SecurView®

Breast Imaging Workstation

SecurView® DX Advanced Multimodality Option

Installation and Service Manual

Software Version 10.3

MAN-05769 Revision 002

HOLOGIC®

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Advanced Multimodality Option

Installation and Service Manual

For Software Version 10.3

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HOLOGIC®

Product Support

USA: +1.877.371.4372

Europe: +32 2 711 4690

Asia: +852 37487700

Australia: +1 800 264 073

All Other: +1 781 999 7750

Email: BreastHealth.Support@hologic.com

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Contents

Chapter 1: Introduction

This chapter provides an overview of how to use this manual, safety precautions, document conventions, a glossary, and warning information.

1.1. About This Manual

This manual provides installation, configuration, and maintenance procedures on installing the following on a Hologic SecurView® DX 10.3 Standalone or Multiworkstation system:

- Advanced Multimodality Option
- Second Multimodality Monitor

1.2. Preinstallation Checklist

1.2.1. Before You Arrive at the Site

Before you travel to the site, take steps to ensure that you have the materials needed for the following:

- ❑ **Licenses.** Review the licenses for each system before starting the installation (select **Administration** and then the **Licensing** tab). You must acquire a new MULTIMODALITY license key code. Obtain a new license file by emailing SecurViewLicenses@hologic.com with the serial number and dongle ID. Contact Technical Support for further assistance.

  ⚠ ***Note:*** *To obtain the license key code for SecurView DX Software-Only systems, refer to the latest* SecurView DX Software-Only Installation Instructions.

- ❑ **SecurView version.** Before installing the Multimodality Option, ensure the workstation is currently at SecurView version 10.3 or later. If the workstation is at an earlier version, perform an upgrade to the latest software version.

  ⚠ ***Note:*** *Separate instructions are available that explain how to upgrade qualified existing SecurView DX Workstations to the latest software version. For more information, refer to the latest* SecurView DX/RT Upgrade to 10.3 FMI *for Windows 7 / Windows Server 2008*, SecurView DX/RT Standalone/Client Upgrade to 10.3 FMI *for Windows 10, and the latest* SecurView DX/RT Manager Upgrade to 10.3 FMI *for Windows Server 2016.*

- ❑ **Dell T7610 or older.** If the customer currently has a Dell T7610 or older as its Standalone or Client, then they must upgrade to the current workstation computer hardware (Dell T7910 or newer) before you can install the Multimodality Option for SecurView 10.3 or later.

1.2.2. Additional Notes

- ❑ **Time required.** This modification requires up to one hour to complete.
- ❑ **License dongle ID.** For each DX workstation, record the license dongle ID printed on the dongle. The dongle should be present in a USB port on the computer. If you remove the dongle to read the ID, make sure that you reconnect the dongle.
- ❑ **Other modalities.** Check with the other modalities such as ultrasound and MRI to start the process of configuring them to send images to this workstation.
- ❑ **Configuration instructions.** Depending on the site system configuration, consult the following table for the appropriate configuration instructions.

System Configuration	Configuration Instruction
Multimodality Option	Begin with section **2.1**
Second Multimodality Monitor	See the following sections: **2.3**, **2.4**, **2.5**, **3.1**

1.3. Training

Hologic does not accept responsibility for injury or damage associated with improper or unsafe system operation.

Service engineers must ensure that they receive training on SecurView workstations with Hologic training programs prior to servicing the unit.

Service engineers should refer to the user guides for directions on how to use and configure SecurView workstations.

1.4. Document Conventions

Type text written in `monospaced font` exactly as shown.

This manual uses the following conventions to provide technical and safety information of special interest.

⚠ ***WARNING!*** *An instruction that, if not followed, can result in a hazardous condition.*

⚠ ***CAUTION:*** *An instruction that, if not followed, can result in damage to the system.*

⚠ ***Important:*** *An instruction provided to ensure correct results and optimal performance, or to clarify the limitations of the device.*

⚠ ***Note:*** *Background information provided to clarify a particular step or procedure.*

Chapter 2: Installing the Advanced Multimodality Option

This chapter describes the procedures needed to install the Advanced Multimodality Option.

2.1. Backing Up the Old SecurView Settings (Standalone, Manager)

Use these instructions to save configuration settings and back up the database. This backup will be your failsafe if something goes wrong during an installation.

1. Log into Windows as **Administrator**.
2. Display Windows Explorer by pressing **Windows** + [E]
3. Navigate to **E:\SecurView\Hologic-Service**.
4. Double-click **SaveSettingsAndDB.bat**. Follow the on-screen instructions.
5. Close the window after the script finishes.
6. Load an external removable media.
7. Navigate to **F:** and drag the **Hologic-Service-Data** folder into the removable media.

2.2. Installing a Multimodality Monitor

1. Position the multimodality LCD monitor next to the Barco monitors according to customer preference.
2. Connect the multimodality monitor to the next available display port on a 4-port Barco Controller.

   ⚠ ***Note:*** *If the SecurView computer has a 2-port Barco Controller and a separate multimodality video card, connect to the multimodality video card. If the SecurView computer has a 2-port Barco Controller, but does not support a separate multimodality video card, upgrade to a 4-port Barco Controller is required to support multimodality.*
3. Turn on the multimodality monitor.
4. Power on the computer.

2.3. Installing a Second Multimodality Monitor

Perform this procedure only if the site has ordered a second monitor for the Advanced Multimodality Option.

1 Shut down and power off the computer.

2 Connect the second multimodality monitor.

a Position the second multimodality LCD monitor to the right of the first multimodality LCD monitor.

b Connect the second multimodality monitor to the remaining port on a 4-port Barco Controller.

⚠ ***Note:*** *If the SecurView computer has a 2-port Barco Controller and a separate multimodality video card, connect to the multimodality video card. If the SecurView computer has a 2-port Barco Controller, but does not support a separate multimodality video card, upgrade to a 4-port Barco Controller is required to support multimodality.*

c Turn on the multimodality monitors.

d Power on the computer.

2.4. Arranging the Displays

⚠ ***Note:*** *Consult with customer for monitor arrangement preference. The diagram below is a suggested layout.*

These instructions assume you have basic knowledge about configuring monitors in Windows 7 and Windows 10. If you are not familiar with how to arrange and configure monitors in Windows 7 or Windows 10:

For Windows 7, follow the link below to the Microsoft Technical bulletin on dual monitor setup in Windows 7.

http://support.microsoft.com/kb/976064

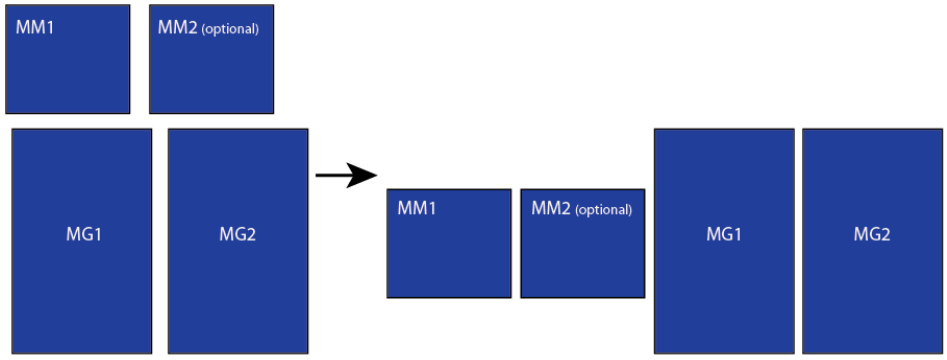
For Windows 10, follow the link below to the Microsoft Technical bulletin on dual monitor setup in Windows 10.

https://support.microsoft.com/en-us/help/4340331/windows-10-set-up-dual-monitors

1 Log into Windows as **Administrator**.

2 Select **Start** and type “Display” in the search bar. Select the option to change the display settings.

3 Change the display configuration to the customer’s preference as in the following example:



Multimodality Configuration

4 Select the multimodality (MM1) monitor.

   a In the **Multiple displays** list, select the option to extend the displays.

   b Select the **Make this my main display** check box.

   c Set the screen resolution for MM1 to 1600 × 1200 for a standard display or 1920 x 1200 for a wide-screen display.

5 If the second multimodality monitor (MM2) is installed, select the multimodality (MM2) monitor.

   a In the **Multiple displays** list, select the option to extend the displays.

   b Set the screen resolution for MM2 to 1600 × 1200 for a standard display or 1920 x 1200 for a wide-screen display.

6 Select **OK** and **Yes** to accept the changes.

7 Test the monitor configuration to verify that the mouse travels across the monitors from the leftmost monitor to the rightmost monitor as configured.

2.5. Configuring Patient List for Display on Multimodality Monitor

If customer wants to display the patient list on the multimodality monitor (or the second multimodality monitor), refer to the 'Configuring Patient List for Additional Color Monitor (Optional)' section in the latest version of the *SecurView DX/RT Workstation Installation & Service Manual*.

2.6. Configuring Standalone License Settings

This section is for Standalone systems only. To configure a Manager-Client system, see **2.9. Configuring Client License Settings** reference.

1 For each workstation, record the license dongle ID (e.g., *9-65EA736E*) printed on the dongle. The dongle should be present in a USB port on the computer.

2 Email the serial number and license dongle ID to SecurViewLicenses@hologic.com.

⚠ ***Note**: The SecurView license team will confirm if the system is eligible for the license requested, generate the new license, and email the license.dat file(s) to you.*

⚠ ***Note:** To obtain the license key for SecurView DX Software-Only systems, refer to the latest SecurView DX Software-Only Installation Instructions.*

3 Confirm the SecurView license team emailed the requested license.dat file(s) to you.

   – If there is a problem with the received license.dat file(s) respond to the email from SecurViewLicenses@hologic.com.

4 Log into Windows as **SCR**. Log into the SecurView application as **service**.

5 Select **Administration** and select the **Licensing** tab. The Licensing window appears.

6 Enter the following values for the MULTIMODALITY feature (case-sensitive).

Feature:	`MULTIMODALITY`
Generation:	`10.1`
Key:	`20-character license string`

⚠ ***Note:** The license generation number must match the SecurView version number (e.g., SecurView 10.1 requires a 10.1 license).*

7 Select **Check**. The application checks whether the license is available for your system. If so, the license appears in the Licensing window.

⚠ ***Note:*** *Ensure the Key field is a 20-character string. Append zeros to the end if the key contains fewer than 20 characters.*

8 Record the feature, generation, and license keys in the Field Modification Notice on the last page of this document.

9 Select **OK**. Select the **Exit to Windows** tab, then select **OK** to confirm.

⚠ ***Note:*** *Restart the application after making changes to the service settings.*

10 Double-click the SecurView icon.

11 Log in as **service** and select **Administration**.

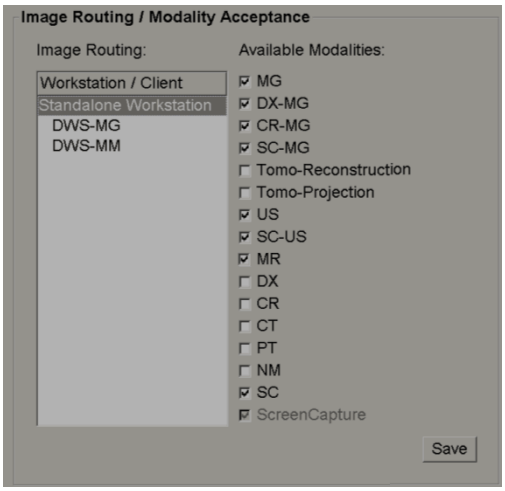
2.7. Configuring Routing for a Standalone Workstation

Perform routing **only** on a Standalone. Routing for a Client is performed on the Manager.

⚠ ***Note:*** *For further assistance with image routing, refer to 'Configuring the SecurView Application' chapter in the latest version of the* SecurView DX/RT Workstation Installation & Service Manual.

⚠ ***Note:*** *Consult with the customer to determine which modalities will be viewed on the Standalone workstation, and to which viewer modalities such as SC (Secondary Capture of modality other than US or MG), DX (of modality other than MG) and CR (of modality other than MG) should be routed. Each configured modality should be routed to only one viewer.*

1 Select the **Routing** tab. The Image Routing / Modality Acceptance window appears.



2 In the **Image Routing** field, select **Standalone Workstation**.

3 Select the check boxes for the image types that the customer intends to send to the workstation.

4 In the **Image Routing** field, select **DWS-MG**.

5 Clear the following check boxes: **US** and **SC-US**.

6 Confirm the site modalities for viewing in the Mammography (MG) viewer. Select the following check boxes as appropriate: MG, DX-MG, CR-MG, SC-MG, Tomo-Reconstruction, Tomo-Projection, DX, CR, and SC.

⚠ ***Note:*** *Selecting DX or CR under DWS-MG versus DWS-MM depends on where the customer wants to view digital X-Ray or computed radiography images with modality other than MG. Tomosynthesis settings apply only when the customer has a valid license.*

7 In the **Image Routing** field, select **DWS-MM**.

⚠ ***Note:*** *SecurView 10.1 and later cannot route MG, DX-MG, CR-MG, Tomo-Reconstruction, and Tomo-Projection to the MM Viewer.*

8 Confirm the site modalities for viewing in the multimodality (MM) viewer. Select the following check boxes as appropriate: US, SC-US, MR, DX, CR, CT, PT, NM, and SC.

⚠ ***Note:*** *Selecting SC under DWS-MG versus DWS-MM depends on where the customer wants to view Secondary Capture images with modality other than MG or US, such as scanned paper documents or digitized films with other modality values.*

9 Select **Save**, then select **OK** (twice).

10 Configure the multimodality viewer for each user as needed (see the latest version of the *SecurView DX Advanced Multimodality Option User Guide*).

11 If the customer wants to print from the multimodality viewer, then configure the printer (see **3.5. Setting Up a Printer**).

12 Select the **Exit to Windows** tab and select **OK** to confirm.

⚠ ***Note:*** *Restart the application after making changes to the service settings.*

13 Enable the second multimodality monitor (see **3.1. Enabling a Second Multimodality Monitor**).

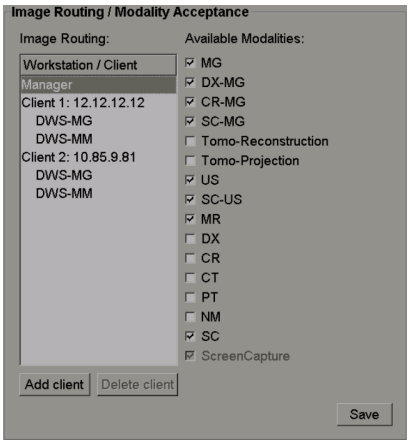
2.8. Configuring Routing for a Manager

1 Log into Windows as **SCR**. Log into the SecurView application as **service**.

2 Select **Administration** and select the **Routing** tab. The Image Routing / Modality Acceptance window appears.

⚠ ***Note:*** *For further assistance with image routing, refer to the 'Configuring the SecurView Application' chapter in the latest version of the* SecurView DX/RT Workstation Installation & Service Manual.

⚠ ***Note:*** *Consult with the customer to determine which modalities will be viewed on the Client workstations, and to which viewer modalities such as Secondary Capture (SC) (other than US or MG modality), DX (other than MG modality) and CR (other than MG modality) should be routed. Each configured modality should be routed to only one viewer.*



3 In the **Image Routing** field, select **Manager**.

4 Select the check boxes for the image types the customer intends to send to the workstation.

5 For each Client workstation connected to the Manager, do the following:

a In the **Image Routing** field, highlight **DWS-MG**.

b Clear the following check boxes: **US** and **SC-US**.

c Confirm the site modalities for viewing in the Mammography (MG) viewer. Select the following check boxes as appropriate: MG, DX-MG, CR-MG, SC-MG, Tomo-Reconstruction, Tomo-Projection, DX, CR, and SC.

⚠ ***Note:*** *Selecting DX or CR under DWS-MG versus DWS-MM depends on where the customer wants to view digital X-Ray or computed radiography images with modality other than MG. Tomosynthesis settings apply only when the customer has a valid license.*

d In the **Image Routing** field, highlight **DWS-MM**.

⚠ ***Note:*** *MM Routing can be configured only for the first listed Client. MM Routings must be the same for all Clients connected to this Manager; therefore, subsequent Clients will use the routing configured for the first Client.*

⚠ ***Note:*** *SecurView 10.1 and later cannot route MG, DX-MG, CR-MG, Tomo-Reconstruction, and Tomo-Projection to the MM Viewer.*

e Confirm the site modalities for viewing in the multimodality (MM) viewer. Select the following check boxes as appropriate: US, SC-US, MR, DX, CR, CT, PT, NM, and SC.

⚠ ***Note:*** *Selecting SC under DWS-MG versus DWS-MM depends on where the customer wants to view Secondary Capture images with modality other than MG or US, such as scanned paper documents or digitized films with other modality values.*

6 Select **Save**, then **OK**.

7 Configure the multimodality viewer for each user as needed (see the latest version of the *SecurView DX Advanced Multimodality Option User Guide*).

8 If the customer wants to print from the multimodality viewer, then configure the printer (see **3.5. Setting Up a Printer**).

⚠ ***Note:*** *Printer configurations will be applied to all connected Clients.*

9 Select the **Exit to Windows** tab and select **OK** to confirm.

⚠ ***Note:*** *Restart the application after making changes to the service settings.*

2.9. Configuring Client License Settings

Perform the procedure in this section on all Client workstations connected to the Manager.

⚠ ***Note:*** *When configuring a multiworkstation system, be sure to perform section* ***2.8. Configuring Routing for a Manager*** *before performing this section.*

1. For each workstation, record the license dongle ID (e.g., *9-65EA736E*) printed on the dongle. The dongle should be present in a USB port on the computer.
2. Email the serial number and license dongle ID to SecurViewLicenses@hologic.com.

   ⚠ ***Note****: The SecurView license team will confirm if the system is eligible for the license requested, generate the new license, and email the license.dat file(s) to you.*

   ⚠ ***Note:*** *To obtain the license key for SecurView DX Software-Only systems, refer to the latest SecurView DX Software-Only Installation Instructions.*
3. Confirm the SecurView license team emailed the requested license.dat file(s) to you.
   - If there is a problem with the received license.dat file(s) respond to the email from SecurViewLicenses@hologic.com.
4. Log into Windows as **SCR**. Log into the SecurView application as **service**.
5. Select **Administration** and select the **Licensing** tab. The Licensing window appears.
6. Enter the following values for the MULTIMODALITY feature (case-sensitive).

   Feature: `MULTIMODALITY`
   Generation: `10.1`
   Key: `20-character license string`

   ⚠ ***Note:*** *The license generation number must match the SecurView version number (e.g., SecurView 10.1 requires a 10.1 license).*
7. Select **Check**. The application checks whether the license is available for your system. If so, the license appears in the Licensing window.

   ⚠ ***Note:*** *Ensure the Key field is a 20-character string. Append zeros to the end if the key contains fewer than 20 characters.*
8. Record the feature, generation, and license keys in the Field Modification Notice on the last page of this document.
9. Select **OK**.
10. Configure the multimodality viewer for each user as needed (see the latest version of the *SecurView DX Advanced Multimodality Option User Guide)*.
11. Select the **Exit to Windows** tab and select **OK** to confirm.

    ⚠ ***Note:*** *Restart the application after making changes to the service settings.*
12. Enable the second multimodality monitor (see **3.1. Enabling a Second Multimodality Monitor**).

2.10. Locking the Taskbar

1. Right-click the taskbar to display the shortcut menu.
2. Clear the **Lock the Taskbar** option.
3. Drag the taskbar to the bottom of the Multimodality monitor (MM1 or the monitor that was defined as the primary monitor in **2.4. Arranging the Displays**).
4. Right-click the taskbar and select **Lock the Taskbar** from the shortcut menu.
5. Select **Start**, select the user profile icon, and then select **Sign Out**.
6. Log into Windows as **Administrator**.
7. Repeat steps 1–4.
8. Select **Start,** select the user profile icon, and then select **Sign Out**.

2.11. Backing Up the New SecurView Settings (Standalone, Manager)

1. Create a new backup disk using the instructions in **2.1. Backing Up the Old SecurView Settings (Standalone**, Manager).

2.12. Completing the Installation Report

Service Engineers who have access to the Hologic intranet (https://my.hologic.com) should complete this online report:

1. From MyHologic, select **Divisions > Breast & Skeletal Health Solutions > BSH Customer Experience and Service > Imaging Field Service Team Site**.
2. On the *Imaging Field Service* web page, locate and select the **Installation Report** button.
3. Fill out all required fields and select **Submit**.

Authorized dealers who have access to the Hologic extranet *(The WIRE)* should complete this online report:

1. Navigate to https://thewire.hologic.com/installation-form to access the installation report.
2. Fill out all required fields and select **Submit.**

Chapter 3: Additional Information

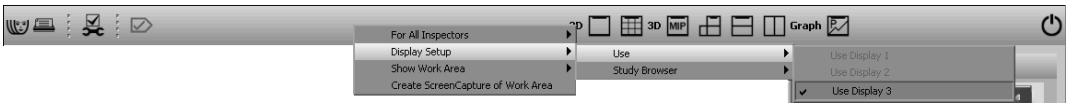
This chapter provides information on enabling a second Multimodality monitor, importing and editing DICOM image preparation configuration, configuring key functions, and setting up a printer.

3.1. Enabling a Second Multimodality Monitor

This section applies to sites using a second monitor for the Multimodality Option.

1 Log into the application as **service**.

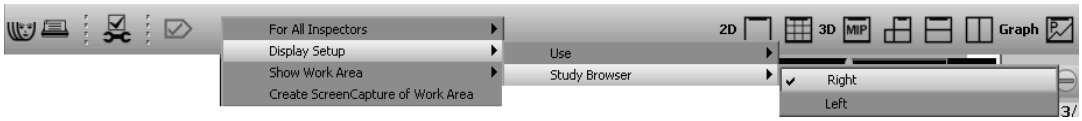
2 On the Multimodality (MM) viewer, right-click the Application toolbar and point to **Display Setup** > **Use**, then select **Use Display *n*** (where *n* is the identity of the second Multimodality monitor).



Display Setup > Use > Use Display Toolbar

3 Set the Study Browser to reduce the travel distance of the pointer when navigating between the MG and MM viewers. The recommended side for the Study Browser is the side where the MG viewer monitors are situated, relative to the MM viewer monitors.

4 On the MM viewer, right-click the Application toolbar and point to **Display Setup** > **Study Browser**, then select **Right** or **Left**.



Display Setup > Study Browser > Right or Left Toolbar

5 Log out of the application.

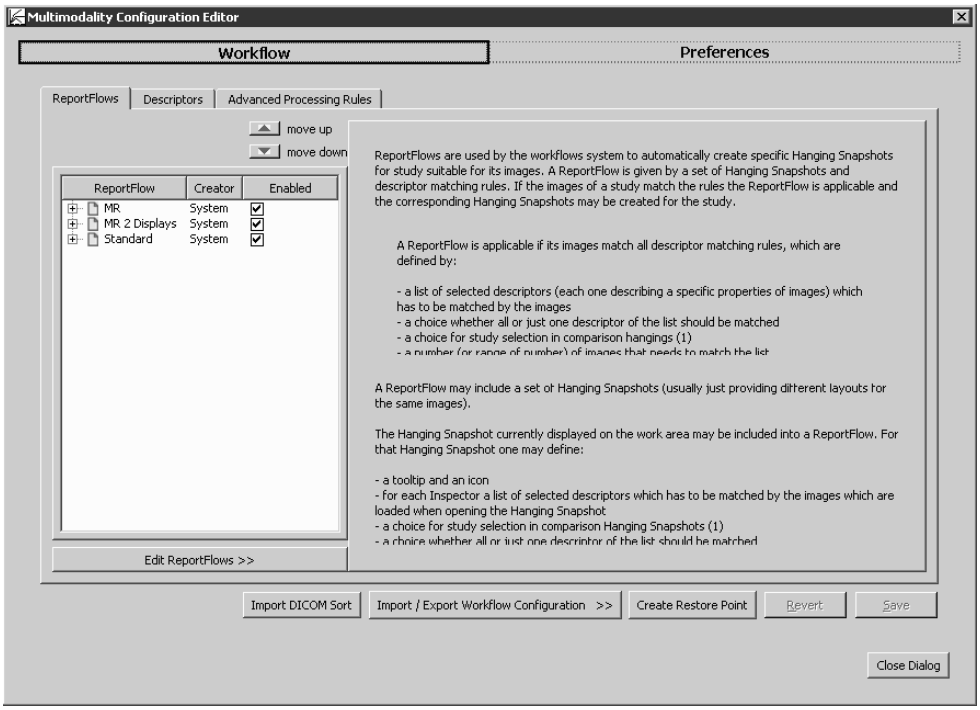
6 For each application user, log in and perform steps 2 and 3.

⚠ ***Note:*** *If user is a radiologist and/or technologist, you will need to open a patient for review to display the MM viewer.*

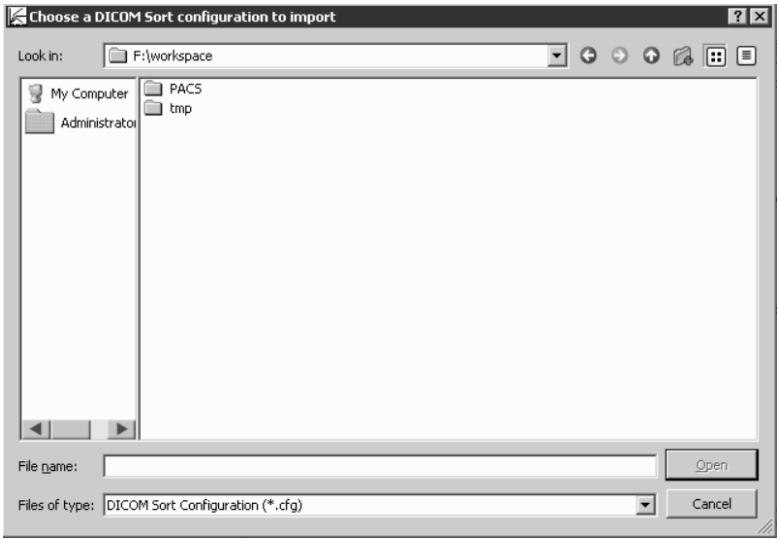
3.2. Importing DICOM Image Preparation Configuration

The Multimodality viewer is provided with a configuration file that controls the preparation and sorting of incoming DICOM images into 2D, 3D, or 4D image sets to be reviewed within the MM viewer. The default parameters should be sufficient for the majority of Multimodality customers. If needed, the service engineer is authorized to make a copy of the default configuration file, edit the parameters and import the new configuration file as described below. The configuration file should be edited with the required changes prior to importing, using **3.3. Editing DICOM Image Preparation Configuration** as a guideline.

1 On the Application toolbar, select **Multimodality Configuration**  (or press [Alt]+ [Shift] + [W]). The Multimodality Configuration Editor window appears. Select **Workflow**. The Workflow window appears.



2 Select the **ReportFlows** tab and then **Import DICOM Sort**. The Choose a DICOM Sort configuration to import window appears.



3 Navigate to **E:\SecurView\MAP** and locate the default **sortPart.cfg** file or a modified copy of that file.

4 Select the file and select **Open**.

In a multiworkstation environment, you must log off and log on again to activate the imported settings. (This step can be performed on either the Manager or Client – in either case, the settings will be activated.)

3.3. Editing DICOM Image Preparation Configuration

3.3.1. Sorting Incoming DICOM Images

The purpose of the sortPart.cfg file is to enable you to configure the preparation and sorting of incoming DICOM images into 2D, 3D, or 4D image sets for review in the Multimodality viewer.

If you plan to edit the file, do not edit the original sortPart.cfg. Make a copy of the original sortPart.cfg and give it a distinctive name. After making the changes to the distinctively named copy, store the file in the MAP folder and also in another location that will not be affected by software upgrades or computer replacement. The configuration file may be edited via Notepad:

```
(
{Element = '(0008,0060)'; Name = Modality; Sort = 1; Part = 1; },
{Element = '(0008,0020)'; Name = StudyDate; Sort = 1; Part = 1; },
{Element = '(0008,0030)'; Name = StudyTime; Sort = 0; Part = 0; },
{Element = '(0020,0052)'; Name = FrameOfReferenceUID; Sort = 0; Part = 0;
},
{Element = '(0008,0008)'; Name = ImageType; Sort = 0; Part = 0; },
{Element = '(0020,0011)'; Name = SeriesNumber; Sort = 0; Part = 0; },
{Element = '(0008,0021)'; Name = SeriesDate; Sort = 1; Part = 0; },
{Element = '(0008,0031)'; Name = SeriesTime; Sort = 1; Part = 0; },
…
```

3.3.2. Sort/Part Entry Syntax

Each line is related to a DICOM tag that can be used for sorting and partitioning in the following form:

```
<key> = <value>;
```

Table 3-1: Supported sortPart.cfg Keys

Key	Definition
Element	The DICOM tag number in the form (xxxx,xxxx) where *x* is a hexadecimal digit.
Name	The name of the DICOM tag (e.g., ContentDate). At least one of the Element and Name tags must be present to identify the DICOM tag.
Sort	If Sort = 1, the images are sorted by the given tag in the order they appear in this file. If Sort = 0, the tag is not used.
Part	If Sort and Part are 1, this tag is used as a partition criteria (e.g., if images differ in the contents of the given tag, they are put in different image sets).
SortCondition	This contains a string with an additional condition that must evaluate to true for the sorting to take place (in addition to having Sort = 1). If the condition evaluates to false, no sorting or partitioning is done for the given tag.
PartCondition	This contains a string with an additional condition that must evaluate to true for the partitioning to take place (in addition to having Sort = 1 and Part = 1); for example 'Modality = CR'.
Tolerance	A float number that describes the maximum absolute difference between two numerical values to consider them equal (defaults to 0). This can be used to soften some partitioning conditions, based on numerical values; for example Echo Time.

3.3.3. DICOM Tag Conditions Syntax

A DICOM tag condition (SortCondition, PartCondition) can be used as:

- A sort condition in the sortPart.cfg file
- A partition condition in the sortPart.cfg file
- A condition for creating 2D+T images in the config entry PreProcessing_Force2DPlusTCondition

A DICOM tag condition consists of an expression (conditional preprocessing). An expression can be:

`<tagid> <operator> <value>`

`exists <tagid> : unary operator checks for the existence of a tag`

`<expression> | <expression> : The '|' (or '||') binary operator links two expressions with a logical 'OR'`

`<expression> & <expression> : The '&' (or '&&') binary operator links two expressions with a logical 'AND'`

`!<expression> : The '!' operator represents a logical 'NOT' operator and inverts the meaning of the expression. The '!' operator will always have a higher priority and negate the following <expression> or (<expression>)`

`(<expression>) : The parentheses can be used to change the precedence of expressions; if not used, expressions are evaluated from left to right (no preference of AND!)`

A tagid can look like the following:

`(####,####)`

`(####,####)[index]`

Where '`#`' is a hexadecimal digit, index is the decimal index of the tag (for tags with VM > 1).

⚠ ***Note:*** *It is not possible to use DICOM tags that are part of sequences. It is also not possible to use private DICOM tags.*

The operators can be:

`=` for strings: case-insensitive check for equality, otherwise check for equality

`==` for strings: case-sensitive check for equality, otherwise the same as `=`

like only for strings: case-insensitive substring check (the like operator is not used like in SQL statements: the usage of wildcards is not possible, it will be checked for any occurrence of the given string in the value of the appropriate DICOM tag)

`<, <=, >=, >, !=` the usual arithmetic operators (do not use for strings)

Examples

'Sort and Partition on SliceThickness only if the SeriesDescription is not like MIP'. This fixed a problem with different slice thicknesses within a MIP series, generated from a modality, which were partitioned on SliceThickness.

```
{
SortCondition = "! SeriesDescription like mip";
Element = "(0018,0050)";
Name = SliceThickness;
Part = 1;
Sort = 1;
},
```

'Partition on SOPInstanceUID if the Modality is like CR'. This will create a single Image Set for each image. This is the expected behavior for the mentioned Modality.

```
{
PartCondition = "Modality = CR";
Element = "(0008,0018)";
Name = SOPInstanceUID;
Part = 1;
Sort = 1;
}
```

'Partition on Repetition Time if the difference between 2 values is more than 0.1 ms'. This fixed a problem that the pre-contrast image was not included because the Repetition time was different, but only by about 0.02 milliseconds (10.82 vs. 10.89).

```
{
Element = "(0018,0080)";
Name = RepetitionTime;
Part = 1;
Sort = 1;
Tolerance=0.1
}
```

Configuration entries used for preprocessing

The following entries also may change the results of the preprocessing:

- **PreProcessing_Delay**: The minimum time in seconds after the last image of a given study arrives before preprocessing is triggered
- **PreProcessing_DistTolerancePercent**: The maximum difference between 2 slice distances in percents that does not split up a 3D volume
- **PreProcessing_DistToleranceTenthMM**: Absolute tolerance in tenth mm, added to the previous value to decide if a volume is homogeneous
- **PreProcessing_MinimumImagesInVolume**: The minimum number of images that have to be contained in a homogeneous volume
- **PreProcessing_Force2DPlusTCondition**: A DICOM tag condition string; if evaluates to true for the first image in an Image Set, a 2D+T image set will be created (instead of a 3D or inhomogeneous image)

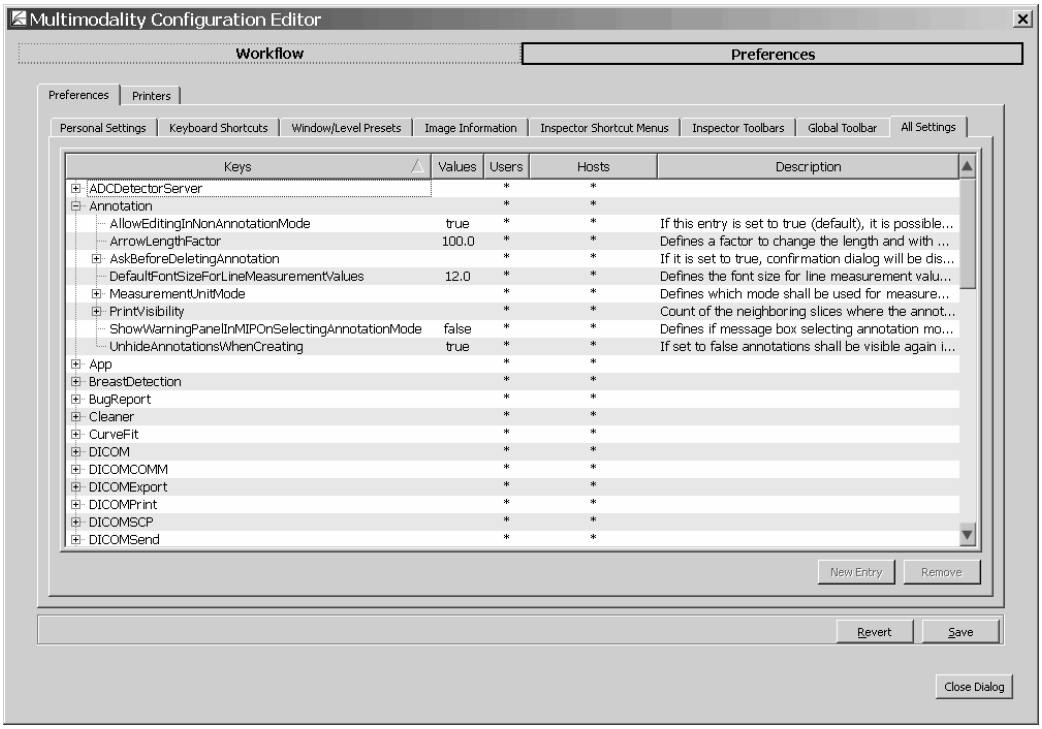
3.4. Configuring Key Settings

On the Application toolbar, select **Multimodality Configuration** (or press [Alt]+ [Shift] + [W]). The Multimodality Configuration Editor window appears. Select **Preferences**.

The Preferences > All Settings window lists all keys and key settings (e.g. functions and values, assigned users, hosts) and provides a description. The default keys should be sufficient for the majority of customers.

- Select **+** to expand the list items.
- Select **-** to collapse the list items.

The keys are displayed with their key settings and description. If the description is too long, point to the entry to see a tooltip containing the complete text line.



3.4.1. Add Key Settings

You can add key settings to an existing key.

1 Navigate to the **Preferences** > **All Settings** window.

2 To view the key settings, expand a key (see Annotation in the above screenshot) to view the values and settings.

3 Locate and select the key setting (e.g., MeasurementUnitMode) that you want to edit. Select **New Entry** to insert a copy of this key setting.

4 Double-click the **Values** cell to view a drop-down or edit field. You can then select or enter the desired value (e.g., 

).

⚠ ***Note:*** *You cannot edit the description.*

5 Select **Save** to save your settings.

3.4.2. Remove Key Settings

This button is available only for user-entered key settings.

1 Select a new entry that is marked as a sub-item (2nd level). This entry often has an individual user and/or host.

2 Select **Remove** to remove this item.

3 Select **Save** to save your settings.

3.5. Setting Up a Printer

On the Application toolbar, select **Multimodality Configuration** (or press [Alt]+ [Shift] + [W]). The Multimodality Configuration Editor window appears. Select **Preferences**, then **Printers**.

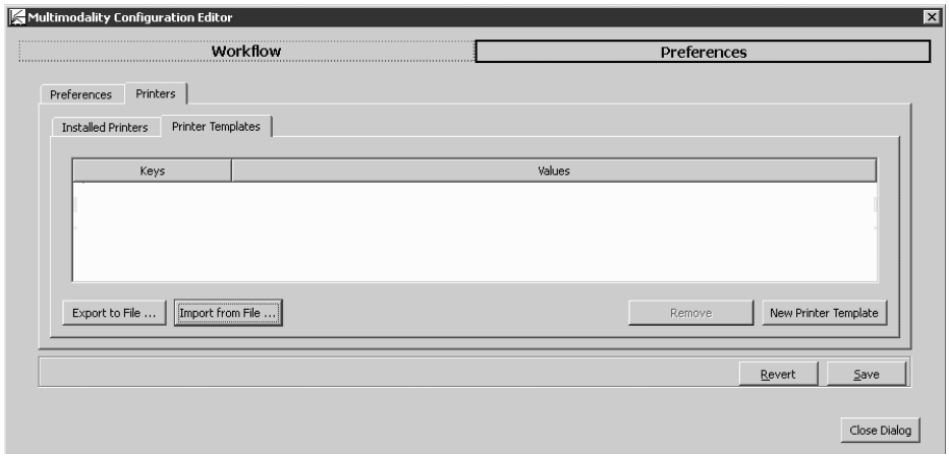
The setup procedure for a printer is based on a printer template that must first be installed and then adapted. The Multimodality viewer is delivered with some printer templates that may be configured by service engineers.

3.5.1. Installing Printer Templates

1 Navigate to the **Printers** > **Installed Printers** window.

2 Check if any printers are listed in the **Installed Printers** tab. Check if any templates are listed in the **Printer Templates** tab. If this page is empty, you must first install an initial printer template.

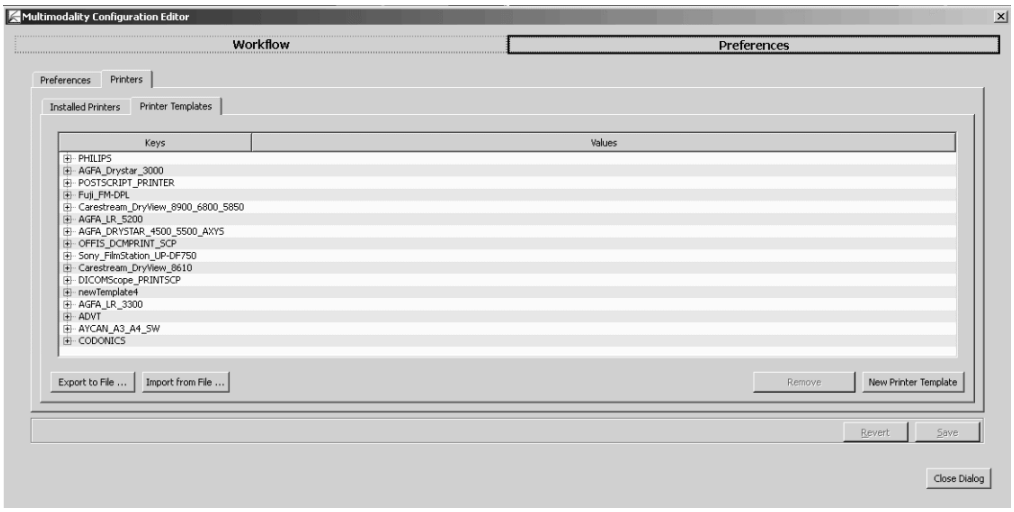
3 Select the **Printer Templates** tab. The Printers > Printer Templates window appears.



4 Select **Import from File**. The Select File to Import window appears.

5 Navigate to **E:\SecurView\MAP** and locate the **printerTemplates.txt** file.

6 Select the file and select **Open**. The Printers > Printer Templates window is now populated with the various printer templates.



Printer Templates 8.1.gif

⚠ ***Note:*** *In the Printer Templates tab, some templates for different vendors and different printers are listed, including a POSTSCRIPT_PRINTER. Printer templates can be edited after they have been imported.*

⚠ ***Note:*** *When MM printer templates are imported, they will not overwrite existing templates with the same name. It is best to close and reopen the MM configuration editor after importing new MM printer templates so the settings display correctly. The import tool fills in default values for several settings that were not in the MM printer templates file.*

⚠ ***Note:*** *After a SecurView upgrade, the existing MM printer configuration settings are preserved. If there are new or updated MM printer templates available with the latest SecurView version, they must be loaded manually.*

7 Select **Save** to save your settings.

3.5.2. Editing Printer Templates

You can an edit an existing or new printer template and its key values.

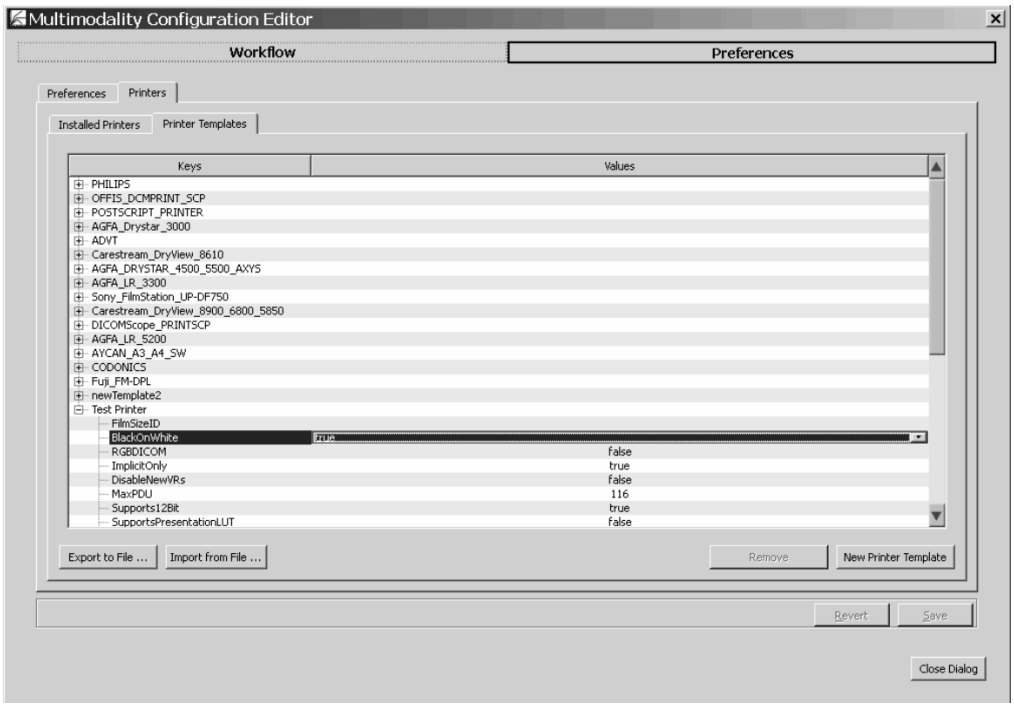
1 Navigate to the **Printers** > **Printer Templates** window.

2 To create a new printer template, select **New Printer Template**. A new printer template (⊞ newTemplate1) will be appended at the end of the list.

3 Double-click the template name (e.g., newTemplate1). The name of the printer template is now in edit mode. Enter a unique name for the printer template.

4 To change the key values of the printer template, first expand the printer name (see Test Printer in the screenshot below). Locate the key value (see BlackOnWhite value in the screenshot below) that you want to edit.

5 Double-click the key value. The selected value field is now in edit mode. (See 'true' value in the screenshot below).



Printer Template Edit True.gif

6 Select a value from the drop-down menu or enter a new value.

⚠ ***Note:*** *The following keys are available but not supported by the current Multimodality viewer, so their values if set will be ignored: RGBDICOM, PresentationLUTinFilmSession, PresentationLUTMatchRequired, PresentationLUTPreferSCPRendering.*

⚠ ***Note:*** *It is not possible to configure a value to send for Configuration Information (2010,0150). It is recommended to set MinDensity and MaxDensity key values according to customer and printer vendor preference for printing multimodality images (e.g., US, MR).*

⚠ ***Note:*** *Use of the Presentation LUT SOP Class is supported by setting SupportsPresentationLUT to true. Presentation LUT Shape is set to IDENTITY, Illumination is set to 2000 and Reflected Ambient Light is set to 10. These values are not configurable.*

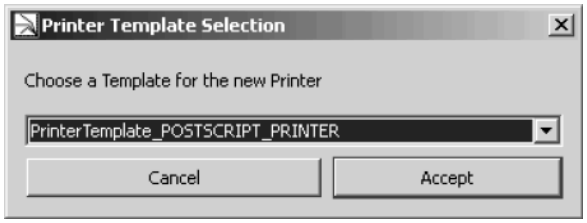
7 Select **Save** to save the new settings.

3.5.3. Installing a Paper Printer

Paper printers are generally used to print images on paper whereas DICOM printers are used to print images on film based on the DICOM Print Management service classes.

1 Navigate to the **Printers** > **Installed Printers** window.

2 Select **New Printer**. The Printer Template Selection window appears.



3 In the Choose a Template for the new Printer drop-down list, select **PrinterTemplate_POSTSCRIPT_PRINTER**.

4 Select **Accept** to close the dialog.

5 In the list of installed printers, expand the selected printer template. In the following Keys entries, double-click the right column (Values) to edit and enter the following values.

- **FilmSizeID** keys item. Select **Letter**, **A4**, **A3**, or **A4\A3**.
- **BlackOnWhite** keys item. Select **true**.
- **MaxPDU** keys item. Select **0**. This value is needed to distinguish paper printers from DICOM printers.
- **host** keys item. Type the name or the IP address of the SecurView system.
- **printTarget** keys item. Select the name of the printer to be installed.

6 Select **Save** and **Close Dialog**.

3.5.4. Installing a DICOM Printer

DICOM printers are used to print images based on the DICOM Print Management service classes.

1. Navigate to the **Printers** > **Installed Printers** window.
2. Select **New Printer**. The Printer Template Selection window appears.
3. Select the appropriate printer template.
4. Select **Accept** to close the dialog.
5. In the list of installed printers, expand the selected printer template. In the following Keys entries, double-click the right column (Values) to edit and enter the following values.
   - **AET** keys item. Type the AET of the selected printer (e.g., DS4500).
   - **callingAET** keys item. Type the AE Title or the IP address of the SecurView (Manager or Standalone).
   - **host** keys item. Type the name or the IP address of the DICOM printer's host.
   - **port** keys item. Type '104' or the port number used by the DICOM printer's host, if different than 104.
   - **defaultFilmSizeID** keys item. Select the film size specified by the customer.
   - **defaultMediumType** keys item. Select the type specified by the customer (e.g., BLUEFILM).
   - **defaultMagnificationType** keys item. Select **NONE**.
6. Select **Save** and **Close Dialog**.

3.5.5. Testing Installed Printers

When you have set all necessary values according to the currently connected printer, you should test the connectivity.

1. Navigate to the **Printers** > **Installed Printers** window.
2. Select the desired printer.
3. Select **DICOM Test**. A Printer Test dialog informs you about the test result.

3.5.6. Exporting Printer Templates

You can export all printer templates at once to a file. On the **Printer Templates** tab, select **Export to File....** A standard dialog opens where you can select the path and filename.

⚠ ***Note:*** *Exported MM printer templates will not match the original MM printer template file because the importing tool adds some default settings.*

⚠ ***Note:*** *No file extension will be added. To specify your export file according to the content, you should append '.txt'.*

The file is stored and may be edited, copied or used for import purposes on other workstations. The exported template file is formatted as follows:

```
[OFFIS_DCMPRINT_SCP]
FilmSizeID = A4\LETTER\8INX10IN\11INX14IN
BlackOnWhite = false
RGBDICOM = false
ImplicitOnly = true
DisableNewVRs = true
...
```

Each key is followed by '=' and a list of all possible values. Type '#' at the beginning of a line for comments.

HOLOGIC®

Hologic Inc.
36 Apple Ridge Road
Danbury, CT 06810 USA
1.800.447.1856
www.hologic.com

Australia / New Zealand
Hologic (Australia) Pty Ltd.
Suite 402, Level 3
2 Lyon Park Road
Macquarie Park NSW 2113
Australia

Asia Pacific
Hologic Hong Kong, Inc.
7th Floor, Biotech Centre 2
No. 11 Science Park West Avenue
Hong Kong Science Park
Shatin, New Territories
Hong Kong

Refer to the corporate website for more facilities worldwide.

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