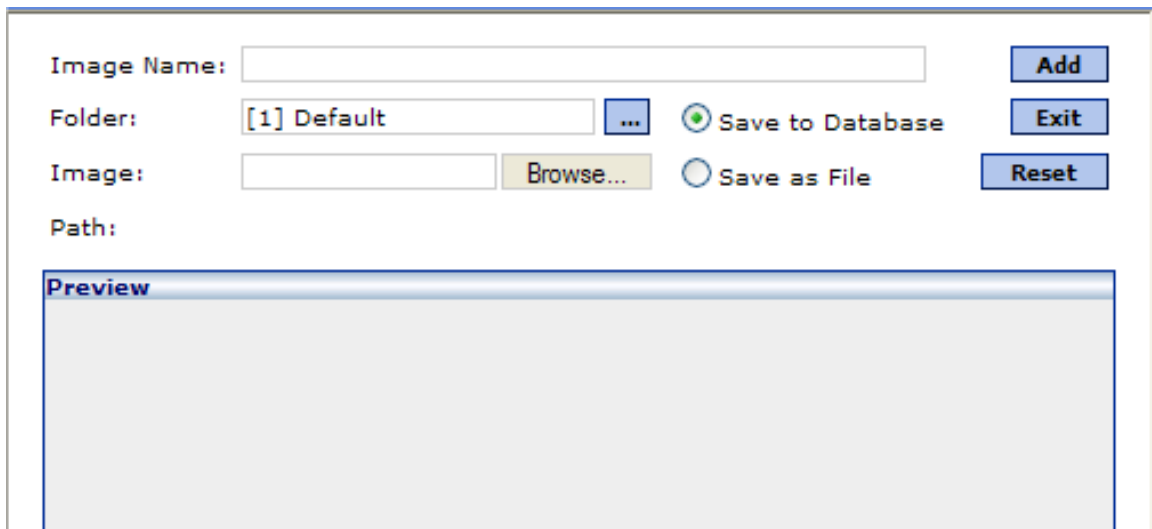
Depending on your choice, the actual image file is either copied into the database or is copied into the DeepSee directories on the server.

In either case, you specify a name for the image. Then DeepSee assigns an internal ID to it and creates an image “file” in the DeepSee library. This image “file” is then available for use.

### 4.1 Loading Images

1. First:
  - If you are currently viewing a DeepSee module, click **Controls > Image List**.
  - If you are currently viewing a dashboard, right-click and then click **Controls > Image List**.
2. Right-click a folder in the left area and then select **Add Image**.


DeepSee displays a dialog box where you specify the details of the image “file” that you are creating.



The dialog box contains the following elements:

- Image Name:** A text input field.
- Folder:** A dropdown menu showing "[1] Default" with a "..." button to the right.
- Image:** A text input field with a "Browse..." button to its right.
- Path:** A text input field.
- Save Options:** Two radio buttons: "Save to Database" (selected) and "Save as File".
- Buttons:** "Add", "Exit", "Reset", and "Browse..." (next to the Image field).
- Preview:** A large rectangular area at the bottom labeled "Preview" for displaying the image.

3. On this dialog box, specify the following:

- **Image Name** — Type a name for this image. DeepSee displays this name when you are selecting an image to add it to a dashboard, but users do not see the name.
  - **Folder** — Optionally click the Browse button  and select a different folder to contain the image “file.”
  - **Image** — Click **Browse...**, and navigate to the actual image file that you want to use.
4. Optionally click **Save as File** if you do not want to load the image into the database.
- If you choose this option, DeepSee copies the image file into the directory `install-dir\CSP\sys\bi\work\namespace\img` and gives the file a new name based on a generated internal ID.
- If you instead use **Save to Database**, DeepSee copies the image into the CACHETEMP database. This option is not recommended, because you typically cannot copy this database to your production system.
5. Click **Add**.

## 4.2 Uses

You can use the loaded images in all the following locations:

- Dashboards. You can specify a background image for a dashboard, and you can include image elements on the dashboard. See [Using the DeepSee Dashboard Designer](#).
- Within text-to-image transformations. See [Using the DeepSee Architect](#).
- Within alerts. See [Using the DeepSee Analyzer](#).
- Within KPI display rules. See [Using the DeepSee Analyzer](#).

# 5

## Maintaining DeepSee Roles and Users

This chapter describes how to maintain DeepSee roles and users. It discusses the following topics:

- [An overview of DeepSee roles and users](#)
- [How to add or change a DeepSee role](#)
- [Options in a DeepSee role definition](#)
- [How to delete a DeepSee role](#)
- [How to add or change a DeepSee user](#)
- [Options in a DeepSee user definition](#)
- [How to unlock a DeepSee user](#)
- [How to suspend a DeepSee user](#)
- [How to delete a DeepSee user](#)

### 5.1 Overview of DeepSee Roles and Users

DeepSee uses its own users and roles, rather than the users and roles you define in Caché. The key differences are as follows:

- A DeepSee role controls access to subject areas, detail listings, and DeepSee modules.
- A DeepSee user can have multiple roles, but (in contrast to Caché) when the user logs in, he or she selects a role, so that only permissions associated with that role apply during that login session.

Typically, you define two sets of users. The first set are users who work with the Analyzer, the Dashboard Designer, and other back-end tools. The second set are end users who access DeepSee dashboards from your application. These users would have access to a much smaller set of options than the first set.

### 5.2 Adding or Editing a Role

To add or edit a role:

1. First:


- If you are currently viewing a DeepSee module, click **Administrator > Roles Maintenance**.
- If you are currently viewing a dashboard, right-click and then click **Go To > Administrator > Roles Maintenance**.

The left side of the page lists existing roles.

2. Either click an existing role or click **New**.
3. Specify details for the role as described in the following section.
4. Click **Add** or **Update** in the lower right.

## 5.3 DeepSee Role Options

Each DeepSee role includes the following basic information:

- **Name** — Specify the name of the role. Use only alphanumeric characters.
- **Module on Login** — Specify the DeepSee module to load when a user logs in with this role. To use this option, click the Browse button  and then select a module.

If you change this option, make sure that you choose a module that gives access to all other needed DeepSee modules. See the chapter “[Customizing the DeepSee User Interface](#).”

- **Minimum Row to allow Drill Down** — Specify the minimum number of source records required for this role to be able to display the detail listing for a cell in a pivot table. The default is null, which means there is no minimum. If you set this option, if a given cell uses more than zero records but less than the minimum, the user cannot display a detail listing for that cell.
- **Modules** — On this tab, click the check box next to each DeepSee module that is available to this role. Or click **Check All** to select all modules.

By default, a new role does not have access to any modules.

- **Subject Areas** — On this tab, click the check box in the **Grant Access** column for each subject area that is available to this role. Or click **Check All** to select all subject areas.

By default, a new role does not have access to any subject areas.

- **Detail Listings** — On this tab, click the check box in the **Grant Access** column for each detail listing that is available to this role. Or click **Check All** to select all detail listings.

By default, a new role does not have access to any detail listings.

- **Members** — Click this tab to display all the users who belong to this role.

To change the roles to which a user belongs, you must edit the user definition, as described [later in this chapter](#).

- **ETL Classes** — On this tab, click the check box for each class that this role should be able to see within the Connector. Or click **Check All** to select all classes.

Ignore the other options: **Parent Role** and **Maximum Number of License**.

### 5.3.1 Recommended Role Options for End Users

For your end users, you may want to create a simple DeepSee role that provides access only to dashboards (not to the Dashboard Designer, the Analyzer, and other back-end tools). When you define the role, you would give access to the following modules, which are in the **Dashboard** group:

- **Load Dashboard** — Provides the ability to display dashboards.
- **Listing to Screen** — Provides the ability to display detail listings.

## 5.4 Deleting a Role

To delete a role:

1. In the **All Roles** list, click the role.
2. Click **Delete** in the lower right. DeepSee prompts you for confirmation.

## 5.5 Adding or Editing a User

To add or edit a user:

1. First:
  - If you are currently viewing a DeepSee module, click **Administrator > Users Maintenance**.
  - If you are currently viewing a dashboard, right-click and then click **Go To > Administrator > Users Maintenance**.

The left side of the page lists existing users.

2. Either click an existing user or click **New**.
3. Specify details for the user as described in the [following section](#).
4. Click **Add** or **Update** in the lower right.

By default, when a new DeepSee user logs in, DeepSee displays the User Preferences module and no navigation aids to get to other parts of DeepSee. InterSystems recommends that when you first create a user account, you then log in as that user and configure the user interface for the user. For details, see “[Configuring the DeepSee User Interface for a Given User](#),” later in this book. If you give this user access to the User Preferences module, he or she can later redefine the user interface that he or she sees.

## 5.6 DeepSee User Options

This section describes the options within a DeepSee user definition.

### 5.6.1 Basic User Options

Each DeepSee user definition includes the following basic information:

- **Code** — Specify the unique user ID for this user, for use when logging in.  
Use only alphanumeric characters.
- **Full Name** — Specify the full name for this user.
- **New Password** and **Retype New Password**— Specify the password for this user.

- **Timeout Period** — Specify the timeout period for this user, in seconds. This option is ignored if you select **No Timeout**.
- **No Timeout** — Select this to disable timeout for this user.
- **Minimum Row Drill Down** — Specify the minimum number of source records required for this user to be able to display the detail listing for a cell in a pivot table. The default is null, which means there is no minimum. If you set this option, if a given cell uses more than zero records but less than the minimum, the user cannot display a detail listing for that cell.
- **Security Level** — Select 9.
- **Enable Cache Scripting** — Optionally select this to enable the user to enter Caché ObjectScript expressions (for example, as default values in the Dashboard Designer).
- **All Password Options** — Optionally select this to select all the following options:
  - **8 Character Minimum**
  - **Password must be alphanumeric**
  - **No reuse of last four passwords**
  - **Password expires after 30 days**

Or clear **All Password Options** and select the individual options you want.

## 5.6.2 Roles to Which a User Belongs

In the **Roles of User** area, specify the DeepSee roles to which this user belongs. To do so, use the arrow buttons or double-click to move roles from the **Available Roles** list to the **User's Roles** list.

## 5.6.3 Folder Access

In the **Folders** area, you specify which folders this user can access.

By default, a new user cannot access any folders, which means the user cannot display any dashboards or pivot tables.

You can click **Super User** to give this user access to all the folders. Or drag and drop folders from the left area to the right area and then fine-tune the permissions that the user has for each.

## 5.6.4 Other Options

Ignore the options related to the address book feature, which DeepSee does not use: **E-mail Address**, **E-mail Signature**, and **Digital Sign**. Also ignore **Language**.

## 5.6.5 Recommended User Options for End Users

When you create user accounts for your end users, you would typically create simple users that use only one role, a role that can display dashboards and detail listings; see “[Recommended Role Options for End Users](#),” earlier in this chapter.

# 5.7 Unlocking a User Account

When a user has tried to log in three times without providing the correct password, DeepSee locks that user account. To restore the user's login access:

1. In the **All Users** list, click the user.
2. Clear the **Locked** check box in the lower part of the page.
3. Click **Update** in the lower right.

## 5.8 Suspending a User Account

To suspend a user account, preventing that user from logging in:

1. In the **All Users** list, click the user.
2. Click the **Locked** check box in the lower part of the page.
3. Click **Update** in the lower right.

## 5.9 Deleting a User

To delete a user:

1. In the **All Users** list, click the user.
2. Click **Delete** in the lower right. DeepSee prompts you for confirmation.



# 6

## Scheduling DeepSee Tasks

DeepSee provides a simple user interface (the Scheduler module) which you can use to schedule the rebuilding of indices as well as data loading tasks. This chapter describes how to access and use this tool. It discusses the following topics:

- [How to add or edit a group of tasks](#)
- [Details for the types of tasks you can include](#)
- [How to delete a group of tasks](#)

You can also perform these tasks programmatically without use of the Scheduler module. For information on data loading methods, see the book *Using the DeepSee Connector*.

For information on incremental, programmatic updates to the DeepSee indices, see the book *Using the DeepSee Architect*.

### 6.1 Adding or Editing a Task Group

To add or edit a task group that is scheduled as a single unit:

1. First:
  - If you are currently viewing a DeepSee module, click **Main > Scheduler**.
  - If you are currently viewing a dashboard, right-click and then click **Go To > Main > Scheduler**.

DeepSee displays a list of the task groups, along with summary information for them.

2. Now either click the **Edit** link for an existing group or click **Add New**.
3. Specify the following basic information for this task group:
  - **Name** — Name of this task group, as seen in the Scheduler main page.
  - **Description** — Optional description.
  - **Run Frequency** — How often this task group is executed. Click one of the following:
    - **Once** — Click this to execute this task group once. Specify a date in the **Date** field.
    - **Daily** — Click this to execute this task group every day.
    - **Weekly** — Click this to execute this task group every week. Click a day of the week from the set of check boxes.

- **Monthly** — Click this to execute this task group every month. Select a day of the month from the drop-down list.
  - **Hourly** — Click this to execute this task group every hour.
  - **Start Time** — Time when the Scheduler should start executing this task group. The default time is 1 A.M.
4. Specify the tasks in this task group. To do so, use the **Current Tasks** area, which summarizes the tasks in this group.
    - To add a task, click **Add**, which displays a dialog box. Specify the details and then click **Done**.  
The details depend upon the type of task you are adding. See the next section in this chapter.
    - To edit a task, click the **Edit** link in the row for that task. The Scheduler displays a dialog box. Specify the details and then click **Update**.
    - To change the order in which the tasks are performed, click the **Up** or **Down** links in the rows as needed.
    - To delete a task, click the check box to its left and then click **Delete**.
  5. Optionally click **Run Now** to execute this task group immediately.
  6. Click **Save** to save your changes.

## 6.2 Task Types

This section explains the details for the different types of tasks:

- **ETL Load** — Loads data from external source. Use this if you used the Connector to define the classes. The Connector defines class methods that control how data is loaded. The **ETL Load** task type executes those methods.
- **Build Data Mart** — Rebuilds the DeepSee indices.
- **Custom** — Executes your custom Caché ObjectScript.

Ignore the task type **Reporting**, which is not supported in DeepSee.

### 6.2.1 ETL Load

If you choose **ETL Load** for **Task Type**, you can specify the following details:

- **Task Name** — Name of the task to display within the task group.
- **Functions** — Type of data load operation to perform. This is one of the following:
  - **Load All** — Load all records that exist in the external data source.
  - **Incremental Load** — Load only new or changed records.
  - **Ascending Incremental Load** — Performs an ascending incremental load. If you enable the ascending incremental load feature, it uses a specific field such as `OrderID`. First it checks the highest value in the local database for that field. When it selects external data to load, it ignores any records with lower values for that field. Then it loads the remaining records in ascending order by that field value. For information on enabling this feature, see [Using the DeepSee Connector](#).
- **Class** — Name of the class to load. Data is loaded into the tables for this class and all its related classes.
- **Use Complex Code** — Caché ObjectScript to execute.

- **Suspend Task** — Select this check box to disable this task.

## 6.2.2 Build Data Mart

If you choose **Build Data Mart** for **Task Type**, DeepSee rebuilds the DeepSee indices for the selected base class. You can specify the following details:

- **Task Name** — Name of the task to display within the task group.
- **Functions** — Type of operation to perform. This must be **Rebuild**.
- **Class** — Name of the base class to rebuild (the class that inherits from %BI.Adaptor).
- **Suspend Task** — Select this check box to disable this task.

## 6.2.3 Custom

If you choose **Custom** for **Task Type**, you can specify the following details:

- **Task Name** — Name of the task to display within the task group.
- **Use Complex Code** — Caché ObjectScript to execute.
- **Suspend Task** — Select this check box to disable this task.

# 6.3 Deleting a Task Group

In the Scheduler:

1. Click the check box next to the task group you want to delete.
2. Click **Delete**. DeepSee prompts you for confirmation.



# 7

## Customizing the DeepSee User Interface

Typically only a few of your users work directly with the DeepSee user interface (because most instead use DeepSee dashboards), but those users might want to customize the DeepSee user interface. This chapter describes how to do so. It discusses the following topics:

- [Structure of the DeepSee user interface](#)
- [Shortcuts defined for the demo user](#)
- [How to configure the user interface for a given user](#)

**Note:** To perform the tasks described in this chapter, you must have access to the User Preferences module.

### 7.1 Structure of the DeepSee User Interface

The DeepSee user interface is highly flexible and can be different for each user. This section describes the basic options and the defaults.

When a user logs into DeepSee, two elements control what the user sees:

- The home page for this user. The default home page is the User Preferences module, which is discussed earlier in this book. The home page could instead be the Analyzer, the Architect, or any other DeepSee module. The home page could also be a custom dashboard.

The home page is determined by the user's role. See the section "[DeepSee Role Options](#)," earlier in this book.

- The set of selected shortcuts for this user. A shortcut can be a link to a DeepSee module, a link to a dashboard, a link to a dashboard function, or a list of other shortcuts. These shortcuts are available either as buttons at the top of the page or (equivalently) as options on the context menu in dashboards.

The available shortcuts are determined in the User Preferences module.

### 7.2 Selected Shortcuts for the demo User

For the demo user, the default selected shortcuts are as follows:

- **Main** — A shortcut that consists of the following shortcuts:

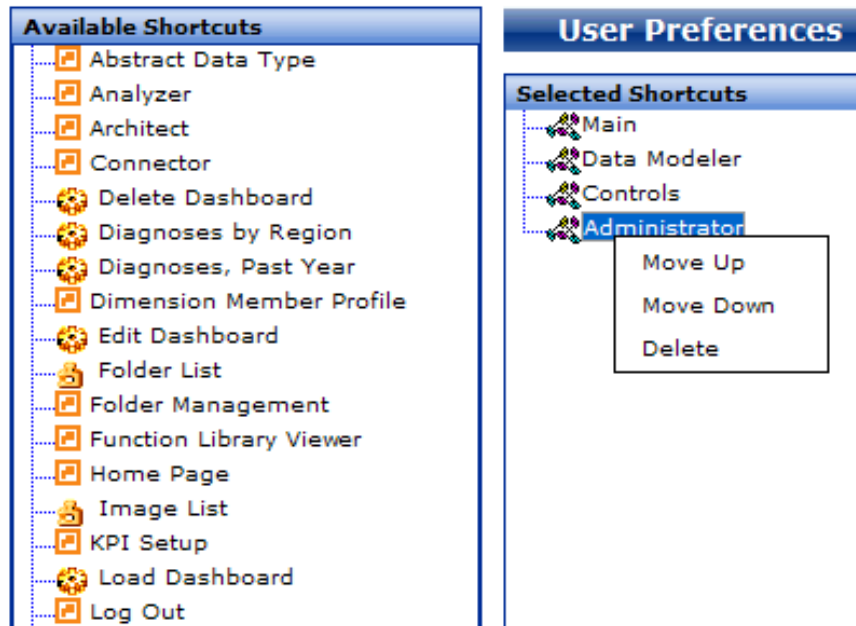
- **Analyzer**
- **Open Dashboard**
- **Recent Dashboard**
- **User Preferences**
- **Scheduler**
- **KPI Setup**
- **Data Modeler** — A shortcut that consists of the following shortcuts:
  - **Connector**
  - **Architect**
  - **Transformation**
  - **Abstract Data Type**
  - **Multi Sites**
  - **SQL Field Shortcuts**
  - **OLAP Classes**
- **Controls** — A shortcut that consists of the following shortcuts:
  - **Image List**
  - **Folder List**
  - **Pivot List**
  - **Query Variable**
  - **Function Library**
  - **Function Library Viewer**
- **Administrator** — A shortcut that consists of the following shortcuts:
  - **Users Maintenance**
  - **Roles Maintenance**
  - **Site Configuration**
  - **Folder Management**
  - **Shortcut Management**

## 7.3 Configuring the User Interface for a Given User



By default, when a new DeepSee user logs in, DeepSee displays the User Preferences module and no navigation aids to get to other parts of DeepSee.

InterSystems recommends that when you first create a user account, you then log in as that user and configure the user interface for the user.

1. Create any shortcuts as needed. See [Using the DeepSee Dashboard Designer](#).
2. Log in to DeepSee using the new username.
3. Specify the selected shortcuts for the user. These shortcuts are available either as buttons at the top of the page or as options on the context menu.  
To specify the selected shortcuts, double-click the desired shortcuts in the **Available Shortcuts** list. The items are added to **Selected Shortcuts**.
4. Optionally, to adjust the order of the shortcuts, right-click a shortcut in **Selected Shortcuts** and click **Move Up** or **Move Down**, as needed. For example:



To delete an item, right-click it and click **Delete**.

5. Specify the DeepSee home page for the user. To do so, click the Browse button  next to **Load Module On Login**, and select a suitable module, typically **Analyzer** or **Architect**.
6. For **My Folder**, click the Browse button  and select a suitable folder, typically **Default**.  
This is not required, but choosing a folder saves time for the user.
7. Optionally, specify the following:
  - **Display Date** — Select a date format.
  - **Full Screen on Login** — Select this to maximize the browser window when the user first logs in.

Ignore the email options, which apply only to the Address Book module, which is not included in DeepSee. Also ignore **Language**.
8. Click **Save**.
9. Optionally click the **Home** link to see DeepSee as it will be displayed when this user next logs in.
10. Log out.

If you give this user access to the User Preferences module, he or she can later redefine the user interface that he or she sees.



# 8

## Common Problems

This chapter describes possible DeepSee problems and their solutions. It discusses the following problems:

- [Cannot log in](#)
- [Chart uses incorrect sort order](#)
- [Compilation errors](#)
- [Context menu \(right-click menu\) is unavailable](#)
- [Data is not current](#)
- [Dates are shown in \\$HOROLOG format](#)
- [Detail listing not seen in Analyzer](#)
- [Dimension has no members](#)
- [Dimension is not seen in Analyzer](#)
- [Dimension members are not as expected](#)
- [Export to Excel fails](#)
- [Incremental updates do not work](#)
- [New user cannot access dashboard](#)
- [Pivot table is empty](#)
- [Rebuilding causes <MAXSTRING> error](#)
- [Recent class list shows obsolete class](#)
- [Record count is incorrect](#)
- [Subject area not seen in Analyzer](#)

### 8.1 Cannot Log in

Scenario: You cannot log in to DeepSee.

Response: Ensure that you are using the correct browser and meet all platform requirements as documented in the book *InterSystems Supported Platforms*.

## 8.2 Chart Uses Incorrect Sort Order

Scenario: You have a dimension that is sorted correctly when you use it for rows or columns in a pivot table. But when you display the pivot table as a chart, the dimension members are not sorted correctly.

Response: Do the following in the Analyzer.

1. Expand the dimension name in the **Row** or **Column** box.
2. Right-click **All Conditions** and then click **Edit Condition**.
3. For **Sorting**, select the appropriate sort option.
4. Click **OK**.

## 8.3 Compilation Error

Scenario: When compiling BI-enabled classes, you receive the following error:

```
Run-time error: <NOTOPEN>CompileClass+4^%bi.Smr.Stat1
```

Response: Set up the paths as described in “[Path Options](#),” earlier in this book.

For each namespace you use, DeepSee requires certain paths to be set up (on the server), in which it writes progress and status details. These paths are usually set up automatically when you first access a namespace, but sometimes they are not.

## 8.4 Context Menu (Right-click Menu) Is Unavailable

Scenario: When you right-click within DeepSee, the browser does not display the context menu.

Response: Check the following.

- The SVG Viewer browser plug-in should be installed.
- JavaScript should be enabled in the browser.

## 8.5 Data Is Not Current

Scenario: The data you see in a pivot table or dashboard is out of date.

Response: Check the following items.

- If the data changed since the pivot table or dashboard was refreshed, run or refresh the pivot table or dashboard.

**Tip:** A dashboard can be configured to be automatically refreshed with the latest data.

- Make sure that you have rebuilt the DeepSee indices for the relevant classes.
- If you are using the incremental update option, make sure that you recompiled the relevant classes after enabling that option.

- If you are using the incremental update option and if the changed data is in a child table, be sure that your application includes logic to detect the change and to call the **zzBuildOne()** method as appropriate.
- If you are using external data, make sure that you have reloaded data into the Caché database.

**Tip:** You can use the DeepSee Scheduler to reload data automatically.

## 8.6 Dates Are Shown in \$HOROLOG Format

Scenario: For a date-type dimension, members are displayed in Caché **HOROLOG** format.

Response: Do the following in the Architect.

1. Make sure that the dimension is of type **Date** rather than **Values**.
2. Recompile and rebuild after changing the type.

## 8.7 Detail Listing Is Not Seen in Analyzer

Scenario: You have just created a detail listing in the Architect and it is not visible in the Analyzer.

Response: Do the following in the Architect.

- Make sure that you have created a subject area.
- Make sure that you have given your DeepSee role access to this subject area.
- Make sure that you have given your DeepSee role access to the detail list.

## 8.8 Dimension Has No Members

Scenario: You have just created a dimension in the Architect. When you try use this dimension in a filter, you see that the dimension does not have any members.

Response: This situation occurs if you have created a dynamic dimension, which is not indexed.

- To create a filter expression that uses a dynamic dimension, you must type the expression rather than selecting members interactively.
- You cannot use this dimension for rows or columns of a pivot table.

## 8.9 Dimension Is Not Seen in Analyzer

Scenario: You have just created a dimension in the Architect and it is not visible in the Analyzer.

Response: Do the following in the Architect.

- Make sure the dimension is active. (Select the **Active** check box.)
- Make sure the type of the dimension is appropriate. If **Data Type** is **Number**, the dimension is added as a measure but cannot be used as a dimension.
- Make sure that you have created a subject area.
- Make sure that this dimension is included in the subject area.
- Make sure that you have given your DeepSee role access to the subject area.
- Make sure that you recompiled the classes.
- Make sure that you rebuilt the indices (not necessary for dynamic dimensions).
- Make sure that the first **Property** field for this dimension is the name of the class that you are using for this dimension, as follows:

General	Manual Child Browse	Translation/Replacement
Dimension Name	Age	
Data Type	Number	
Property :	DeepSee.Study.Patient	
Link Property :	Age	
Complex Code :		

No matter how you define the dimension, there must be a value in this field.

Also make sure that the indices contain data for this dimension. DeepSee does not display a dimension unless the indices return data for it.

## 8.10 Dimension Members Are Not As Expected

Scenario: You have created or modified a dimension, but the members that you see in the Analyzer are not what you expect.

Response: Check for the following cases, all of which can produce the described symptoms.

- The **Manual Child Browse** options take precedence over **Complex Code**. If you modified a dimension to use **Complex Code** instead of **Manual Child Browse**, you might have forgotten to clear the **Manual Child Browse** options.
- The **Complex Code** option takes precedence over directly using a property. If you want to base a dimension directly on a property, make sure that both **Complex Code** and **Manual Child Browse** are blank.
- The **Manual Child Browse** options and the **Complex Code** option both ignore any null replacement string you enter on the **Translation/Replacement** tab.

## 8.11 Export to Excel Fails

Scenario: When you try to export a pivot table to Microsoft Excel, you receive the following error:

```
'Invalid Web Application path, please check the path
for web applications in site configuration'.
```

Response: Do the following.

1. Go to **Administrator > Site Configuration**.
2. Click **Paths**.
3. If the **Working Directory** option is not set, specify it. This is a directory relative to *install-dir\CSP\sys\bi\work\namespace*  
The default is *\work\namespace*
4. Make sure this directory exists and is read/write.

If the preceding steps do not resolve the problem, also do the following in the Management Portal:

1. Create a web application */csp/sys/bi/work* (or other as appropriate for your **Working Directory** setting).
2. Enable autocompile for this web application.

## 8.12 Incremental Update Does Not Work

Scenario: You have enabled incremental updates, but DeepSee does not update the indices when the data changes.

Response: Check the following.

- Ensure that you recompiled the base class after enabling incremental update.
- If the changed data is in a table other than the base table, be sure that the application calls **zzBuildOne()** to update the indices for the changed record. For examples, see the [DeepSee Developer Tutorial](#).

## 8.13 New User Cannot Access Dashboards

Scenario: You create a new user and assign a specific dashboard as the default module to display upon logging in. The new user sees a blank screen or a scripting error.

Response: Ensure that the user has access to all the following.

- The **Dashboard > Load Dashboard** module, which is controlled by the role that the user chooses when logging in.
- The folder in which the dashboard is contained, which is controlled by the user definition.
- The subject area or areas used in the dashboard, which is controlled by the user definition.

When you create a new role and a new role, none of these elements are assigned by default.

To resolve the problem, examine both the role and the user definition and ensure that the user has access to all the required elements.

## 8.14 Pivot Table Is Empty

Scenario: You click **Find** and the pivot table is empty. Or you display a pivot table on a dashboard, and it is empty.

Response: Check for the following cases, any of which can cause a pivot table to be empty.

- The filters applied to the pivot table can cause it to be empty. Check all applicable filters: the filter defined in the pivot table, the filter defined for the subject area, any filters within the dashboard that are applied to the pivot table. The filters are combined.
- The filter expressions might be inappropriate.

When you create a filter expression interactively, the default operator used to combine conditions is **And**. This means that if you choose (for example) Juniper and then Elm Heights, the resulting filter expression is as follows:

```
[Home City = Juniper] AND [Home City = Elm Heights]
```

This filter blocks all data because a patient can have only one home city.

- You may have attempted to use a dynamic dimension as a row or column. Dynamic dimensions are not indexed and thus can be used only within filters.

## 8.15 Rebuilding Causes <MAXSTRING> Error

Scenario: When you rebuild the DeepSee indices, you receive an error like the following:

```
Error: <MAXSTRING>dlrTR2+4^%bi.SWr.WebMain2
ErrorNo: 5002
CSP Page:
/csp/sys/bi/%CSP.Broker.cls
Namespace: NZZ
Class: %CSP.Broker
Routine: %bi.SWr.WebMain2
Location: dlrTR2+4
```

Comment: This error can occur when your DeepSee model includes dimension-type listing fields. Such listing fields are stored within a global, with 500 records stored by default in each node of the global. If the listing field data contains many characters, DeepSee can exceed the limit permitted for a global node, which causes the error shown here.

Response: Do the following in the Architect.

1. In the table on the **Dim** tab, examine all the dimensions for which the **Listing Field** option is selected. Look for a dimension whose source data contains many characters.
2. Click that dimension in the table.
3. On the **General** tab below the table, change the value of **Count Per Node** to a number that is smaller than 500.
4. Recompile and rebuild.

If the error occurs again, reduce the value of **Count Per Node** and try again.

Another option is to create an independent listing field instead, as follows:

1. In the table on the **Dim** tab, click the dimension on which the listing field is based.
2. On the **General** tab below the table, clear the **Listing Field** option.
3. Click **Update** to save this change.
4. In the table on the **Dim** tab, right-click the dimension and select **Add to Listing Fields**.
5. Adjust any detail listings as necessary, so that they use the newly created independent listing field instead of the dimension-type listing field.
6. Recompile and rebuild.

For information on dimension-type and independent listing fields, see the chapter “[Defining Listing Fields](#)” in *Using the DeepSee Architect*.

## 8.16 Recent Class List Shows Obsolete Class

Scenario: You have removed %BI.Adaptor from the superclass list of a class that you had previously worked with in the Architect. The class still appears in the recent class list in the Architect.

Response: Remove the globals in which this metadata is stored. In the Terminal, go to the namespace that contains the class and execute the following:

```
SAMPLES>k ^BI.RecentAccessI
```

```
SAMPLES>k ^BI.RecentAccessD
```

Or selectively delete the relevant nodes of these globals by using the Management Portal.

## 8.17 Record Count Is Incorrect

Scenario: A pivot table shows data but has fewer records than expected.

Response: Check the following.

- Look at each dimension that is used in the pivot table. Make sure that these dimensions do not have gaps. For example, suppose you have a dimension called Ship Region, which is based on a field called ShipRegion, which is null in some records. If you have not applied a transformation to represent null values as a string, then any record that has a null ShipRegion is not represented in any member of this dimension.

Alternatively, if you apply a transformation to the dimension, to represent null values as the string No Region, then the dimension includes the member No Region, which consists of all records with null values for ShipRegion.

- Look at all the filters that are applied to the pivot table, as described in “[Pivot Table Is Empty](#).”

## 8.18 Subject Area Is Not Seen in Analyzer

Scenario: You have just created a subject area in the Architect and it is not visible in the Analyzer.

Response: Make sure that you have given your DeepSee role access to this subject area. Access to a subject area is controlled by DeepSee roles and is not assigned by default.



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