

Exa® PACS/RIS

Feature Summary

Non-Mammo DMs

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With the viewer's display management functions, you can create and manage highly customized "DMs." The term DM refers to display management in general, or to an implementation of a hanging protocol. DMs help the radiologist always see the same image/series in the same position. In Exa PACS/RIS, the preferred way to build DMs is by using the series description. To work best, this must be unique to the specific series. Other DICOM information can be used in varying situations, such as modality type.

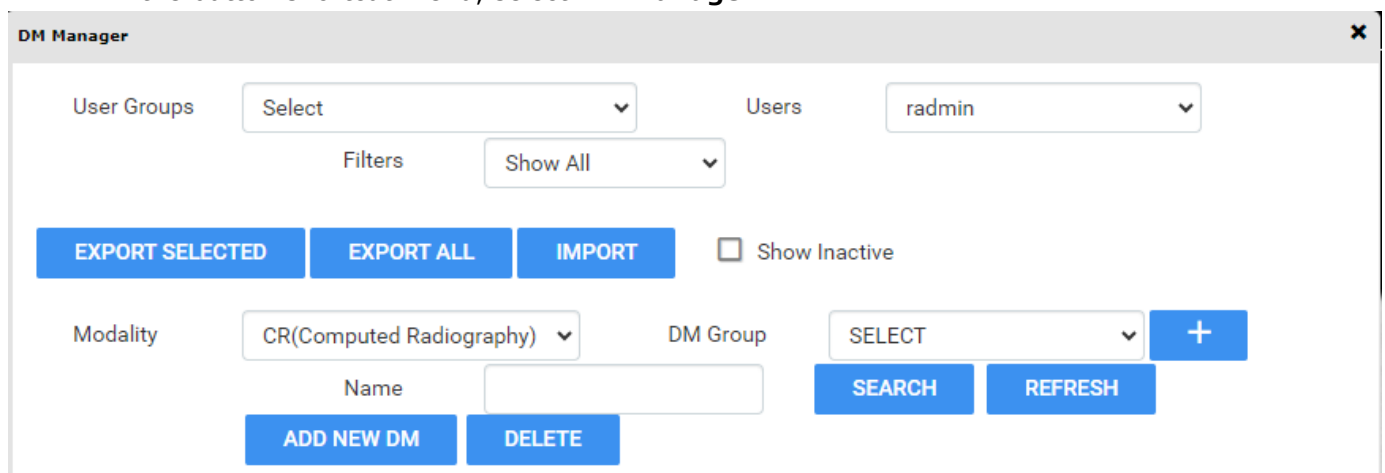
There are two ways to create DMs. This first is to drag the images/series to cells and then select DM SAVE. Use this method when there is uniformity with the series description. For example, when the XRAY CHEST series descriptions are **always** PA CHEST and LATERAL CHEST. If there is any variation, this method will not always work. The second method is to manually build them using AND/OR logic and add general rules and groups.

First, configure the user's viewer settings so that the DMs work properly (see page 143 of the Exa PACS/RIS version 1.4.27 user's manual). An excerpt is included at the end of this document.

Navigate in DM Manager

To open DM Manger:

1. On the viewer toolbar, select the display manager  button.
2. In the button shortcut menu, select **DM Manager**.



EXPORT SELECTED: Export the selected DMs (select by checking the box).

EXPORT ALL: Export all DMs in the system for all users.

IMPORT: Import previously exported DMs (.json files).







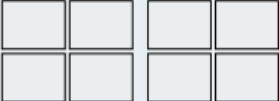





MODALITY: Select the modality you want to review.

DM GROUP: Group your DMs for same-modality exams where many DMs will match. Select the + button to add a new group. Example: Screening vs Diagnostic DM's (Hanging protocols).

NAME: Search for a DM within its modality.


ADD NEW DM: Create a new DM.

DELETE: Delete a DM.

<input type="checkbox"/>	Name ▼	Pages	Summary ▼	Availability	Owner	Preview
<input type="checkbox"/>	MR TEST	2	MR,SC	Private		     
<input type="checkbox"/>	Name ▼	Pages	Summary ▼	Availability	Owner	Preview
<input type="checkbox"/>	MR TEST	2	MR,SC	Global	JRAD	     


Checkbox: Select the DM to export.

Availability: Private DMs are only available to the user that created it. Global DMs are available to all users.

Add to DM Group  : Add the DM to a DM Group.


Edit Icon  : Edit a DM.

Delete Icon  : Delete a DM.

Duplicate Icon  : Duplicate a DM.

Copy Icon  : Copy the DM to another user or group.


Create a DM using DM SAVE

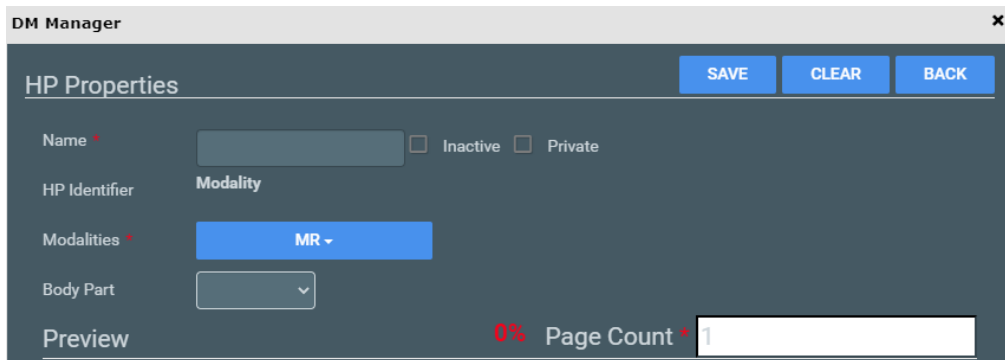
1. Find a study on the worklist that you want to build a DM for and open it in the viewer.
2. Select your preferred layout.
3. Drag images/series into preferred cells
4. On the viewer toolbar, click the display manager button. 
5. Select **DM SAVE**.
6. Type a name for the DM.

If using this method we strongly recommend to open the DM Manager and review the logic and edit as needed.

Note: When using DM SAVE information must match 100%

Create a DM manually

1. Find a study on the worklist that you want to build a DM for and open in the viewer.
2. On the viewer toolbar, select the display manager button. 
3. In the button shortcut menu, select **DM Manager**.
4. In the DM Manager dialog box, select **ADD NEW DM**.
5. In the second DM Manager dialog box, enter the following settings.



- Name – Type a name for the DM.
 - Inactive – Optional: Select to disable the DM until ready for use.
 - Private – Optional: Select to make the DM available only to you.
 - Modalities – Select one or more modalities to which the DM applies.
 - Body Part – Optional: Prevents all but the selected body part to display. To display any body part, leave blank. *The body part must be sent from modality.
 - Page Count – The number of monitors that the DM uses to display images.
6. Under **Preview**, in the upper-left corner of the frame, click 1*1 and select a cell layout.
 - Note: This determines the layout of study-level series/images in the monitor.
 - Optional. Click 1*1 in of the cells, and click a series layout. Note: This determines the layout of series-level images within a cell.
 - Optional. To allow missing cells, or missing images/series, in the upper-right corner of a page or cell, select the check box.

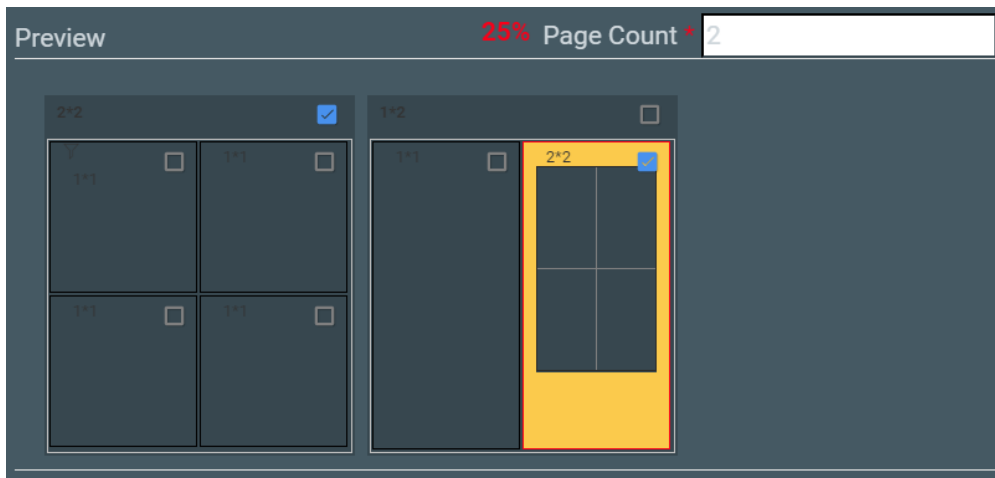
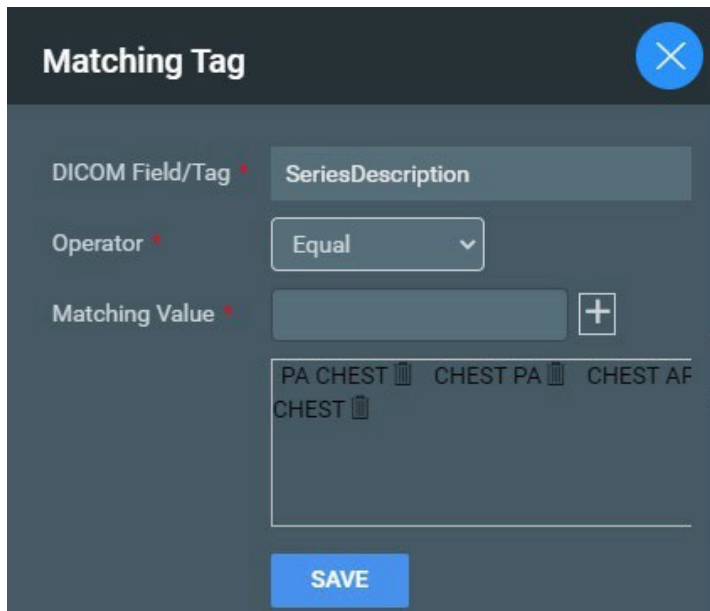


Figure. In this example, 2 pages (monitors) are configured, with 4 and 2 cells added to each page, respectively. On the first page, Allow Missing Cells is selected at the page level, which means that either the all cells can be blank or the image /series doesn't have to match. On the second page, the study will hang if images for the right cell are missing, but not if they are missing in any other cells. The left cell is selected for adding a matching rule group and/or matching rule. Because the validation percentage is not yet 100%, matching rules must be added.

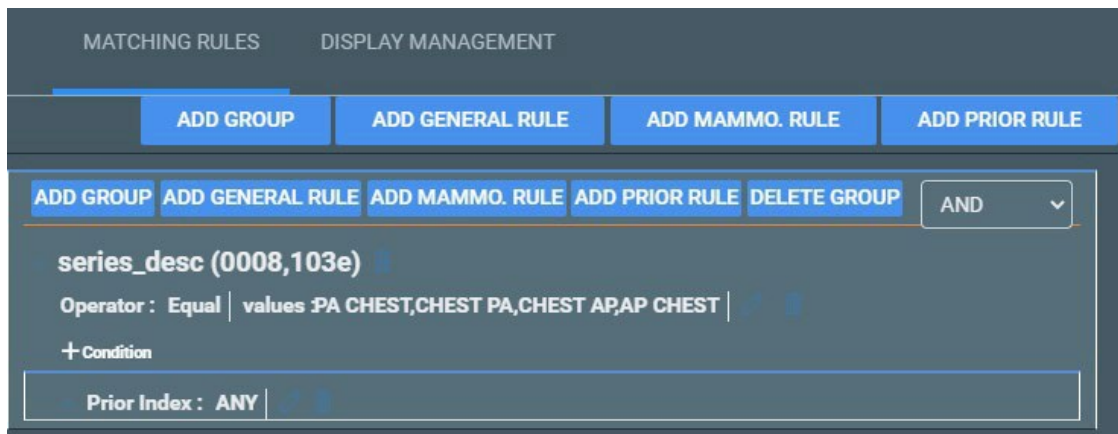
Add matching rules



1. Under **Preview**, select a cell.
2. Select **ADD GROUP**.
3. Select **ADD GENERAL RULE**.
4. Type the DICOM field/tag.
Series description is the most common and effective.
5. Choose the operator (such as equals, contains, starts with, or ends with).
6. Choose matching values.
You can have several matching values as seen below.
7. Select **Save**.



8. When your rule is added you have an option to add another rule if needed. If you add another rule you then needed to decide to use AND or OR Logic. EXAMPLE PRIOR RULE.
9. If you are finished, move on to the next cell.



Display Management Tab

Next to the MATCHING RULES tab there is a DISPLAY MANAGEMENT tab. This tab is available for each cell to automatically apply additional processing.

*Auto Fusion- future functionality not yet available.

Auto-Orient (Blank to Disable): **Right Edge** **Bottom Edge** LUT

Rotation (Clockwise) Mirror Bone Enhance

View (Zoom) Window/Level Default

Invert Sigmoid Linear CLAHE Fusion Custom

CAD Current MG Only Reprocess

Setting	Description
Auto-Orient	[Unused]
Rotation	Select a degree of clockwise rotation.
Mirror	Select to switch the left and right breast view.
View	Select a zoom type.
Invert Sigmoid Linear CLAHE Fusion CAD Current MG Only	Select one or more processing functions to apply. Exempts the current cell from the Stack by View and Prior option.
CAD	Select to display CAD values according to the SR CAD settings when the user reaches this step of the hanging protocol.
LUT	Select an LUT to apply.
Bone Enhance	Select a percentage of bone enhancement.
Window/Level	Select Default or Custom. If Custom, type the values to apply.
Reprocess	Select to generate an additional view from the base view.

More about prior rules

When selecting the PRIOR RULE, you have to select the Study Index. Your options are ANY, 1, 2, 3, and so on.

- ANY means to open any available prior that matches
- 1 means open Prior #1
- 2 means open Prior #2, and so on.

If you use priors in your DMs make sure your prior settings are set in the MODALITY options under VIEWER SETTINGS. More on that below.

Configure viewer settings for DMs (see the Exa PACS/RIS user's manual version 1.4.32_P2, starting on page 160)

Before working with DMs, configure the relevant settings described in the following sections in this manual.

- Configure modality-specific viewing options
- Configure mammography
- Set up connected displays

Next, configure viewer settings as follows.

1. In the **Viewer Options** dialog box, on the left pane, select **MODALITY OPTIONS**.
2. In the list of modalities, select a modality that you work with.
3. To turn on DMs, in the settings area, under **Options**, select the following check boxes.
 - Auto Hang DM
 - DM Allow Missing Cell
 - Auto Hang Priors
4. To view priors, under **Prior Options**, configure the following.
 - Select the **Auto Open Prior** check box.
 - In the **Auto Open Prior Count** list, select the maximum number of priors to open at once.
5. Select **SAVE**.
6. Repeat for each modality that you work with.