# Patch 149
# VI Display Printing Issues
# Patch Description

## VistA Imaging
## MAG*3.0*149
## November 2014

Department of Veterans Affairs
Office of Enterprise Development
Health Provider Systems

**MAG*3.0*149 Patch Descriptions**
**November 2014**

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VistA Imaging Office of Enterprise Development
Department of Veterans Affairs
Internet: http://www.va.gov/imaging
VA SharePoint: http://go.va.gov/VistAImaging

Revision Table

| Rev | Date | Notes |
|-----|------|-------|
| 1.0 | 22-April-2014 | Initial draft, Garrett Kirin |
| 1.1 | 20-April-2014 | Update, Garrett Kirin |
| 1.2 | 25-April-2014 | Update, Garrett Kirin |
| 1.3 | 29-April-2014 | Update, Garrett Kirin. Wording changed in GUI. New graphics of application. |
| 1.4 | 20-August-2014 | Update, Garrett – T3 MUSE changes. |
| 1.5 | 15-September-2014 | Edits prior to IOC Part 1 delivery, Stacey Marner |
| 1.6 | 21-November-2014 | Updated checksums and document date (cover and footers), Stacey Marner |

# Contents

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# Patch 149 Overview

MAG*3.0*149 solves several issues with the VistA Imaging Clinical Display client and GE MUSE interface. It repairs the issue of PDF files being printed blurry and unclear. Menu items that had been reported by some users to be confusing have been reworded. The issue of only 19 MUSE EKGs being viewable is fixed so that all available patient EKGs will be viewable. It also addresses an install issue where the MUSE directory was not in the system path, resulting in errors when selecting the MUSE EKG button.

The features and fixes of MAG*3.0*149 are summarized below:

## Distribution of Software

To obtain MAG*3.0*149 files, use File Transfer Protocol (FTP) to retrieve MAG3_0P149.KID and other files from one of the following OI Field Offices' ANONYMOUS.SOFTWARE directories:

| OI Field Office | FTP Address | Directory |
|---|---|---|
| Albany | ftp.fo-albany.med.va.gov | anonymous.software |
| Hines | ftp.fo-hines.med.va.gov | anonymous.software |
| Salt Lake City | ftp.fo-slc.med.va.gov | anonymous.software |

| File Name | Description |
|---|---|
| MAG3_0P149.KID | KIDS build for Patch 149 |
| MAG3_0P149_Clinical_Display_Install.msi | Client application installation file |
| MAG3_0P149_Clinical_Display_Setup.exe | Client application setup file |

**NOTE:** Any late-breaking news about this patch will be found in a readme file.

### Patch Contents

This patch includes software and documentation files.

### Software

- MAG3_0P149.KID – KIDS (Kernel Installation and Distribution System) package to be installed on the VistA System

- MAG3_0P149_CLINICAL_DISPLAY_SETUP.EXE

- MAG3_0P149_CLINICAL_DISPLAY_INSTALL.MSI

**Documentation**

This document, MAG3_0P149_Patch_Description.pdf provides an overview, explains the changes, and outlines the installation for this patch.

**Associated Patches**

Before MAG*3.0*149 can be installed, the following considerations need to be made:
- It must be installed after MAG*3.0*131.
- Patch MAG*3.0*138 MAY NOT be installed.

**Test Sites**

The following sites are test sites for this patch:

- Columbus, OH

- Saginaw, MI

- VISN 15, Western Orbit

- Wilkes-Barre, PA

- West Haven, CT

# Remedy Calls

The following Remedy help desk calls are addressed in this patch:

Menu Item naming change:

- 425942 Change naming of Menu Items

Printing issues:

- 936306 Printing DICOM PDF produces fuzzy image

- 952588 Quality Problems printing PDFs

- 960776 Inconsistent blurred printouts

- 968470 Quality Printing Issue.

- 987145 Print Optometry (the characters become unreadable)
- 996221 Display gets blurry after trying to print ophthalmology
- 1010387  Blurry Print of PDF
- 1014165 Printing PDF

MUSE (Multi-User Simulation Environment) issues:
- 965459 MUSE/EKG 19 limit issue
- 966030 MUSE Connection error
- 1002502 MUSE directory not in system path
- 1014643 MUSE/EKG 19 limit issue
- 1016469 MUSE/EKG 19 limit issue
- 1018844 MUSE/EKG 19 limit issue
- 1036257 MUSE/EKG 19 limit issue
- 1038158 MUSE/EKG 19 limit issue
- 1041947 MUSE/EKG 19 limit issue
- 1042666 MUSE/EKG 19 limit issue

## NSRs
There are no new service requests addressed in this patch.

## Patient Safety Issues
There are no patient safety issues associated with this patch.

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# Patch 149 Changes

## Menu Option Summary

Contained within the Clinical Display application, there are menu options on the Image List window that give the user the ability to change the "Controlled" status of an Image. Controlled images are images that may be of a sensitive nature. Controlled images open in the same way as other images. The difference is that the image list entry for controlled images has a warning icon and the abstract (thumbnail) for the image has a warning symbol rather than a small representation of the image.

### Issue Summary

Some users are confused by the current wording of the menu items and feel the wording is not intuitive.

### Solution

The "True" and "False" words are taken out of the menu options and replaced with the descriptive text associated with the Controlled status.

The wording of the menu options will be changed.
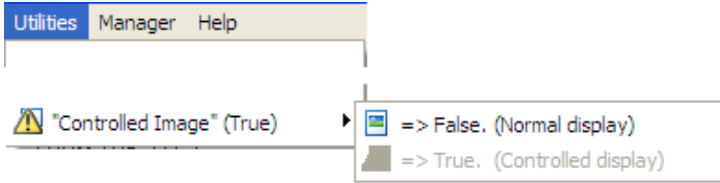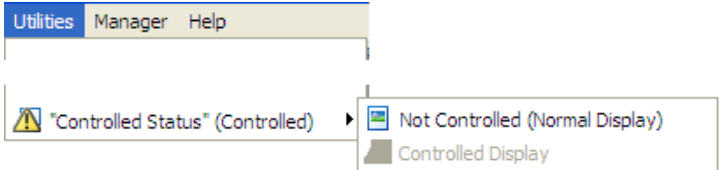From :
    => False (Normal Display)
    => True (Controlled Display)

To:
    Not Controlled (Normal Display)
    Controlled Display

An example is provided in the figure below comparing the previous window to the current window.

| | |
|---|---|
| Previous | Utilities  Manager  Help<br><br>⚠ "Controlled Image" (True)  ▸  🖼 => False. (Normal display)<br>▫ => True. (Controlled display) |
| MAG*3.0*149 | Utilities  Manager  Help<br><br>⚠ "Controlled Status" (Controlled)  ▸  🖼 Not Controlled (Normal Display)<br>▫ Controlled Display |

## Print Function Summary

In Clinical Display, images had always been printed the same way (referred to as "normal") until MAG*3.0*131. In MAG*3.0*131, PDF images were rasterized before printing. Rasterization is used to convert vector graphics that are part of an image into **a bitmap representation** of the graphic. This is necessary in situations where annotations are being printed with the image.

### Issue Summary

Users have reported that some PDF images are fuzzy, blurry, or granular when printed. Also, the image being displayed in Clinical Display becomes blurry after printing.

### Issue Details

MAG*3.0*131 modified the Print Function of the VistA Imaging Display. The change was to rasterize all Adobe PDF documents before printing. The displayed image is rasterized and redisplayed and the newly displayed image is the source of the printed image.

In some Adobe PDF documents that have graphic data, the rasterization of the graphic causes the image to be granulated (fuzzy). The fuzziness is apparent on both the displayed image and the printed image. Sites report that the same images printed adequately in the previous Clinical Display client, MAG*3.0*122.

### Solution

The solution is two parts.

First, the print function was changed back to the design of MAG*3.0*122.  This will print all images normal as they were printed in MAG*3.0*122.

Second, introduce a Print Options window.  This window gives users the ability to view the image in normal mode and convert it to bitmap.  The user can view the image in both modes and select the best mode for printing.

**VistA Imaging Display Client Changes (VI Display)**
In the Imaging Display Client, the print function is changed back to the design of MAG*3.0*122.  When the print option is selected, images will be printed normally.

A new menu option will be available on the File menu of the Image List, Full Resolution, and Radiology Viewer windows.  The new option will be directly under the Image Print option.

**Image Print Options…**

The example below is from the Image List window File menu.
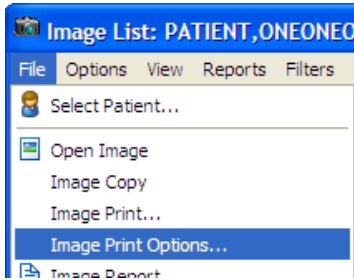


When the Image Print Options… menu option is selected, the Image Print Options window will open.  In the Image Print Options window, the image will be previewed (displayed) before being printed.  The user can select to view the image in Normal mode or convert it to bitmap (rasterized) mode.  After viewing the image as it will be printed, the user can then select the Print button to print the image.

**Image Print Options Window**

When the Image Print Options window is opened, the "normal" version of the image will be displayed in the Image box.  See the example below.
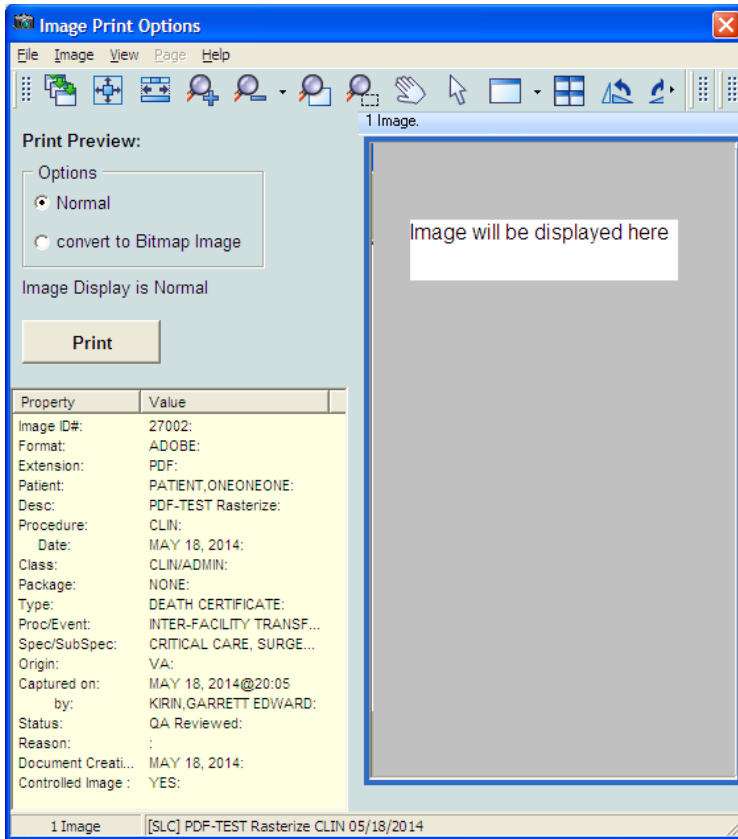
When "convert to Bitmap Image" is checked, a bitmap representation (rasterized version) of the image will be displayed.
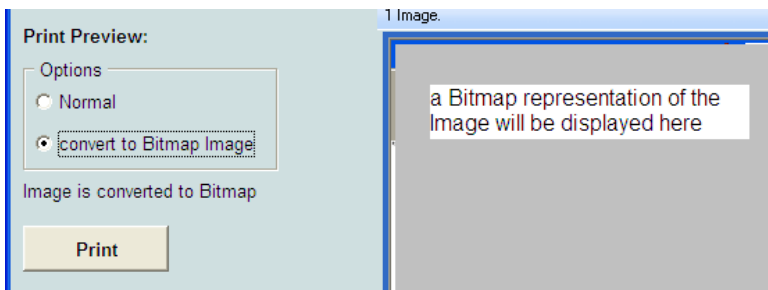


When the Print button is selected, the version of the image that is currently being displayed (normal or bitmap) will be printed.

The Image Print Options window will automatically close after the Print button is selected.

## MUSE/EKG Summary

### 19 EKG Limit

Imaging uses an API written by GE MUSE to access the MUSE/EKGs for a patient. A recent change in the API resulted in a maximum limit of 19 EKGs accessible for any patient.

The Imaging code that implements the API has been changed. The limit of 19 EKGs for any patient has been fixed. The user can again see all available MUSE/EKGs for a patient.

### MUSE Directory Not in System Path

When Imaging is installed on a workstation, the system path of the workstation is modified to include imaging subdirectories that include the MUSE Dynamic Link Library (DLL).

This subdirectory that includes the MUSE DLL was not being added to the system path. The absence of this subdirectory causes the following errors when the MUSE EKG button is clicked:

"No MUSE Servers available. Select a failed connection to see the error code."
"Invalid File:MUSEAPI.DLL. Call IRM to get an updated file."

This has been fixed.

## Supported Client Versions

When MAG*3.0*149 is released, the list of supported versions of Clinical Display will change:

| Supported Versions | No Longer Supported |
| --- | --- |
| MAG*3.0*149 | MAG*3.0*117 |
| MAG*3.0*131 | MAG*3.0*106 |
| MAG*3.0*122 | MAG*3.0*94 |

# VistA System Changes

## Routines

This section lists new and modified routines for the VistA System.  For each routine, the second line will contain the following information:

- ;;3.0;IMAGING;**[patch list]**;Aug 11, 2014;Build 8;Aug 14 2013

- CHECK1^XTSUMBLD is used to generate the checksums.

Please note that the "before" checksum may differ if any test software has been installed.

| Routine | Checksum Before | Checksum After | Patch List |
|---------|-----------------|----------------|------------|
| MAGIP149 | NEW | 4215025 | 149 |
| MAGGTU4D | 5508411 | 5109397 | **93, 94, 106, 117, 122, 131, 149** |

Routine MAGIP149 is a post-install routine and is deleted after the KIDS install.

## Data Dictionary
This patch does not modify any files or fields.

## Mail Groups
This patch contains no new or modified mail groups.

## Forms
This patch contains no new or modified forms.

## Security Keys
This patch contains no new or modified security keys.

## Remote Procedures
This patch contains no new remote procedure calls.

**Menu Options**

This patch contains no new menu options.

**Protocols**

This patch contains no new or modified protocols.

**Templates**

This patch contains no new or modified templates.

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# Installation

## Installation Planning

This patch is to be installed on the VistA System and on the client workstations. This patch must be installed by the compliance date to conform with VHA Directive 2001-023.

This patch may be loaded while VistA Imaging System is active. Installation for the KIDS will take less than one minute. Installation on the client workstation will take less than one minute.

## Installation Prerequisites

Before installing this patch, you will need to download the MAG*3.0*149 files from one of the OI Field Office's FTP servers. Verify that the patches listed in the section titled Associated Patches on Page 2 have been installed.

## VistA System (KIDS) Installation

### Installation Steps

1. Access the Kernel Installation and Distribution System Menu [XPD MAIN].
2. Run the Installation option [XPD INSTALLATION MENU].
3. Load the KIDS file by performing the following steps:
   a. Run the Load a Distribution [XPD LOAD DISTRIBUTION] option to load the KIDS distribution.

   b. When prompted, enter the path and file name (MAG3_0P149.KID) of the MAG*3.0*149 KIDS file that you downloaded from the Download Server.

   c. When prompted to continue with the load, enter "YES". A Distribution OK! message will be displayed when the load is complete.

4. After loading the KIDS file, use the following options to verify the contents of the patch. This is a good time to back up any affected routines.

a. Verify Checksums in Transport Global [XPD PRINT CHECKSUM] – Run this option if you want to ensure the integrity of the routines in the patch.

b. Compare Transport Global to Current System [XPD COMPARE TO SYSTEM] – Run this option if you want to view all changes that will be made when the patch is installed.  All components (routines, options, and so on) in the patch will be compared.

c. Back up a Transport Global [XPD BACKUP] – Run this option if you want to create a backup message of any routines exported with the patch.  The option will NOT back up any of the other changes.

5. After performing the load and any optional verification steps, install the KIDS file by performing the following steps:
   a. Run the Install Package(s) [XPD INSTALL BUILD] option.

   b. When prompted for the install name, enter MAG*3.0*149.

   c. Answer "NO" to the following prompts, if they appear:

```
Want KIDS to INHIBIT LOGONs during the install? No//NO

Want to DISABLE Scheduled Options, Menu Options, and Protocols? No/NO

Want KIDS to Rebuild Menu Trees Upon completion of Install? No//NO
```

6. When the installation has finished, an Install Completed message will be displayed.

## KIDS Installation Example

This example shows the output when the KIDS file is installed for the first time. If you have already installed the patch and are installing the KIDS file in a namespace on which it has previously been installed, your output may be different.

```
Select INSTALL NAME:  MAG*3.0*149  5/23/14@11:35:48
   => VistA Imaging V3 - Patch 149 - Print issues ;Created on May
23, 2014@

This Distribution was loaded on May 23, 2014@11:35:48 with header of
  VistA Imaging V3 - Patch 149 - Print issues ;Created on May 23,
2014@10:44:0
6
  It consisted of the following Install(s):
  MAG*3.0*149
```

```
Checking Install for Package MAG*3.0*149

Install Questions for MAG*3.0*149



Want KIDS to INHIBIT LOGONs during the install? NO//
Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//

Enter the Device you want to print the Install messages.
You can queue the install by enter a 'Q' at the device prompt.
Enter a '^' to abort the install.


        May 23, 2014@11:35:56

 Running Pre-Install Routine: PRE^MAGIP149

 Running Post-Install Routine: POS^MAGIP149

Post Install Mail Message: May 23, 2014@11:35:56

 Updating Routine file...

 Updating KIDS files...

 MAG*3.0*149 Installed.
        May 23, 2014@11:35:56

 Not a production UCI

 NO Install Message sent

Complete

Install Completed
```

## VI Clinical Display Installation

The Clinical Imaging Display client software can be updated using one of the methods outlined below:

- Manual installation

- Automatic installation using other methods (SCCM, PSexec, etc.) .

Note: The Clinical Display Application is only supported on a Windows 7 operating system; other operating systems are not officially supported.

Clinical Display is distributed as an MSI and EXE installation. The MSI is intended for sites that want to do a push installation (using SCCM or another tool). The EXE is intended for use to install on a single workstation.

After client installation is complete, log in to an updated workstation and use the Help | About menu option to verify that the version number is 3.0.149.4.

**Manual Installation**

The MAG3_0P149_Clinical_Display_Setup.exe file can be installed manually on workstations as described in Section "Single Workstation Installation" in the Clinical Imaging Installation Guide.

**Auto-update Installation**

VistA Imaging Auto-update functionality is no longer supported.

## Uninstalling MAG*3.0*149

If it is necessary to uninstall the MAG*3.0*149 client, use the Uninstall option from Windows Control Panel to Uninstall: "VistA Imaging Clinical Display".

Then install the previous version of Clinical Display which was included in MAG*3.0*131.