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## ***Invasive Cardiology Security Website***

### ***Interventional - Invasive Cardiology***

<b>Product Group:</b>	Interventional Invasive Products
<b>Products:</b>	Mac-Lab IT/XT/XTi, CardioLab IT/XT/XTi, SpecialsLab and ComboLab IT/XT/XTi Recording Systems, Centricity Cardiology Data Management Systems
<b>Version:</b>	6.9.6 Release 3
<b>Subject:</b>	Security Information
<b>Date:</b>	05 November 2019

#### **Summary**

The following information is provided to GE Healthcare Technologies customers in regards to known technical security vulnerabilities associated with Mac-Lab® Hemodynamic, CardioLab® Electrophysiology, SpecialsLab and ComboLab IT Recording Systems for Cath Lab, EP Lab and other interventional labs as well as the Centricity® Cardiology Data Management Systems.

#### **Security Patch Base Configuration**

The security patch base configuration of the Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi product at release is listed within the MLCL Base Configuration under the Hemodynamic, Electrophysiology and Cardiovascular Information Technologies section of the [http://www3.gehealthcare.com/en/Support/Invasive\\_Cardiology\\_Product\\_Security](http://www3.gehealthcare.com/en/Support/Invasive_Cardiology_Product_Security) website.

#### **Process**

The following actions are taken whenever Microsoft/OEMs releases new security patches:

- The Invasive Cardiology Engineering Team performs a security analysis process for supported Mac-Lab IT/XT/XTi, CardioLab IT/XT/XTi, GE Client Review and INW Server hardware/software.
- If a vulnerability meets Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi validation criteria, the vulnerability is communicated through the GEHC Product Security Database and Invasive Cardiology Security Website within Three weeks of the patch release.



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- Upon validation of the Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi vulnerability, the GEHC Product Security Database and Invasive Cardiology Security Website and affected Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi Security Patch Installation Instructions are updated.

The Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi vulnerability validation criteria are as follows: Any vulnerability that allows malware to alter or deny Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi functionality and/or infect and propagate through normal system use.

Customers are responsible to stay informed with Microsoft vulnerability notifications and to visit the Invasive Cardiology websites to understand the Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi impact. Once a security patch is validated, customers are responsible for the installation of security patches. All Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi Security Patch Installation Instructions are available on the Invasive Cardiology Security Website below the Validated Patches table.

Vulnerabilities exposed after the Mac-Lab IT/XT/XTi and CardioLab IT/XT/XTi product release which do not meet the criteria to be validated are not listed within the GEHC Product Security Database and Invasive Cardiology Security Website. These vulnerabilities are deemed to be non-critical and/or outside normal clinical workflow of the Mac-Lab IT/XT/XTi, CardioLab IT/XT/XTi and Centricity INW systems and will not be validated. Unlisted patches should not be installed on the products in order to eliminate malfunction and breakdown risks.



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**Revision History**

Revision	Date	Comments
1.0	22 September 2017	<ul style="list-style-type: none"> <li>6.9.6 document separation</li> <li>Qualified KB4025341 - July Monthly Rollup</li> <li>Added 6.9.6 Installation paths for simplifying patches installation</li> <li>September Unqualified Patches</li> </ul>



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2.0	13 October 2017	<ul style="list-style-type: none"> <li>Added instructions to Disable SMB1 Protocol</li> </ul>
3.0	27 October 2017	<ul style="list-style-type: none"> <li>October Unqualified Patches</li> </ul>
4.0	20 November 2017	<ul style="list-style-type: none"> <li>Added October Qualified Patches</li> </ul>
5.0	11 December 2017	<ul style="list-style-type: none"> <li>November Unqualified Patches</li> </ul>
6.0	20 December 2017	<ul style="list-style-type: none"> <li>For October monthly patch, statement added to uninstall previous monthly patches prior to installation of October monthly patch on the server</li> </ul>
7.0	26 January 2018	<ul style="list-style-type: none"> <li>Qualified November and December monthly rollups with other patches. Also added January Unqualified patches</li> </ul>
8.0	9 March 2018	<ul style="list-style-type: none"> <li>Added Unqualified February Patch</li> <li>Qualified minimum password length changes</li> <li>Changed verbiage from "Patch Refresh" to "Patch Updates"</li> <li>Further MLCL System Security Recommendation</li> </ul>
9.0	20 April 2018	<ul style="list-style-type: none"> <li>Added January, February, March and April Qualified Patches</li> <li>Updated "Further MLCL Systems Security Recommendations" section and moved the section Optional Security Updates</li> </ul>
10.0	30 April 2018	<ul style="list-style-type: none"> <li>Added "Optionally Remove Abode Reader on INW Server" section to the optional section</li> <li>Added Unqualified April Patch</li> </ul>
11.0	17 May 2018	<ul style="list-style-type: none"> <li>Added May Qualified Patches</li> <li>Added .NET patches for versions 3.5 SP1, 4.5.2</li> <li>Added Microsoft Office Patches</li> </ul>
12	29 June 2018	<ul style="list-style-type: none"> <li>Added Unqualified June Patch</li> </ul>
13	5 September 2018	<ul style="list-style-type: none"> <li>Added Unqualified August Patch</li> </ul>
14	18 September 2018	<ul style="list-style-type: none"> <li>Qualified June, July, August and September Patches</li> <li>Qualified .Net Framework Patches</li> <li>Qualified Microsoft Office 2010 Patches</li> <li>Qualified Z440 BIOS update</li> <li>Qualified ML350 Gen9 BIOS update</li> </ul>



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15	5 December 2018	<ul style="list-style-type: none"> <li>Added Unqualified October Patch</li> </ul>
16	10 May 2019	<ul style="list-style-type: none"> <li>Qualified October 2018, November 2018, December 2018, January 2019, February 2019 and March 2019</li> <li>Qualified .Net Framework Patches</li> <li>Qualified Microsoft Office 2010 Patches</li> <li>Added instructions to disable 3DES to the optional section</li> <li>Added instructions to disable SMBv2 Signing to the optional section</li> <li>Added instructions to uninstall codemeter</li> <li>Added instructions to clean up C:\ Drive</li> <li>Added instructions to remove Authenticated Users from INW server</li> <li>Added Adobe Reader DC MUI Installation and Configuration</li> <li>Added document layout</li> <li>Added Old and New Images</li> </ul>
17	24 May 2019	<ul style="list-style-type: none"> <li>Qualified April and May 2019 Patches</li> <li>Added instructions to optionally Disable Remote Desktop Services</li> </ul>
18	21 Jun 2019	<ul style="list-style-type: none"> <li>Updates as part of SPR HCSDM00555264 – missing cab file information for KB4461623</li> <li>Renamed section MLCL V6.9.6 2018 Patch Updates 6 to MLCL V6.9.6 2019 Patch Updates 6</li> <li>Renamed section MLCL V6.9.6 2018 Patch Updates 7 to MLCL V6.9.6 2019 Patch Updates 7</li> </ul>
19	27 Jun 2019	<ul style="list-style-type: none"> <li>Added Unqualified June 2019 Patches</li> <li>Removed instructions to disable 3DES protocol</li> </ul>
20	5 August 2019	<ul style="list-style-type: none"> <li>Added Unqualified July 2019 Patches</li> </ul>
21	19 August 2019	<ul style="list-style-type: none"> <li>Added instructions to disable Remote Desktop Services per CVE-2019-1181/1182</li> </ul>
22	30 August 2019	<ul style="list-style-type: none"> <li>Added Unqualified August 2019 Patches</li> <li>Corrected the patch names in the 6.9.6 Installation Paths section.</li> </ul>
23	05 November 2019	<ul style="list-style-type: none"> <li>Updated Patch Updates with details regarding applicable images.</li> <li>Qualified June and July 2019 Patches</li> <li>Added Unqualified September 2019 Patches</li> <li>Added Monthly Rollup patches for June, July, August 2019.</li> <li>Added .NET patches for versions 3.5.1, 4.5.2</li> <li>Added Internet Explorer 11 patches.</li> <li>Added SHA-2 code signing support update patch.</li> </ul>



- |  |  |   |
|--|--|---|
|  |  | <ul style="list-style-type: none"><li>• Added Microsoft Office 2010 Patches</li><li>• Added Adobe 12 Patch Installation Instructions.</li></ul> |
|--|--|---|

## Document layout

The document is structured to show

- Requirements for installation of patches
- How to confirm the version of 6.9.6 application
- Installation paths
- How to logon to the system
- Subsections that are referenced from patch update sections
- Unqualified patches
- Patch update sections
- Optional security update section

## Installation of the Security Patches on MLCL systems

### Requirements:

- Updates may be applied at any time other than while the Mac-Lab IT/XT/XTi, CardioLab IT/XT/XTi or SpecialsLab application is open.
- Updates must be re-applied if the system is re-imaged.
- Updates apply to both networked and standalone systems.
- Best practice is to update all applicable MLCL systems at the site. This document provides list of qualified patches for INW Server (Windows Server 2008 R2), Acquisition (Windows 7), Review (Windows 7) and Virtual Review (Windows 7) systems.

**This document applies to 6.9.6R3 only. Please verify that you are running 6.9.6 using the following procedure before proceeding:**

1. Launch the Mac-Lab CardioLab application from the acquisition or review system.
2. Select **Help > About Mac-Lab** (or **CardioLab**, as applicable).
3. Verify the version number is **6.9.6 Release 3**.
4. Click **Close**.



- 5. Close the application.

**Recommendation: Use Internet Explorer (IE) for Catalog download.** If you are using the cart feature to download patches, to see the cart it requires opening another tab or new window for <http://catalog.update.microsoft.com>

### 6.9.6 Installation Paths

There are multiple installation paths depending on the version of 6.9.6 installed and any previous patches which have been installed. The following information will help guide you through correct installation path

Determine which version of 6.9.6 you are running. This can be done from the Mac Lab/Cardio Lab application and going to Help/About as stated above. The release number combined with the installation scenario will determine the correct path.

Note: The section MLCL Optional Security Updates can be applied after all other patches/updates have been applied. The optional updates provide additional security but are not required. You may apply some of the optional patches but choose to bypass others. For example, you may want to disable some of the vulnerable protocols by you may not want to address Weak Hashing due to cost and complexity of certificate management. This will not cause problems. However, ***all other updates are strongly recommended.***

Determine which image version of 6.9.6 you are running by following these steps;

- 1) Log on to MLCL Systems (ACQ, GE REVIEW, INW, VIRTUAL REVIEW) as a user with administrative privileges e.g **Administrator**.
- 2) Select **Windows Start -> Run** and enter **Regedit** and Enter.
- 3) In **Regedit** window, navigate to **HKEY\_LOCAL\_MACHINE\SOFTWARE\GE Medical Systems**
- 4) Click on **GE Medical Systems**
- 5) Double click on **Image Version**
- 6) Compare the **Value Data** with the table below to determine if you are running old or new image
- 7) Exit the **Regedit** dialog.

MLCL System	Old Image Versions	New Image Version
ACQ	10192016	12132018
GE REVIEW	10192016	12132018
INW	10192016	12142018
VIRTUAL REVIEW	10282016	12172018





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Some updates are documented as **superseded**. These are left in the document for completeness but can be skipped. One of the following scenarios will be applicable to the install:

- (1) New Setup/Reimage a machine for disaster recovery setup using image
  - (a) If the system was setup using old image apply the updates from the following section.
    - (i) MLCL V6.9.6 2017 Patch Updates 1 (Applies only to old image)
    - (ii) MLCL V6.9.6 2017 Patch Updates 2 (Applies only to old image)
    - (iii) MLCL V6.9.6 2018 Patch Updates 3 (Applies only to old image)
    - (iv) MLCL V6.9.6 2018 Patch Updates 4 (Applies only to old image)
    - (v) MLCL V6.9.6 2018 Patch Updates 5 (Applies only to old image)
    - (vi) MLCL V6.9.6 2019 Patch Updates 6 (Applies only to old image)
    - (vii) MLCL V6.9.6 2019 Patch Updates 8 (Applies to both old and new image)
  - (b) If the system was setup using new image apply the updates from the following section
    - (i) MLCL V6.9.6 2019 Patch Updates 7 (Applies only to new image)
    - (ii) MLCL V6.9.6 2019 Patch Updates 8 (Applies to both old and new image)
- (2) The machine was setup and initially patched with qualified patches at the time
  - (a) You will need to know patches from which patch updates sections were installed at the time of install and if the system was configured using old/new image.
    - (i) Based on new/old image and the patches installed at the time of install/re-image, subsequently qualified patches from newly qualified patch list under various patch update sections and optional security update section should be installed.

## How to Log On to Acquisition and Review Systems

When starting up an Mac-Lab, CardioLab or SpecialsLab Acquisition or Review system, an auto-logon sequence starts and automatically logs on to the operating system. To install a security patch, the user must be logged on as **mlcltechuser**.

**NOTE:** Password information is contained within the Security Guide Manual. Otherwise, contact the system administrator or GE Technical Support for current password information.

1. Power on the Acquisition system.
2. The system boots up to the **Custom Shell** screen.
3. Press **Ctrl + Action + Del**.



4. Click **Logoff**. On Windows XP, click **Logoff** again.
5. Click **OK**.
6. Immediately hold down the **Shift** key until the login window is displayed.
7. Log on to the operating system locally as **mlcltechuser**.
8. Log on to the **Custom Shell** locally as **mlcltechuser**.

## How to Log On to the Centricity Cardiology INW Server

Password information is contained within the Security Guide Manual. Otherwise, contact the system administrator or GE Technical Support for current password information. Logon to the INW Server as **administrator**

## How to Log On to MLCL Software Only Systems

Since Software Only systems are supported by the customer, the system needs to be logged into with an **administrator** account.

## CVE-2019-1181/1182 | Remote Desktop Services Remote Code Execution Vulnerability

We are in the process of qualifying the patch that addresses this vulnerability however, we recommend as a mitigation, that the RDS/Terminal Service is disabled on all ML/CL systems. Refer to the instructions below on disabling the service.

### Disable Remote Desktop Services on Windows 7

On Windows 7, do the following to disable Remote Desktop Services:

1. Right-click on **Computer** and select **Properties**
2. On the **System** window, click **Remote settings**
3. Uncheck the following option if it is checked:  
**Allow Remote Assistance connections to this computer**
4. Select the following option if it is not already selected:



**Don't allow connections to this computer**

5. Click **OK** to close the **System Properties** window
6. Click **Start > Control Panel > Administrative Tools > Services**
7. Double-click on the entry for **Remote Desktop Services**
8. Set the **Startup type** to **Disabled**
9. Click **OK** to close the **Remote Desktop Services Properties** window
10. Reboot the system

**Disable Remote Desktop Services on Windows 2008 R2**

On Windows Server 2008 R2, do the following to disable Remote Desktop Services:

1. Right-click on **Computer** and select **Properties**
2. On the **System** window, click **Remote settings**
3. Uncheck the following option if it is checked:  
**Allow Remote Assistance connections to this computer**
4. Select the following option if it is not already selected:  
**Don't allow connections to this computer**
5. Click **OK** to close the **System Properties** window
6. Click **Start > Administrative Tools > Services**
7. Double-click on the entry for **Remote Desktop Services**
8. Set the **Startup type** to **Disabled**
9. Click **OK** to close the **Remote Desktop Services Properties** window
10. Reboot the system



## How to Install Printer Firmware

The system which will apply the firmware to the printer should be provided by the customer.

**NOTE:** Mac-Lab CardioLab system should not be used to download and/or apply the Printer Firmware.

- Follow the download link in the table
- Select the appropriate printer
- Select English and the applicable MLCL operating system
- Select English and under the Firmware category select the applicable Firmware Update Utility and Click Download
- Launch the firmware installer and follow the instructions to complete the firmware update

## How to Update Intel Management Engine Firmware (HP Z440) – HPSBHF03557 Rev. 1

1. Logon to the Windows OS and MLCL *Custom Shell* as **mlcltechuser**.
2. Navigate to the location within the section, *MLCL V6.9.6 Patch Updates*, which has the Intel Management Engine Firmware Update file **sp80050.exe**.
3. Right-click on the **sp80050.exe** file and select **Run as administrator**.
4. Click **Yes** on the User Account Control dialog box.
5. Click **Next** on the InstallShield Wizard.
6. Accept the agreement and click **Next**.
7. Press **Y** on the command prompt which states “Do you want to update the Management Engine Firmware now [Y/N]?”
8. Reboot the system once the firmware update is completed.

Steps to verify the firmware update was successful:

1. After system reboots, within the HP screen press **F10** to enter setup menu.
2. Go to **Main > System Information**.
3. The ME Firmware Version should be at **9.1.41.3024**.

## Z440 BIOS Update to v2.34 Instructions:

1. Go to the HP Customer Support - Software and Driver Downloads website:



<https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828>

2. Select **BIOS**.
3. Select **Download** for HP Z440/Z640/Z840 Workstation System BIOS 2.34 Rev.A.
4. Log on to the z440 computer as **administrator**.
5. Run the downloaded **sp80745.exe** file.
6. Select **Yes** to allow.
7. Select **I accept the terms in the license agreement**.
8. Select **View Contents of the HPBIOSUPDREC folder**. This opens folder:  
  
C:\swsetup\SP80745\HPBIOSUPDREC
9. Run **HPBIOSUPDREC.exe**.
10. Select **Yes** to allow.
11. After several seconds, a log file is created and an install utility window appears. Select **Update** and **Next**.
12. Follow the onscreen instructions, select **Restart**.
13. The BIOS update will take a few minutes, do not remove power during update. The computer will Reboot twice during this update.
14. After the update, on the first boot screen before Windows launches, verify the BIOS version 2.34 on the bottom left of the screen appears.

## Z440 BIOS Update to v2.45 Instructions:

1. Go to the HP Customer Support - Software and Driver Downloads website:  
  
<https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828>
2. Select **BIOS**.
3. Select **Download** for HP Z440/Z640/Z840 Workstation System BIOS 2.45 Rev.A.
4. Log on to the z440 computer as **administrator**.
5. Run the downloaded **sp88253.exe** file.
6. Select **Yes** to allow.
7. Select **I accept the terms in the license agreement**.
8. Select **View Contents of the HPBIOSUPDREC folder**. This opens folder:  
  
C:\swsetup\SP88253\HPBIOSUPDREC
9. Run **HPBIOSUPDREC.exe**.
10. Select **Yes** to allow.



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11. After several seconds, a log file is created and an install utility window appears. Select **Update** and **Next**.
12. Follow the onscreen instructions, select **Restart**.
13. The BIOS update will take a few minutes, do not remove power during update. The computer will Reboot twice during this update.
14. After the update, on the first boot screen before Windows launches, verify the BIOS version 2.45 on the bottom left of the screen appears.

### Z440 BIOS Update to v2.47 Instructions:

1. Go to the HP Customer Support - Software and Driver Downloads website:

<https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828>

2. Select **BIOS**.
3. Select **Download** for HP Z440/Z640/Z840 Workstation System BIOS 2.47 Rev.A.
4. Log on to the z440 computer as **administrator**.
5. Run the downloaded **sp93482.exe** file.
6. Select **Yes** to allow.
7. Select **I accept the terms in the license agreement**.
8. Select **View Contents of the HPBIOSUPDREC folder**. This opens folder:

```
C:\swsetup\SP93482\HPBIOSUPDREC
```

9. Run **HPBIOSUPDREC.exe**.
10. Select **Yes** to allow.
11. After several seconds, a log file is created and an install utility window appears. Select **Update** and **Next**.
12. Follow the onscreen instructions, select **Restart**.
13. The BIOS update will take a few minutes, do not remove power during update. The computer will Reboot twice during this update.
14. After the update, on the first boot screen before Windows launches, verify the BIOS version 2.47 on the bottom left of the screen appears.

### ML350 Gen9 BIOS Update to v2.56 Instructions:

1. Go to the HP Customer Support - Software and Driver Downloads website:

[https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX\\_116f29414b06465c96e6bd94ae](https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_116f29414b06465c96e6bd94ae)

2. Select **Download** for HP ML350 Gen9 Server BIOS 2.56
3. Log on to the ML350 Gen9 Server as **administrator**.
4. Run the downloaded **cp034882.exe** file.



5. Click on **Run**
6. Click on **Install**
7. Follow the onscreen instructions, select **close** after installation is complete.
8. Select **Yes** to reboot.
9. The BIOS update will take a few minutes, do not remove power during update.
10. After the update, on boot screen before Windows launches, verify the BIOS version 2.56 on the bottom left of the screen appears.

### ML350 Gen9 BIOS Update to 5/21/2018 Instructions:

1. Go to the HP Customer Support - Software and Driver Downloads website:  
[https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&swItemId=MTX\\_2fad1bbda82e4d5ca0673a1b43&swEnvOid=4184](https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&swItemId=MTX_2fad1bbda82e4d5ca0673a1b43&swEnvOid=4184)
2. Select **Download** for HP ML350 Gen9 Server BIOS 5/21/2018
3. Log on to the ML350 Gen9 Server as **administrator**.
4. Run the downloaded **cp035797.exe** file.
5. Click on **Run**
6. Click on **Install**
7. Follow the onscreen instructions, select **close** after installation is complete.
8. Select **Yes** to reboot.
9. The BIOS update will take a few minutes, do not remove power during update.
10. After the update, on boot screen before Windows launches, verify the BIOS version 5/21/2018 on the bottom left of the screen appears.

### OPTIONAL – How to Install INW Server Performance Enhancement

The following patches do not resolve security vulnerabilities and are optional. These patches may improve network performance. The installation procedure below must be followed and all listed patches deployed together. This deployment may take up to 12 hours, the large percentage within the KB2775511 installation.

1. Using a non-MLCL system, visit and download the following patches to removable media.  
Visit <http://catalog.update.microsoft.com/> and enter the below KB numbers to access the patches.  
KB2775511 - <http://support.microsoft.com/kb/2775511>  
KB2732673 - <http://support.microsoft.com/kb/2732673>  
KB2728738 - <http://support.microsoft.com/kb/2728738>  
KB2878378 - <http://support.microsoft.com/kb/2878378>



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The following patches are summarized at KB2473205 - <https://support.microsoft.com/en-us/kb/2473205>  
KB2535094 – <http://support.microsoft.com/kb/2535094> Download at - <https://support.microsoft.com/en-us/hotfix/kbhotfix?kbnm=2535094&kbln=en-us>  
KB2914677 – <http://support.microsoft.com/kb/2914677> Download at - <https://support.microsoft.com/en-us/hotfix/kbhotfix?kbnm=2914677&kbln=en-us>  
KB2831013 – <http://support.microsoft.com/kb/2831013> Download at - <https://support.microsoft.com/en-us/hotfix/kbhotfix?kbnm=2831013&kbln=en-us>  
KB3000483 – <http://support.microsoft.com/kb/3000483> Download at - <http://catalog.update.microsoft.com/>  
KB3080140 – <http://support.microsoft.com/kb/3080140> Download at - <http://catalog.update.microsoft.com/>  
KB3044428 – <http://support.microsoft.com/kb/3044428> Download at - <https://support.microsoft.com/en-us/hotfix/kbhotfix?kbnm=3044428&kbln=en-us>

2. Log on to the INW Server as **Administrator**.
3. Insert the removable media and install the patches in the order listed above.
4. Follow the Microsoft installation instructions to complete the installation of the patches.
5. Select **Windows Start -> Run** and enter **Regedit** and Enter.
6. In **Regedit** window, navigate to **HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\services\Tcpip**
7. In the dialog Menu, select **File -> Export**. Name the file **MLCLRegSave.reg** and place in the **C:\Temp** directory.
8. In Regedit windows, from **Tcpip** navigate to **Parameters**.
9. In the dialog Menu, select **Edit -> New -> DWORD (32-bit) Value**. A new entry is created and name it '**MaxUserPort**'.
10. Right click on '**MaxUserPort**', select **Modify** and enter the value **65534** with a base of **Decimal**.
11. Follow the same procedure above and create a new entry named '**TcpTimedWaitDelay**'. Enter the value **60** with a base of **Decimal**.
12. Exit the **Regedit** dialog.
13. Reboot the INW Server.

### OPTIONAL – How to Install Plugin 20007 – Disable SSL V2/V3 – KB187498

1. Log on to Windows as **Administrator** or a member of that group.
2. Open a command prompt and enter the following commands:
3. `REG ADD "HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 2.0" /f`
4. `REG ADD "HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 2.0\Client" /v DisabledByDefault /t REG_DWORD /d 00000001 /f`
5. `REG ADD "HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 2.0\Server" /v DisabledByDefault /t REG_DWORD /d 00000001 /f`





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6. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 2.0\Server" /v Enabled /t REG\_DWORD /d 00000000 /f
7. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 3.0" /f
8. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 3.0\Server" /f
9. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 3.0\Server" /v DisabledByDefault /t REG\_DWORD /d 00000001 /f
10. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Protocols\SSL 3.0\Server" /v Enabled /t REG\_DWORD /d 00000000 /f
11. Close the command prompt.

### OPTIONAL – How to Install Plugin 35291 –Weak Hashing

- 1) Load your security certificate in SQL Server on each ML/CL system in the network (server, acquisitions, reviews and virtual reviews) or the ML/CL standalone acquisition.
- 2) Disable RDP on each member of the network.
  - a) My Computer>Properties>Remote settings>Remote
  - b) Check "Don't allow connections to this computer".
  - c) Click ok and reboot.

### OPTIONAL – How to Install Plugin 65821 –SSL RC4 Cipher Suites Supported

1. Log on to Windows as **Administrator** or a member of that group.
2. Open a command prompt and enter the following commands:
3. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 128/128" /f
4. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 128/128" /v Enabled /t REG\_DWORD /d 00000000 /f
5. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 40/128" /f
6. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 40/128" /v Enabled /t REG\_DWORD /d 00000000 /f
7. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 56/128" /f
8. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\SCHANNEL\Ciphers\RC4 56/128" /v Enabled /t REG\_DWORD /d 00000000 /f



9. Close the command prompt.

## OPTIONAL – How Remove Vulnerability for Plugin 63155 – Microsoft Windows Unquoted Service Path Enumeration

1. Log on to Windows as Administrator or a member of that group
2. Open Regedit do the following
  - a. On Windows 7
    - i. Navigate to HKLM\System\CurrentControlset\Services\RtkAudioService
    - ii. Change the imagepath key value from:  
**C:\Program Files\Realtek\Audio\HDA\RtkAudioService.exe**  
To:  
**"C:\Program Files\Realtek\Audio\HDA\RtkAudioService.exe"**  
Note: The leading and trailing Quote marks are part of the key value. The quotes are what removes the vulnerability
  - b. On Windows 2008R2
    - i. Navigate to HKLM\System\CurrentControlset\Services\Gems Task Scheduler
    - ii. Change the imagepath key value from:  
**C:\Program Files (x86)\GE Healthcare\MLCL\Bin\ArchiveUtility\GEMS\_TaskSvc.exe**  
To:  
**"C:\Program Files (x86)\GE Healthcare\MLCL\Bin\ArchiveUtility\GEMS\_TaskSvc.exe"**  
Note: The leading and trailing Quote marks are part of the key value. The quotes are what removes the vulnerability

## OPTIONAL – How to Disable the SMB1 Protocol

**NOTE: Disabling SMB1 might result in nonfunctional VIVID interface with Acquisition system**

1. Log on to Windows as **Administrator** or a member of that group.
2. Open a command prompt and enter the following commands:
3. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters" /f
4. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters" /v SMB1 /t REG\_DWORD /d 00000000 /f



5. sc.exe config lanmanworkstation depend= bowser/mrxsmb20/nsi
6. sc.exe config mrxsmb10 start= disabled

## OPTIONAL – How to Configure Required SMBv2 Signing - SMBv2 signing not required

**NOTE: SMBV2 Signing might result in nonfunctional VIVID interface with Acquisition system**

1. Log on to Windows as **Administrator** or a member of that group.
2. Open a command prompt and enter the following commands:
3. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters" /f
4. REG ADD "HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters" /v RequireSecuritySignature /t REG\_DWORD /d 1 /f
5. Close the command prompt.

## OPTIONAL - CodeMeter Uninstallation

Follow the below instructions to uninstall CodeMeter on 6.9.6 R2 and 6.9.6 R3 Acquisition systems and Review workstations only.

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as member of **local** administrator group to Windows and Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in as member of **domain** administrator group to Windows and Custom Shell.
- 2) Click **Start > Control Panel > Programs and Features**.
- 3) Select **CodeMeter Runtime Kit Reduced v5.00** and click **Uninstall**.
- 4) Click **Yes**.
- 5) Click **OK**.
- 6) Click **Start > Control Panel > Windows Firewall > Advanced settings**.
- 7) In left pane, click **Inbound Rules**.
- 8) In right pane, right click each **CodeMeter Runtime Server** entries one after other and select **Delete**.
- 9) Click **Yes**.
- 10) In left pane, click **Outbound Rules**.
- 11) In right pane, ensure **CodeMeter Runtime Server** entries are not present.
- 12) Close all open windows and restart the system.



## OPTIONAL - CDrive Disk Space Cleanup

Follow the below instructions to cleanup CDrive disk space on 6.9.6 R3 Review workstations and Virtual Review systems only. The following instructions only applies to MLCL systems build with the Old image and does not apply to MLCL systems built with new image. Refer to MLCL V6.9.6 2018 Patch Update 7 section for the difference between old and new image.

- 1) Note the following login requirements:
  - On Review workstations and Virtual Review systems, you must be logged in as member of **domain** administrator group to Windows and Custom Shell.
- 2) Open **Windows Explorer**.
- 3) Click **Organize > Folder and search options > View**.
- 4) Select **Show hidden files, folders, and drivers**.
- 5) Deselect **Hide protected operating system files (Recommended)**.
- 6) If prompted, click **Yes**.
- 7) Click **OK**.
- 8) If present, permanently delete the contents of the following folders, if prompted click **Continue**:
  - C:\Windows\SoftwareDistribution\Download
  - C:\Users\MLCLLogonUser\AppData\Local\Temp
  - C:\Users\MLCLLogonUser.<domainname>\AppData\Local\Temp
  - C:\Users\MLCLTechUser\AppData\Local\Temp
  - C:\Users\MLCLTechUser.<domainname>\AppData\Local\Temp
  - C:\Users\MLCLUser\AppData\Local\Temp
  - C:\Users\MLCLUser.<domainname>\AppData\Local\Temp
  - C:\Temp
  - **Note:** On Virtual Review system do not delete **C:\Temp\VirtualReviewBanner.reg** and **C:\Temp\Tools** folder.
  - C:\Windows\Temp
  - C:\Windows\Logs
  - C:\Windows\Installer\\$\PatchCache\$\Managed
- 9) Click **Organize > Folder and search options > View**.
- 10) Select **Don't show hidden files, folders, or drivers**.
- 11) Select **Hide protected operating system files (Recommended)**.



- 12) Click **OK**.
- 13) Right click **Computer** and select **Manage**.
- 14) Expand and click **Storage > Disk Management**.
- 15) Right click on the **C:** partition and select **Properties**.
- 16) Click **Tools > Defragment now**.
- 17) Select **C:** partition and click **Defragment disk**.
- 18) Allow the Defragmentation to complete.
- 19) Close Disk Defragmenter window.
- 20) Close C: Properties window.

## **OPTIONAL - Remote Desktop Services Remote Code Execution Vulnerability**

We recommend that the RDS is disabled on all ML/CL systems if not in use. Refer to the instructions below on disabling the service.

### **Disable Remote Desktop Services on Windows 7**

On Windows 7, do the following to disable Remote Desktop Services:

1. Right-click on **Computer** and select **Properties**
2. On the **System** window, click **Remote settings**
3. Uncheck the following option if it is checked:  
**Allow Remote Assistance connections to this computer**
4. Select the following option if it is not already selected:  
**Don't allow connections to this computer**
5. Click **OK** to close the **System Properties** window
6. Click **Start > Control Panel > Administrative Tools > Services**
7. Double-click on the entry for **Remote Desktop Services**



8. Set the **Startup type** to **Disabled**
9. Click **OK** to close the **Remote Desktop Services Properties** window
10. Reboot the system

### **Disable Remote Desktop Services on Windows 2008 R2**

On Windows Server 2008 R2, do the following to disable Remote Desktop Services:

1. Right-click on **Computer** and select **Properties**
2. On the **System** window, click **Remote settings**
3. Uncheck the following option if it is checked:  
**Allow Remote Assistance connections to this computer**
4. Select the following option if it is not already selected:  
**Don't allow connections to this computer**
5. Click **OK** to close the **System Properties** window
6. Click **Start > Administrative Tools > Services**
7. Double-click on the entry for **Remote Desktop Services**
8. Set the **Startup type** to **Disabled**
9. Click **OK** to close the **Remote Desktop Services Properties** window
10. Reboot the system



## Patch Links

The patches displayed below are qualified on an independent basis and can be installed on a one-by-one basis, although it is recommended that all qualified patches are installed. There are dependencies within the qualified patch list. In the table below, it is recommended the patches are installed in order from top to bottom to ensure all pre-requisites are met for all patches. On occasion the patch dependencies require system reboots which are identified in the table below.

**NOTE:** Due to site configurations, system patch set, qualified patches which have been installed previously or patch dependencies, some patches could fail to install due to the functionality is already installed. The Microsoft patch installer will alert you to this issue. If this occurs, please continue with the next patch installation.

**Alternate Patch locations:** In early 2016 Microsoft announced that some patches would no longer be available on the Microsoft Download Center <https://blogs.technet.microsoft.com/msrc/2016/04/29/changes-to-security-update-links/>. Therefore, some of the links provided below may not work. Microsoft may move/remove these links at any time without notice. However, if the links do not work, there are two alternate methods for downloading patches. The first is the Microsoft Catalog <http://catalog.update.microsoft.com>. Most fixes not on Microsoft Download Center will be available from the Microsoft Catalog. If a fix is not available from the Microsoft Catalog, Microsoft has monthly ISO files of the security updates available at <https://support.microsoft.com/en-us/kb/913086>. To use the ISOs, determine the month of the patch, download the applicable ISO and extract the patch. If after exhausting all three methods, you are still unable to obtain a patch, please contact GE Technical Support for further assistance.

## Unqualified Patches MLCL v6.9.6 R3

	INW Server	Acquisition - Mac-Lab IT/XT/XTi , CardioLab IT/XT/XTi and SpecialsLab	GE Client Review Workstation	Virtual Review
<b>Operating System Platform</b>	Windows Server 2008 R2 SP1	Windows 7 SP1	Windows 7 SP1	Windows 7 SP1
<b>Current Unqualified Vulnerability</b>	KB4507456(CVE-2019-1082) KB4507411(CVE-2019-1083, CVE-2019-1006) KB4512486 (CVE-2019-0736, CVE-2019-1181, CVE-2019-1182 ) KB4524135 (CVE-2019-1367)	KB4462178 (CVE-2019-1034) KB4507456(CVE-2019-1082) KB4507411(CVE-2019-1083, CVE-2019-1006) KB4512486 (CVE-2019-0736, CVE-2019-1181, CVE-2019-1182 ) KB4524135 (CVE-2019-1367)	KB4462178 (CVE-2019-1034) KB4507456(CVE-2019-1082) KB4507411(CVE-2019-1083, CVE-2019-1006) KB4512486 (CVE-2019-0736, CVE-2019-1181, CVE-2019-1182 ) KB4524135 (CVE-2019-1367)	KB4462178 (CVE-2019-1034) KB4507456(CVE-2019-1082) KB4507411(CVE-2019-1083, CVE-2019-1006) KB4512486 (CVE-2019-0736, CVE-2019-1181, CVE-2019-1182 ) KB4524135 (CVE-2019-1367)



### MLCL V6.9.6 2017 Patch Updates 1 (Applies only to old image)

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB2901907	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=42642">https://www.microsoft.com/en-us/download/details.aspx?id=42642</a>	Right click and Run as Administrator
Adobe 11.0.20	<a href="http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6157&amp;fileID=6191">http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6157&amp;fileID=6191</a>	
KB4025341 July Rollup 2017	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=12c93ad9-ef0e-4ce6-8a1d-84713223d24a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=12c93ad9-ef0e-4ce6-8a1d-84713223d24a</a>	
KB4034664 August Rollup 2017 <b>Superseded</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e0a94bad-5b2c-4611-9066-24491ce9bb4f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e0a94bad-5b2c-4611-9066-24491ce9bb4f</a>	To successfully install this Rollup, you must uninstall July Rollup <b>KB4025341</b> and <b>reboot before installing KB4034664</b>
<b>Reboot Required</b>	-	
KB4019112	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4</a>	Run KB4014514 and KB4014504 only. For KB4014514, right click and Run as Administrator,
KB3125869	<a href="https://support.microsoft.com/en-us/help/3125869/ms15-124-vulnerability-in-internet-explorer-could-lead-to-aslr-bypass-december-16,-2015">https://support.microsoft.com/en-us/help/3125869/ms15-124-vulnerability-in-internet-explorer-could-lead-to-aslr-bypass-december-16,-2015</a>	Download and install only the "Enable the User32 exception handler hardening feature in Internet Explorer"





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KB2889841	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bb220b30-6d01-4e57-8db6-3e492d6b65d3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bb220b30-6d01-4e57-8db6-3e492d6b65d3</a>	-
KB3178688	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=322c28f5-349c-468a-ac94-901616f52372">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=322c28f5-349c-468a-ac94-901616f52372</a>	
KB3178690	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=06e2c9fb-65b7-48f5-b6e2-58071f17f9bd">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=06e2c9fb-65b7-48f5-b6e2-58071f17f9bd</a>	
KB3178687	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=726adfc6-4ac9-4409-bdab-2892b7058e78">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=726adfc6-4ac9-4409-bdab-2892b7058e78</a>	
kb3141538	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=6be5e673-e3f6-4c8e-8834-732baf0eb5d3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=6be5e673-e3f6-4c8e-8834-732baf0eb5d3</a>	
KB3191847	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4b4bbe2b-a25d-4509-a069-f5efc227b4ad">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4b4bbe2b-a25d-4509-a069-f5efc227b4ad</a>	
KB3191907	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c8533f11-51f9-4f84-96d8-c619947cc7c0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c8533f11-51f9-4f84-96d8-c619947cc7c0</a>	
KB3118310	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c59a1bb2-ff1f-427a-a8d7-2cab1cb3e7d1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c59a1bb2-ff1f-427a-a8d7-2cab1cb3e7d1</a>	
KB3191843	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f715a81d-102d-416a-9a89-e9ebdace0a6d">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f715a81d-102d-416a-9a89-e9ebdace0a6d</a>	
KB3191899	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7698c63a-b85f-4647-bcb1-1be0256c3f43">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7698c63a-b85f-4647-bcb1-1be0256c3f43</a>	
KB3203468	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a</a>	Use all-proof-en-us_.....cab
KB3213624	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3658f96e-a521-429d-a9a9-e70e30f5d830">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3658f96e-a521-429d-a9a9-e70e30f5d830</a>	
HPSBHF03557 Rev. 1	<a href="ftp://ftp.hp.com/pub/softpaq/sp80001-80500/sp80050.exe">ftp://ftp.hp.com/pub/softpaq/sp80001-80500/sp80050.exe</a>	Not applicable for Virtual Review.
HP z440 BIOS Update	<a href="https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828">https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828</a>	



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KB3118378	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ae54ce3d-e321-4831-a1ba-fcae8eb430a0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ae54ce3d-e321-4831-a1ba-fcae8eb430a0</a>	
<b>Reboot Required</b>	-	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
<b>Windows 2008R2 (INW)</b>		
KB	Link	
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
Adobe 11.0.20	<a href="http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6157&amp;fileID=6191">http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6157&amp;fileID=6191</a>	
KB3125869	<a href="https://support.microsoft.com/en-us/help/3125869/ms15-124-vulnerability-in-internet-explorer-could-lead-to-aslr-bypass-december-16,-2015">https://support.microsoft.com/en-us/help/3125869/ms15-124-vulnerability-in-internet-explorer-could-lead-to-aslr-bypass-december-16,-2015</a>	Download and install only the "Enable the User32 exception handler hardening feature in Internet Explorer"
KB4025341 July Rollup 2017	<a href="https://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b2423c5b-0254-4747-88bb-ec1a785549cb">https://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b2423c5b-0254-4747-88bb-ec1a785549cb</a>	
<b>Superseded</b> KB4034664 August Rollup 2017	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80f7899d-451d-4e3f-b54e-d488a06a3c58">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80f7899d-451d-4e3f-b54e-d488a06a3c58</a>	To successfully install this Rollup, you must uninstall July Rollup <b>KB4025341</b> and <b>reboot before installing KB4034664</b>



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KB4019112	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dedea6da-e039-487b-8ec6-2729551f7165">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dedea6da-e039-487b-8ec6-2729551f7165</a>	Run KB4014514 and KB4014504 only. For KB4014514, right click and Run as Administrator,
HPSBMU03653 rev.1	<a href="https://h20566.www2.hpe.com/hpsc/swd/public/detail?swItemId=MTX_083799d6dad34195bb47cb43c1">https://h20566.www2.hpe.com/hpsc/swd/public/detail?swItemId=MTX_083799d6dad34195bb47cb43c1</a>	
<b>Reboot Required</b>		
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]  State=dword:00010000	
	[HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\NTDS\Parameters]  LdapEnforceChannelBinding=DWORD:1	Apply only on Domain Controller Need starting July Rollup-KB4025341 (CVE-2017-8563)

### MLCL V6.9.6 2017 Patch Updates 2 (Applies only to old image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.
- 2) It is expected that some patches listed will already be on the system.
- 3) Pay attention to the Notes section for special handling instructions
- 4) Patches must be applied in order except where indicated.
- 5) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.
- 6) Patches will not install if the software component to be patched is not present (such as an IE8 patch on a system that does not have IE8 installed).

**Note:** KB4041681 replaces KB4041678 for both Windows 7 and Windows Server 2008 R2 to address CVE-2017-11771, CVE-2017-11772, CVE-2017-11780, CVE-2017-11781



Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
Adobe 11.0.23	<a href="http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6279&amp;fileID=6314">http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6279&amp;fileID=6314</a>	
KB4041681 October 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8a346e85-6ae3-46aa-a9e1-2e70e760f61c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8a346e85-6ae3-46aa-a9e1-2e70e760f61c</a>	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	

### Windows 2008R2 (INW Server)

KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	



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Adobe 11.0.23	<a href="http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6279&amp;fileID=6314">http://supportdownloads.adobe.com/thankyou.jsp?ftpID=6279&amp;fileID=6314</a>	
KB4041681 October 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cd0388fd-5aca-4a13-8417-c28e1d8b7dda">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cd0388fd-5aca-4a13-8417-c28e1d8b7dda</a>	<p><b>To successfully install this Rollup, you must uninstall July Rollup KB4025341, August Rollup KB4034664 and reboot before applying KB4041681</b></p> <p>Make the following Registry Change – Only on Domain Controller if it does not exist: [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\NTDS\Parameters] LdapEnforceChannelBinding=DWORD:1</p> <p><b>This registry key is needed on Domain controller</b> starting July Rollup- KB4025341 (CVE-2017-8563)</p>
	Make the following Registry Change	
	<p>[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]</p> <p>State=dword:00010000</p>	
	<b><u>Reboot Required</u></b>	



## MLCL V6.9.6 2018 Patch Updates 3 (Applies only to old image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.
- 2) Pay attention to the Notes section for special handling instructions
- 3) Patches must be applied in order except where indicated.
- 4) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.

**Follow these steps to make the following registry changes to remediate June and September monthly rollup vulnerabilities.**

Reference: <https://portal.msrc.microsoft.com/en-us/security-guidance/advisory/CVE-2017-8529>

### Windows 7 (Acquisition, Review and Virtual Review) & Windows 2008R2 (INW Server):

1. Click **Start**, click **Run**, type **regedt32** or type **regedit**, and then click **OK**.
2. In Registry Editor, locate the following registry folder: **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Main\FeatureControl\**
3. Right-click **FeatureControl**, point to **New**, and then click **Key**.
4. Type **FEATURE\_ENABLE\_PRINT\_INFO\_DISCLOSURE\_FIX**, and then press Enter to name the new subkey.
5. Right-click **FEATURE\_ENABLE\_PRINT\_INFO\_DISCLOSURE\_FIX**, point to **New**, and then click **DWORD Value**.
6. Type "iexplore.exe" for the new DWORD value.
7. Double-click the new DWORD value named iexplore.exe and change the **Value** data field to **1**.
8. Click **OK** to close.

### Windows 2008R2 (INW Server):

1. Click **Start**, click **Run**, type **regedt32** or type **regedit**, and then click **OK**.
2. In Registry Editor, locate the following registry folder: **HKEY\_LOCAL\_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Internet Explorer\Main\FeatureControl\**
3. Right-click **FeatureControl**, point to **New**, and then click **Key**.
4. Type **FEATURE\_ENABLE\_PRINT\_INFO\_DISCLOSURE\_FIX**, and then press Enter to name the new subkey.
5. Right-click **FEATURE\_ENABLE\_PRINT\_INFO\_DISCLOSURE\_FIX**, point to **New**, and then click **DWORD Value**.
6. Type "iexplore.exe" for the new DWORD value.
7. Double-click the new DWORD value named iexplore.exe and change the **Value** data field to **1**.



8. Click **OK** to close.

<b>Windows 7 (Acquisition, Review and Virtual Review)</b>		
<b>KB</b>	<b>Link</b>	<b>Notes</b>
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB4048957 November 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=224b07ab-de98-45f0-8b9c-83551cac66f6">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=224b07ab-de98-45f0-8b9c-83551cac66f6</a>	
	<b><u>Reboot Required</u></b>	
KB4054518 December 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b48d1cb-83f7-43e1-9308-18872ffe4dce">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b48d1cb-83f7-43e1-9308-18872ffe4dce</a>	
	<b><u>Reboot Required</u></b>	
KB3203468 July 2017 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a</a>	
KB3213626 September 2017 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2bb1487f-b287-41a9-b0ec-01b42aa4759e">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2bb1487f-b287-41a9-b0ec-01b42aa4759e</a>	
KB3128027 September 2017 Microsoft	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=474aa90a-7767-4f4f-b3f5-2ffa12fea4e6">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=474aa90a-7767-4f4f-b3f5-2ffa12fea4e6</a>	



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<b>PowerPoint 2010</b>		
<b>KB3141537 September 2017 Microsoft Publisher 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0c646d3e-697d-4463-a6ea-afb3493c5cea">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0c646d3e-697d-4463-a6ea-afb3493c5cea</a>	
<b>KB2553338 October 2017 Microsoft Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14e73852-cbd2-456a-a9a8-7f0c10f1fa40">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14e73852-cbd2-456a-a9a8-7f0c10f1fa40</a>	Might get error message (The upgrade path cannot be installed...) This error message can be ignored.
<b>KB2837599 October 2017 Microsoft Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=54ccbc02-879e-4aa1-b817-12418ce8dfcd">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=54ccbc02-879e-4aa1-b817-12418ce8dfcd</a>	
<b>KB4011612 December 2017 Microsoft Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8230d598-8ab1-4efc-89b6-d3507a6dfd20">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8230d598-8ab1-4efc-89b6-d3507a6dfd20</a>	Might get error message (The upgrade path cannot be installed...) This error message can be ignored.
<b>KB4011660 January 2018 Microsoft Excel 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7594745-04d5-4631-b2d7-289816f4dd43">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7594745-04d5-4631-b2d7-289816f4dd43</a>	
<b>KB4011659 January 2018 Microsoft Word 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0b5a1bf0-3043-47fd-afc3-d2fb55a46a96">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0b5a1bf0-3043-47fd-afc3-d2fb55a46a96</a>	
<b>KB4011611 January 2018 Microsoft Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3b2c376c-ea57-4925-b81d-3b765d456f2b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3b2c376c-ea57-4925-b81d-3b765d456f2b</a>	Extract to a location and run the extraction to install. Check installed updates for a successful install.





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KB4011610 January 2018 Microsoft Office 2010	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=56447">https://www.microsoft.com/en-us/download/details.aspx?id=56447</a>	
KB4054172 January 2018 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=537fc3ba-4248-40b8-9498-8a671abebfe9">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=537fc3ba-4248-40b8-9498-8a671abebfe9</a>	Install the following KB4054172, KB4019990 and KB4054176
KB2719662	Create the following Registry Keys	
	Key=[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\Windows\Sidebar\ Value Name=[TurnOffSidebar] Type=[REG_DWORD] Data=[1]	
KB2269637	Create the following Registry Keys	
	Key=[ HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\ Value Name=[CWDIllegalInDllSearch] Type=[REG_DWORD] Data=[1]	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	



**Windows 2008R2 (INW Server)**

KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB3177467 Service Stack	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f1b99598-a22d-4fbe-9b63-09724833acc3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f1b99598-a22d-4fbe-9b63-09724833acc3</a>	Required for successful Monthly rollup installation without uninstalling previous monthly rollup
	<b>Reboot Required</b>	
KB4048957 November 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=435d3006-04ae-4c27-a5f9-3c36f09e58ed">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=435d3006-04ae-4c27-a5f9-3c36f09e58ed</a>	
	<b>Reboot Required</b>	
KB4054518 December 2017 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=09064e30-6f3e-4c99-8d09-fbc2ba06b436">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=09064e30-6f3e-4c99-8d09-fbc2ba06b436</a>	
	<b>Reboot Required</b>	
KB4054172 January 2018 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fdecaf44-50a3-4667-a935-f9e7af0bb317">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fdecaf44-50a3-4667-a935-f9e7af0bb317</a>	
KB2269637	Create the following Registry Keys	
	Key=[ HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\ Value Name=[CWDIllegalInDllSearch] Type=[REG_DWORD] Data=[1]	
	Make the Following Registry Change	



	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	

### MLCL V6.9.6 2018 Patch Updates 4 (Applies only to old image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.
- 2) Pay attention to the Notes section for special handling instructions
- 3) Patches must be applied in order except where indicated.
- 4) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB4056894 January 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=63bb3909-e5fe-45a2-8d59-44f9df52317f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=63bb3909-e5fe-45a2-8d59-44f9df52317f</a>	
	<b><u>Reboot Required</u></b>	



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KB4091290	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c70372c5-bd6c-48f7-b562-c326bc1327a4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c70372c5-bd6c-48f7-b562-c326bc1327a4</a>	
KB4074598 February Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=651e95ab-6e7c-4ea6-9cd2-3cbabd9b76f0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=651e95ab-6e7c-4ea6-9cd2-3cbabd9b76f0</a>	
	<b><u>Reboot Required</u></b>	
KB4099950	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0872a60d-385a-4486-8322-9e759802017a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0872a60d-385a-4486-8322-9e759802017a</a>	<b>CAUTION: This patch has to be applied before March Monthly rollup KB4088875. Not applying this before March rollup can affect NIC settings.</b>
KB4088875 March Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3ed75c38-aa36-437e-bf4f-574789591e03">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3ed75c38-aa36-437e-bf4f-574789591e03</a>	
	<b><u>Reboot Required</u></b>	
KB4096040	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=be3cdb55-862c-4362-b015-894e381e07f9">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=be3cdb55-862c-4362-b015-894e381e07f9</a>	
KB4099467	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f325deb3-28fc-45a3-ab7b-5264f801daf6">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f325deb3-28fc-45a3-ab7b-5264f801daf6</a>	
	<b><u>Reboot Required</u></b>	
KB4093118 April Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=647f49ef-0f0a-49dc-9766-dd255cded1af">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=647f49ef-0f0a-49dc-9766-dd255cded1af</a>	
KB4011707	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=969c78ec-cd6a-4295-ade3-a57ca7f8b3b2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=969c78ec-cd6a-4295-ade3-a57ca7f8b3b2</a>	
KB3114874	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9fae99be-ddc3-4e37-b3ee-9b631fd50eca">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9fae99be-ddc3-4e37-b3ee-9b631fd50eca</a>	



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KB3114416	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=da77f81d-187b-4cae-a75a-d64766a7713d">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=da77f81d-187b-4cae-a75a-d64766a7713d</a>	
KB4057114	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0aa653a1-1459-44cd-be0b-0fcb77e4ef85">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0aa653a1-1459-44cd-be0b-0fcb77e4ef85</a>	<p><b>Install AMD64_X86-en-sqlserver2008-kb4057114-x86_a9295f99a2ee7c714f540f3697be0fd4aee7a7bf.exe</b>  Run from a cmd prompt as Administrator using the following command: AMD64_X86-en-sqlserver2008-kb4057114-x86_a9295f99a2ee7c714f540f3697be0fd4aee7a7bf.exe /ACTION=Patch /INSTANCENAME=MSSQLSERVER /IGNORESERVICERESTARTSTATE</p>
	<b><u>Reboot Required</u></b>	
KB4103718 May 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3f4d0c73-a177-48cf-a3e7-97d1a94cba87">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3f4d0c73-a177-48cf-a3e7-97d1a94cba87</a>	
	<b><u>Reboot Required</u></b>	
KB4095874 .NET 3.5 SP1 and KB4096495 .NET 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d000d6a2-3321-4381-9a24-3345b2cd0435">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d000d6a2-3321-4381-9a24-3345b2cd0435</a>	<p><b>KB4099633 is the KB number to use to download and install the patch for KB4095874 and KB4096495. Inside your downloaded file has multiple KBs. Follow these order of installation:</b></p> <ol style="list-style-type: none"> <li>1) Install KB4019990(You may see already installed message for this KB, ignore and continue)</li> <li>2) KB4095874</li> <li>3) KB4096495</li> </ol>
	<b><u>Reboot Required</u></b>	
KB4022146	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5795d737-4091-4784-a707-007b99d3daef">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5795d737-4091-4784-a707-007b99d3daef</a>	<p><b>KB4022146</b> <b>Microsoft Excel 2010</b></p>



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Microsoft Excel 2010		
KB2899590 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d8acdbaf-7f56-4c65-a898-9fd7c7a2d83a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d8acdbaf-7f56-4c65-a898-9fd7c7a2d83a</a>	KB2899590 Microsoft Office 2010
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b>Reboot Required</b>	

Windows 2008R2 (INW Server)

KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
CP034882 Firmware Update for ML350 Gen 9 Server	<a href="https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_116f29414b06465c96e6bd94ae">https://support.hpe.com/hpsc/swd/public/detail?swItemId=MTX_116f29414b06465c96e6bd94ae</a>	Refer to “ML350 Gen9 BIOS Update to v2.56 Instructions” section above for installation instructions
	<b>Reboot Required</b>	
KB4056894	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fc887fd2-cd35-434b-b6e3-1fef99b2e7ce">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fc887fd2-cd35-434b-b6e3-1fef99b2e7ce</a>	



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January 2018 Monthly Rollup		
	<b>Reboot Required</b>	
KB4091290	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c96d43ea-477f-47a1-919f-6936c8d628a3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c96d43ea-477f-47a1-919f-6936c8d628a3</a>	
KB4074598 February Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f3ab18cb-219e-4287-b14c-3a05c8d9479a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f3ab18cb-219e-4287-b14c-3a05c8d9479a</a>	
	<b>Reboot Required</b>	
KB4099950	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=38b41383-c716-488c-a937-163bf04f6956">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=38b41383-c716-488c-a937-163bf04f6956</a>	<b>CAUTION: This patch has to be applied before March Monthly rollup KB4088875. Not applying this before March rollup can affect NIC settings.</b>
KB4096040	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3af42ab1-13ed-42b5-9e4e-a841a71e7f2c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3af42ab1-13ed-42b5-9e4e-a841a71e7f2c</a>	
KB4088875 March Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=03df6731-e0a6-4917-9da3-161a0b7f6b09">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=03df6731-e0a6-4917-9da3-161a0b7f6b09</a>	
KB4099467	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=38800bcc-c954-4822-b864-6ae91cc19bb2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=38800bcc-c954-4822-b864-6ae91cc19bb2</a>	
	<b>Reboot Required</b>	
KB4093118 April Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2c7363c-323f-4e92-892a-90b83027e4aa">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2c7363c-323f-4e92-892a-90b83027e4aa</a>	
	<b>Reboot Required</b>	
KB4057114	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0aa653a1-1459-44cd-be0b-0fcb77e4ef85">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0aa653a1-1459-44cd-be0b-0fcb77e4ef85</a>	<b>Install AMD64-en-sqlserver2008-kb4057114-x64_9ce0b7c5909d8fcc5b9a12d17f29b7864a9df33a.exe file. Run</b>



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		from a cmd prompt as Administrator using the following command: AMD64-en-sqlserver2008-kb4057114-x64_9ce0b7c5909d8fcc5b9a12d17f29b7864a9df33a.exe /ACTION=Patch /INSTANCENAME=MSSQLSERVER /IGNORESERVICERESTARTSTATE
	<b>Reboot Required</b>	
<b>KB4103718</b> May 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4fe75106-a2ba-4186-aecd-10424a19225e">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4fe75106-a2ba-4186-aecd-10424a19225e</a>	
	<b>Reboot Required</b>	
<b>KB4095874</b> .NET 3.5 SP1 and <b>KB4096495</b> .NET 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=62ccd808-b5a5-4be9-8a38-8e2a829e29d1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=62ccd808-b5a5-4be9-8a38-8e2a829e29d1</a>	<b>KB4099633 is the KB number to use to download and install the patch for KB4095874 and KB4096495. The downloaded file has multiple KBs. Follow these order of installation:</b> <b>1) Install KB4019990(You may see already installed message for this KB, ignore and continue)</b> <b>2) KB4095874</b> <b>3) KB4096495</b>
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	





	State=dword:00010000	
	<b>Reboot Required</b>	

### MLCL V6.9.6 2018 Patch Updates 5 (Applies only to old image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.
- 2) Pay attention to the Notes section for special handling instructions
- 3) Patches must be applied in order except where indicated.
- 4) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
Z440 BIOS Update to v2.45	<a href="https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828">https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828</a>	Refer to Z440 BIOS Update to v2.45 Instructions above.
	<b>Reboot Required</b>	
KB4284826 June 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=326a9830-3983-402d-b48b-7a35f99c516a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=326a9830-3983-402d-b48b-7a35f99c516a</a>	
	<b>Reboot Required</b>	



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KB4338818 July 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ea409dca-1368-48cf-94c1-d510b1690d74">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ea409dca-1368-48cf-94c1-d510b1690d74</a>	
	<b>Reboot Required</b>	
KB4338821	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dafd8f28-09a9-4d17-8a6c-93341a8379ec">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dafd8f28-09a9-4d17-8a6c-93341a8379ec</a>	
	<b>Reboot Required</b>	
KB4343900 August 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d785f6dd-d90b-4cb9-838a-8faf5971165f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d785f6dd-d90b-4cb9-838a-8faf5971165f</a>	
	<b>Reboot Required</b>	
KB4343894 IE 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3fc3f78a-19c5-45bc-9f06-6a14cec0f007">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3fc3f78a-19c5-45bc-9f06-6a14cec0f007</a>	
	<b>Reboot Required</b>	
KB4457144 September 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f5c88de4-720e-4ed1-b95f-6ce4d4d06087">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f5c88de4-720e-4ed1-b95f-6ce4d4d06087</a>	
	<b>Reboot Required</b>	
KB4345590 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=08968031-142d-4dcb-9fd8-29fbd6ae9960">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=08968031-142d-4dcb-9fd8-29fbd6ae9960</a>	Install KB4344149 first (restart if prompted) followed by KB4344152
	<b>Reboot Required</b>	



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<b>KB3203468</b> <b>Microsoft</b> <b>Office Proof</b> <b>2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7a599998-ca41-4840-90ea-8143724e5c6a</a>	
<b>KB4032223</b> <b>Microsoft Excel</b> <b>2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cd28cd6b-b3c2-4266-b417-d26d53f7d75f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cd28cd6b-b3c2-4266-b417-d26d53f7d75f</a>	
<b>KB4227175</b> <b>Microsoft Excel</b> <b>2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bba3a281-f10f-45bc-adf8-9e4436d4c39b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bba3a281-f10f-45bc-adf8-9e4436d4c39b</a>	
<b>KB4018311</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f96028c5-b20a-41a6-9963-83261d690a62">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f96028c5-b20a-41a6-9963-83261d690a62</a>	
<b>KB3213636</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7e7049e7-b870-4c87-af60-bc5a0bace002">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7e7049e7-b870-4c87-af60-bc5a0bace002</a>	
<b>KB4022198</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cc4958f4-308d-474c-a655-567e41cf9b1d">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cc4958f4-308d-474c-a655-567e41cf9b1d</a>	
<b>KB3115197</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=393d97f5-b447-43c5-9e0c-b6707c8d29ce">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=393d97f5-b447-43c5-9e0c-b6707c8d29ce</a>	
<b>KB3115248</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4cc02a6f-9551-4909-bce1-4a45d41404ec">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4cc02a6f-9551-4909-bce1-4a45d41404ec</a>	
<b>KB4022199</b> <b>Microsoft</b> <b>Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3f3c71ef-c743-4824-8951-deb8cdabf2eb">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3f3c71ef-c743-4824-8951-deb8cdabf2eb</a>	



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KB4022137 Microsoft Office 2010 SP2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9d64be86-d3f2-47a4-a9a3-f8ae05842ed3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9d64be86-d3f2-47a4-a9a3-f8ae05842ed3</a>	
KB4018310 Microsoft PowerPoint 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4cc49d2c-fe7e-4a55-987e-4b1d4ccb8e1c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4cc49d2c-fe7e-4a55-987e-4b1d4ccb8e1c</a>	
KB4011186 Microsoft Publisher 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4564150c-2ab1-42e4-a135-105b924dc45d">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4564150c-2ab1-42e4-a135-105b924dc45d</a>	
KB4022202 Microsoft Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=59253783-a245-4897-993e-57a2ed30c0e0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=59253783-a245-4897-993e-57a2ed30c0e0</a>	
KB4011674 Microsoft Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b13107b6-02b9-4f00-a6d9-3bf44a3c1247">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b13107b6-02b9-4f00-a6d9-3bf44a3c1247</a>	
KB4022141 Microsoft Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2f428f2-7c02-4a49-8680-4407404cb7a2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2f428f2-7c02-4a49-8680-4407404cb7a2</a>	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	



**Windows 2008R2 (INW Server)**

KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
HPESBHF03874 rev.1 ML350 Gen9 (CP035797)	<a href="https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&amp;swItemId=MTX_2fad1bbda82e4d5ca0673a1b43&amp;swEnvOid=4184">https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&amp;swItemId=MTX_2fad1bbda82e4d5ca0673a1b43&amp;swEnvOid=4184</a>	Refer to ML350 Gen9 BIOS Update to 5/21/2018 Instructions above
	<b>Reboot Required</b>	
KB4284826 June 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=999fa80e-c59d-4ff6-8268-c6a8c365f428">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=999fa80e-c59d-4ff6-8268-c6a8c365f428</a>	
	<b>Reboot Required</b>	
KB4338818 July 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1c930eab-7b7e-4616-b5b5-d6e4a723bc71">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1c930eab-7b7e-4616-b5b5-d6e4a723bc71</a>	
	<b>Reboot Required</b>	
KB4338821	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8e951203-5d8e-4f69-9560-ce698c4f7a77">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8e951203-5d8e-4f69-9560-ce698c4f7a77</a>	
	<b>Reboot Required</b>	
KB4343900 August 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71600c77-2a56-4ba2-991b-ad477cfc9eb9">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71600c77-2a56-4ba2-991b-ad477cfc9eb9</a>	Create the following registry settings if they do not exist Key=[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management]



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		Value Name=[ FeatureSettingsOverride] Type=[REG_DWORD] Data=[0] Key=[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management] Value Name=[ FeatureSettingsOverrideMask] Type=[REG_DWORD] Data=[3]
	<b>Reboot Required</b>	
KB4343894 IE 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=6525d333-fafc-4345-ad06-6edc8db84aaf">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=6525d333-fafc-4345-ad06-6edc8db84aaf</a>	
	<b>Reboot Required</b>	
KB4457144 September 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2986185e-cd31-4f1d-99a5-bea6bd1ef53c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2986185e-cd31-4f1d-99a5-bea6bd1ef53c</a>	
	<b>Reboot Required</b>	
KB4345590 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14afae30-094f-4dca-ba5f-e22347edb98f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14afae30-094f-4dca-ba5f-e22347edb98f</a>	Install KB4344149 first (restart if prompted) followed by KB4344152
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b>Reboot Required</b>	



## MLCL V6.9.6 2019 Patch Updates 6 (Applies only to old image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.  
**NOTE: If the system was reimaged with the new Patched Image then apply only Patch Updates 7 section below**
- 1) Pay attention to the Notes section for special handling instructions
- 2) Patches must be applied in order except where indicated.
- 3) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.

## Adobe Reader DC MUI Installation and Configuration

Follow the below instructions to install and configure the Adobe Reader DC MUI on 6.9.6 R3 Acquisition system, Review workstation and INW server.

### Adobe Reader DC MUI Installer and Patch Download Locations:

- MUI Installer:
  - o Location: <ftp://ftp.adobe.com/pub/adobe/reader/win/AcrobatDC/1500720033/>
  - o File Name: AcroRdrDC1500720033\_MUI.exe
- Patch (**Adobe Acrobat Reader MUI DC (Continuous Track) update - All languages**):
  - o Location: <https://supportdownloads.adobe.com/detail.jsp?ftpID=6523>

**Note:** v2019.008.20081 is the adobe reader DC patch version tested and qualified for installation.

### Adobe Reader DC MUI Installer and Patch Installation Instructions:

**Note:** The Adobe Reader DC automatically uninstalls the previous version of Adobe Reader XI during installation.

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as member of **local** administrator group to Windows and Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in



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as member of **domain** administrator group to Windows and Custom Shell.

- On INW server, you must be logged in as member of **domain** administrator group to Windows.
- 2) Navigate to the adobe installer location, right click **AcroRdrDC1500720033\_MUI.exe** and select **Run as Administrator**.
- 3) Wait for the file extraction to complete.
- 4) Keep the default folder location and click **Install**.
- 5) Wait for the installation to complete.
- 6) Click **Finish**.
- 7) Navigate to the adobe patch location, double click **AcroRdrDCUpd1900820081\_MUI.msp**.
- 8) Click **Update**.
- 9) Wait for the patch installation to complete.
- 10) Click **Finish**.
- 11) Restart the system.

### Adobe Reader DC MUI Configuration:

Adobe Reader DC must be configured under the following windows users in order:

- Workstations:
  - MLCLLogonUser
  - MLCLTechUser
- Server:
  - Administrator
  - MLCLTechUser

### MLCLLogonUser:

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as **local MLCLLogonUser** to Windows and **local MLCLUser** to Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in as **domain MLCLLogonUser** to Windows and **domain MLCLUser** to Custom Shell.
- 2) Click **Start > All Programs > Acrobat Reader DC**.
- 3) At license agreement window, click **Accept**.
- 4) Close Welcome window.
- 5) Click **Edit > Preferences > General**.





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- 6) Deselect **Show me messages when I launch Adobe Acrobat Reader**.
- 7) Click **Internet**.
- 8) Deselect **Allow Speculative downloading in the background**.
- 9) Click **Reviewing**.
- 10) Click **Tracker**.
- 11) Deselect **Show notification icon in system tray**.
- 12) Click **OK**.
- 13) Click **Edit > Preferences > Reviewing**.
- 14) Deselect **Show Welcome dialog when opening file**.
- 15) Deselect **Show server connection warning dialog when opening file**.
- 16) Click **OK**.
- 17) Close **Adobe Reader DC**.
- 18) Navigate to **C:\Program Files\GE Healthcare\MLCL\Doc** folder.
- 19) Open **Mac-Lab Operator's Manual.pdf**.
- 20) Click **Edit > Preferences > Documents**.
- 21) Select **Remember current state of the Tools pane**.
- 22) Click **OK**.
- 23) Click **View > Show/Hide** and deselect **Tools Pane**.
- 24) Close **Adobe Reader DC**.
- 25) If present, delete the Acrobat Reader DC shortcut from the desktop.
- 26) Click **Continue**.
- 27) Enter administrator Username and Password and Click Yes.

### MLCLTechUser:

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as **local MLCLTechUser** to Windows and Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in as **domain MLCLTechUser** to Windows and Custom Shell.
  - On INW server, you must be logged in as **domain MLCLTechUser** to Windows.
- 2) Click **Start > All Programs > Acrobat Reader DC**.
- 3) Close Welcome window.



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- 4) Click **Edit > Preferences > General**.
- 5) Deselect **Show me messages when I launch Adobe Acrobat Reader**.
- 6) Click **Internet**.
- 7) Deselect **Allow Speculative downloading in the background**.
- 8) Click **Reviewing**.
- 9) Click **Tracker**.
- 10) Deselect **Show notification icon in system tray**.
- 11) Click **OK**.
- 12) Click **Edit > Preferences > Reviewing**.
- 13) Deselect **Show Welcome dialog when opening file**.
- 14) Deselect **Show server connection warning dialog when opening file**.
- 15) Click **OK**.
- 16) Close **Adobe Reader DC**.
- 17) Navigate to **C:\Program Files\GE Healthcare\MLCL\Doc** folder on workstations and **C:\Program Files (x86)\GE Healthcare\MLCL\Doc** folder on server.
- 18) Open **Mac-Lab Operator's Manual.pdf**.
- 19) Click **Edit > Preferences > Documents**.
- 20) Select **Remember current state of the Tools pane**.
- 21) Click **OK**.
- 22) Click **View > Show/Hide** and deselect **Tools Pane**.
- 23) Close **Adobe Reader DC**.
- 24) If present, delete the Acrobat Reader DC shortcut from the desktop.

### Administrator:

- 1) Note the following login requirements:
  - On INW server, you must be logged in as **domain Administrator** to Windows.
- 2) Click **Start > All Programs > Acrobat Reader DC**.
- 3) Close Welcome window.
- 4) Click **Edit > Preferences > General**.
- 5) Deselect **Show me messages when I launch Adobe Acrobat Reader**.
- 6) Click **Internet**.
- 7) Deselect **Allow Speculative downloading in the background**.



- 8) Click **Reviewing**.
- 9) Click **Tracker**.
- 10) Deselect **Show notification icon in system tray**.
- 11) Click **OK**.
- 12) Click **Edit > Preferences > Reviewing**.
- 13) Deselect **Show Welcome dialog when opening file**.
- 14) Deselect **Show server connection warning dialog when opening file**.
- 15) Click **OK**.
- 16) Close **Adobe Reader DC**.
- 17) Navigate to **C:\Program Files\GE Healthcare\MLCL\Doc** folder on workstations and **C:\Program Files (x86)\GE Healthcare\MLCL\Doc** folder on server.
- 18) Open **Mac-Lab Operator's Manual.pdf**.
- 19) Click **Edit > Preferences > Documents**.
- 20) Select **Remember current state of the Tools pane**.
- 21) Click **OK**.
- 22) Click **View > Show/Hide** and deselect **Tools Pane**.
- 23) Close **Adobe Reader DC**.
- 24) If present, delete the Acrobat Reader DC shortcut from the desktop.

**Disable Adobe Reader Update Service:**

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as member of **local** administrator group to Windows and Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in as member of **domain** administrator group to Windows and Custom Shell.
  - On INW server, you must be logged in as member of **domain** administrator group to Windows.
- 2) Launch Services.msc.
- 3) Stop and Disable **Adobe Acrobat Update Service**.

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	



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	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB4490628 Servicing Stack Update	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71c7172c-f6ea-493d-ab74-65d2548e834b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71c7172c-f6ea-493d-ab74-65d2548e834b</a>	
KB4462923 October 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2f075cf-7563-40e7-9aa3-8d2562e60cf9">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2f075cf-7563-40e7-9aa3-8d2562e60cf9</a>	
	<b><u>Reboot Required</u></b>	
KB4467107 November 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=81c3ab78-c5a5-403b-b347-0d9421539574">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=81c3ab78-c5a5-403b-b347-0d9421539574</a>	
	<b><u>Reboot Required</u></b>	
KB4471318 December 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=345b59c2-a130-42aa-9b98-a66dd085451c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=345b59c2-a130-42aa-9b98-a66dd085451c</a>	
	<b><u>Reboot Required</u></b>	
KB4480970 January 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4972abbb-3924-406f-8612-4b6f3ad53442">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4972abbb-3924-406f-8612-4b6f3ad53442</a>	
	<b><u>Reboot Required</u></b>	
KB4486563 February 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b29b6d12-dbd3-4d44-b0cf-f6e5e298cab2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b29b6d12-dbd3-4d44-b0cf-f6e5e298cab2</a>	
	<b><u>Reboot Required</u></b>	



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KB4489878 March 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=039eb986-8841-4931-88e9-7f429ed74fb4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=039eb986-8841-4931-88e9-7f429ed74fb4</a>	
	<b><u>Reboot Required</u></b>	
KB4493472 April 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c263402a-d44d-4473-bff6-40e5cc468c82">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c263402a-d44d-4473-bff6-40e5cc468c82</a>	
	<b><u>Reboot Required</u></b>	
KB4499164 May 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=94e0a99a-327b-4a75-a40a-b38f0a4e18cf">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=94e0a99a-327b-4a75-a40a-b38f0a4e18cf</a>	
	<b><u>Reboot Required</u></b>	
KB4470641 .NET Framework 3.5.1 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3ef1b3d-4a92-45b1-b9b6-203d388abe1a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3ef1b3d-4a92-45b1-b9b6-203d388abe1a</a>	
	<b><u>Reboot Required</u></b>	
KB4470637 .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7b427c69-99db-4e3d-838f-3d9f5df18a6c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7b427c69-99db-4e3d-838f-3d9f5df18a6c</a>	Right Click on the file and Run as Administrator. Note: This will be extracted to a temporary location and the update will run. Wait till .Net Update window display and follow onscreen instructions
	<b><u>Reboot Required</u></b>	



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KB4480059 .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8c1b025-fd0a-4c5c-9aa8-3549f8eef894">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8c1b025-fd0a-4c5c-9aa8-3549f8eef894</a>	
<b><u>Reboot Required</u></b>		
KB3114565 November 2018 Office 2010 SP2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f8597b0b-75c8-49e9-b352-2c036324dcac">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=f8597b0b-75c8-49e9-b352-2c036324dcac</a>	
KB4461570 December 2018 Office 2010 SP2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=67f17a1d-98a3-4554-8d26-21e0e32454d8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=67f17a1d-98a3-4554-8d26-21e0e32454d8</a>	
KB2553332 January 2019 Office 2010 SP2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c23a7e38-0ae6-4565-ac68-fcbc0ba37194">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c23a7e38-0ae6-4565-ac68-fcbc0ba37194</a>	
KB4461614 January 2019 Office 2010 SP2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e21643f5-d332-490b-94f6-666bcf37a48">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e21643f5-d332-490b-94f6-666bcf37a48</a>	
KB4461466 October 2018 Excel 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1914e637-8c9a-49fa-8361-2f621e2cb1cf">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1914e637-8c9a-49fa-8361-2f621e2cb1cf</a>	
KB4461577 December 2018 Excel 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7419ea5-4069-4e51-bd42-d6d0f89b0000">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7419ea5-4069-4e51-bd42-d6d0f89b0000</a>	



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KB4092439 October 2018 Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2dc153d4-a8a6-461d-bcee-96d16d168ec3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2dc153d4-a8a6-461d-bcee-96d16d168ec3</a>	
KB4461625 January 2019 Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ce188561-f88e-4130-b478-c71e737af957">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ce188561-f88e-4130-b478-c71e737af957</a>	Install both the language version e.g. all-wordintl-en-us_.... and All-word-x-none_.....
KB4461521 December 2018 PowerPoint 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e1eedb8e-0c58-4b7d-9da5-b34066d06ad8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e1eedb8e-0c58-4b7d-9da5-b34066d06ad8</a>	
KB4462230 Microsoft Excel 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2728f82a-4baf-438c-93bb-0c6ef3ab2628">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2728f82a-4baf-438c-93bb-0c6ef3ab2628</a>	
KB3115120 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=57460e64-0e98-46c3-9fdd-5a6b410b9e2e">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=57460e64-0e98-46c3-9fdd-5a6b410b9e2e</a>	
KB3191908 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3d5594e2-20dc-4714-8b1f-521061557021">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3d5594e2-20dc-4714-8b1f-521061557021</a>	
KB3213631 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9c1e1b48-fc01-4698-824c-4a3767377eae">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9c1e1b48-fc01-4698-824c-4a3767377eae</a>	
KB4022206 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bac66ae6-b816-4718-89c2-0e3af0f223a2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=bac66ae6-b816-4718-89c2-0e3af0f223a2</a>	Ignore Windows installer message if they appear
KB4022208 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2ff1653c-e6e9-41a7-8df7-6ee81ec2dd2c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2ff1653c-e6e9-41a7-8df7-6ee81ec2dd2c</a>	Ignore Windows installer message if they appear



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KB4462177 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80edffc4-eab0-475b-a4f3-8b1d531db0dd">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80edffc4-eab0-475b-a4f3-8b1d531db0dd</a>	
KB4462223 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=334be4e6-18ce-4d4c-a133-3c720d8c1262">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=334be4e6-18ce-4d4c-a133-3c720d8c1262</a>	
KB4461623 Microsoft Outlook 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cefe4cf0-ac44-44cd-872b-fb6e5c292754">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cefe4cf0-ac44-44cd-872b-fb6e5c292754</a>	Install both the language version e.g. all-wordintl-en-us_.... and All-word-x-none_.....
KB3128031 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=efdfb48c-174b-4b88-9dbe-18431473ece3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=efdfb48c-174b-4b88-9dbe-18431473ece3</a>	
KB4092436 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8df3741-3ae0-40de-9857-52ef03468f16">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8df3741-3ae0-40de-9857-52ef03468f16</a>	
KB4022136 Microsoft PowerPoint 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2e3b299-dd41-4d04-be48-c53abc9705bf">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d2e3b299-dd41-4d04-be48-c53abc9705bf</a>	Install both the language version e.g. all-wordintl-en-us_.... and All-word-x-none_.....
KB4487078 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30526e5c-503a-4300-8d4c-c215d1a30349">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30526e5c-503a-4300-8d4c-c215d1a30349</a>	Install KB4483455 and KB4483458
KB4340004 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c52c0560-8129-4649-812d-08473bb26801">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c52c0560-8129-4649-812d-08473bb26801</a>	Install KB4338602
KB4345679 .NET	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1b11fddd-9a22-472e-a412-ef225a5de41a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1b11fddd-9a22-472e-a412-ef225a5de41a</a>	Install KB4344173





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Framework 3.5.1, 4.5.2		
KB4487121 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b16b18c-5d7c-4ab0-a6cd-366b2553e1b2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b16b18c-5d7c-4ab0-a6cd-366b2553e1b2</a>	Install KB4483474 and KB4483483
KB4493435 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4a2f0647-ecd1-4e6c-9c83-c19f37e7b3e0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4a2f0647-ecd1-4e6c-9c83-c19f37e7b3e0</a>	
<b><u>Reboot Required</u></b>		
KB3064209 CPU Microcode update	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=47656">https://www.microsoft.com/en-us/download/details.aspx?id=47656</a>	Ignore if you receive already installed on the computer message
<b><u>Reboot Required</u></b>		
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
<b><u>Reboot Required</u></b>		
CodeMeter Uninstallation	Please see section OPTIONAL - CodeMeter Uninstallation	

### Windows 2008R2 (INW Server)



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KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB4490628 Servicing Stack Update	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1d4f0343-a41a-4782-8aed-18a620431171">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1d4f0343-a41a-4782-8aed-18a620431171</a>	
KB4462923 October 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3e23546-1642-4edc-bdd4-932f941f97a1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3e23546-1642-4edc-bdd4-932f941f97a1</a>	
	<b><u>Reboot Required</u></b>	
KB4467107 November 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1f74c5cc-0f12-40e5-a947-81516a1cce12">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1f74c5cc-0f12-40e5-a947-81516a1cce12</a>	
	<b><u>Reboot Required</u></b>	
KB4471318 December 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3df43753-6cbf-40d1-9249-db8009bbbc7a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3df43753-6cbf-40d1-9249-db8009bbbc7a</a>	
	<b><u>Reboot Required</u></b>	
KB4480970 January 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=baf43ca5-a997-48e2-bb96-375193004bb8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=baf43ca5-a997-48e2-bb96-375193004bb8</a>	
	<b><u>Reboot Required</u></b>	
KB4486563 February 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9ec6ce3a-e6b5-4741-a44b-01d76ce427d1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9ec6ce3a-e6b5-4741-a44b-01d76ce427d1</a>	
	<b><u>Reboot Required</u></b>	



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KB4489878 March 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4f0792e3-3d80-41c3-bc5b-0440b0df9f20">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4f0792e3-3d80-41c3-bc5b-0440b0df9f20</a>	
<b>Reboot Required</b>		
KB4493472 April 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c8630c56-66ba-4f5f-8564-30d73f25beb8">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c8630c56-66ba-4f5f-8564-30d73f25beb8</a>	
<b>Reboot Required</b>		
KB4499164 May 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c832b037-3ac5-4dfb-b43b-cd70c004a803">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c832b037-3ac5-4dfb-b43b-cd70c004a803</a>	
<b>Reboot Required</b>		
KB4470641 .NET Framework 3.5.1 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=437d0478-b891-4d79-b5fb-4b7290d77334">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=437d0478-b891-4d79-b5fb-4b7290d77334</a>	
<b>Reboot Required</b>		
KB4470637 .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0fe7139a-9081-4151-9b83-c499dccb852b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0fe7139a-9081-4151-9b83-c499dccb852b</a>	Right Click on the file and Run as Administrator. Note: This will be extracted to a temporary location and the update will run. Wait till .Net Update window display and follow onscreen instructions.
<b>Reboot Required</b>		
KB4480059 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=eab83cf8-4e43-40cc-be52-caaf0fb1381c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=eab83cf8-4e43-40cc-be52-caaf0fb1381c</a>	



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4.5.2 Monthly Rollup		
KB4487078 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e220e2c6-d8a8-4a77-b509-a4db5c3e7736">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e220e2c6-d8a8-4a77-b509-a4db5c3e7736</a>	Install KB4483455 and KB4483458
KB4487121 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8f601e2c-ed42-409a-b754-3c5f402f4f9a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8f601e2c-ed42-409a-b754-3c5f402f4f9a</a>	Install KB4483474 and KB4483483
KB4493435 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=23f66904-5d8d-4e14-b06b-48157e4d9327">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=23f66904-5d8d-4e14-b06b-48157e4d9327</a>	
<b>Reboot Required</b>		
KB3064209 CPU Microcode update	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=47673">https://www.microsoft.com/en-us/download/details.aspx?id=47673</a>	Ignore if you receive already installed on the computer message
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
<b>Reboot Required</b>		



### MLCL V6.9.6 2019 Patch Updates 7 (Applies only to new image)

This section only applies to systems that were setup using new images. Refer to the steps below to determine the version of image you are running. The Microsoft patches in this section are same as the patches in update 6 section with the exception of .Net patches. The additional updates from above section to upgrade Adobe and uninstall codemeter do not apply to the new images as those changes are already incorporated in the updated images.

Determine which image version of 6.9.6 you are running by following these steps;

- 1) Log on to MLCL Systems (ACQ, GE REVIEW, INW, VIRTUAL REVIEW) as a user with administrative privileges e.g **Administrator**.
- 2) Select **Windows Start -> Run** and enter **Regedit** and Enter.
- 3) In **Regedit** window, navigate to **HKEY\_LOCAL\_MACHINE\SOFTWARE\GE Medical Systems**
- 4) Click on **GE Medical Systems**
- 5) Double click on **Image Version**
- 6) Compare the **Value Data** with the table below to determine if you are running old or new image
- 7) Exit the **Regedit** dialog.

MLCL System	Old Image Versions	New Image Version
ACQ	10192016	12132018
GE REVIEW	10192016	12132018
INW	10192016	12142018
VIRTUAL REVIEW	10282016	12172018

**Only for system setup using new images**

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	



## GE Healthcare

Z440 BIOS Update to v2.45	<a href="https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828">https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828</a>	Refer to Z440 BIOS Update to v2.45 Instructions above.
	<b><u>Reboot Required</u></b>	
KB4490628 Servicing Stack Update	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71c7172c-f6ea-493d-ab74-65d2548e834b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=71c7172c-f6ea-493d-ab74-65d2548e834b</a>	
KB4471318 December 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=345b59c2-a130-42aa-9b98-a66dd085451c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=345b59c2-a130-42aa-9b98-a66dd085451c</a>	
	<b><u>Reboot Required</u></b>	
KB4486563 February 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b29b6d12-dbd3-4d44-b0cf-f6e5e298cab2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b29b6d12-dbd3-4d44-b0cf-f6e5e298cab2</a>	
	<b><u>Reboot Required</u></b>	
KB4489878 March 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=039eb986-8841-4931-88e9-7f429ed74fb4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=039eb986-8841-4931-88e9-7f429ed74fb4</a>	
	<b><u>Reboot Required</u></b>	
KB4493472 April 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c263402a-d44d-4473-bff6-40e5cc468c82">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c263402a-d44d-4473-bff6-40e5cc468c82</a>	
	<b><u>Reboot Required</u></b>	
KB4499164 May 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=94e0a99a-327b-4a75-a40a-b38f0a4e18cf">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=94e0a99a-327b-4a75-a40a-b38f0a4e18cf</a>	
	<b><u>Reboot Required</u></b>	



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<b>KB2901907</b> .NET Framework 4.5.2 Installer	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=42642">https://www.microsoft.com/en-us/download/details.aspx?id=42642</a>	Right click and Run as Administrator
<b>KB4019112</b> .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4</a>	Run KB4014514 and KB4014504 only. For KB4014514, right click and Run as Administrator, <b>NOTE: Restart if prompted</b>
<b>KB4055269</b> January 2018 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=537fc3ba-4248-40b8-9498-8a671abebfe9">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=537fc3ba-4248-40b8-9498-8a671abebfe9</a>	Install the following KB4054172, KB4019990 and KB4054176 <b>NOTE: KB4019990 - You may see already installed message for this KB, ignore and continue</b>
<b>KB4095874</b> .NET 3.5 SP1 and KB4096495 .NET 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d000d6a2-3321-4381-9a24-3345b2cd0435">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d000d6a2-3321-4381-9a24-3345b2cd0435</a>	<b>KB4099633 is the KB number to use to download and install the patch for KB4095874 and KB4096495. Inside your downloaded file has multiple KBs. Follow these orders of installation:</b> <ol style="list-style-type: none"> <li>1) <b>KB4095874</b></li> <li>2) <b>KB4096495 – Right click and Run as administrator</b></li> </ol>
<b>Reboot Required</b>		
<b>KB4345590</b> .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=08968031-142d-4dcb-9fd8-29fbd6ae9960">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=08968031-142d-4dcb-9fd8-29fbd6ae9960</a>	<b>Install KB4344149 first (restart if prompted) followed by KB4344152</b>
<b>KB4470637</b> .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7b427c69-99db-4e3d-838f-3d9f5df18a6c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=7b427c69-99db-4e3d-838f-3d9f5df18a6c</a>	Right Click on the file and Run as Administrator. Note: This will be extracted to a temporary location and the update will run. Wait till .Net Update window



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		display and follow onscreen instructions
<b>KB4480059</b> <b>.NET Framework 4.5.2</b> <b>Monthly Rollup</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8c1b025-fd0a-4c5c-9aa8-3549f8eef894">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b8c1b025-fd0a-4c5c-9aa8-3549f8eef894</a>	
<b>KB4461570</b> <b>December 2018 Office</b> <b>2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=67f17a1d-98a3-4554-8d26-21e0e32454d8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=67f17a1d-98a3-4554-8d26-21e0e32454d8</a>	
<b>KB2553332</b> <b>January</b> <b>2019 Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c23a7e38-0ae6-4565-ac68-fcbc0ba37194">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c23a7e38-0ae6-4565-ac68-fcbc0ba37194</a>	
<b>KB4461614</b> <b>January</b> <b>2019 Office 2010 SP2</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e21643f5-d332-490b-94f6-666fbcf37a48">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e21643f5-d332-490b-94f6-666fbcf37a48</a>	
<b>KB4461466</b> <b>October</b> <b>2018 Excel 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1914e637-8c9a-49fa-8361-2f621e2cb1cf">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1914e637-8c9a-49fa-8361-2f621e2cb1cf</a>	
<b>KB4461577</b> <b>December</b> <b>2018 Excel 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7419ea5-4069-4e51-bd42-d6d0f89b0000">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=d7419ea5-4069-4e51-bd42-d6d0f89b0000</a>	
<b>KB4092439</b> <b>October</b> <b>2018 Word 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2dc153d4-a8a6-461d-bcee-96d16d168ec3">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2dc153d4-a8a6-461d-bcee-96d16d168ec3</a>	
<b>KB4461625</b> <b>January 2019 Word</b> <b>2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ce188561-f88e-4130-b478-c71e737af957">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=ce188561-f88e-4130-b478-c71e737af957</a>	Install both the language version e.g. all-wordintl-en-us_.... and All-word-x-none_....
<b>KB4461521</b> <b>December</b> <b>2018 PowerPoint</b> <b>2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e1eedb8e-0c58-4b7d-9da5-b34066d06ad8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e1eedb8e-0c58-4b7d-9da5-b34066d06ad8</a>	
<b>KB4462230</b> <b>Microsoft</b> <b>Excel 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2728f82a-4baf-438c-93bb-0c6ef3ab2628">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=2728f82a-4baf-438c-93bb-0c6ef3ab2628</a>	
<b>KB4462177</b> <b>Microsoft</b> <b>Office 2010</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80edffc4-eab0-475b-a4f3-8b1d531db0dd">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=80edffc4-eab0-475b-a4f3-8b1d531db0dd</a>	





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KB4461623 Microsoft Outlook 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cefe4cf0-ac44-44cd-872b-fb6e5c292754">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=cefe4cf0-ac44-44cd-872b-fb6e5c292754</a>	Install both the language version e.g. all-wordintl-en-us_.... and All-word-x-none_.....
KB4487078 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30526e5c-503a-4300-8d4c-c215d1a30349">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30526e5c-503a-4300-8d4c-c215d1a30349</a>	
KB4487121 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b16b18c-5d7c-4ab0-a6cd-366b2553e1b2">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=5b16b18c-5d7c-4ab0-a6cd-366b2553e1b2</a>	
KB4493435 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4a2f0647-eed1-4e6c-9c83-c19f37e7b3e0">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4a2f0647-eed1-4e6c-9c83-c19f37e7b3e0</a>	
<b><u>Reboot Required</u></b>		
Z440 BIOS Update to v2.47 SP93482	<a href="https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828">https://support.hp.com/us-en/drivers/selfservice/hp-z440-workstation/6978828</a>	Refer to Z440 BIOS Update to v2.47 Instructions above.
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
<b><u>Reboot Required</u></b>		

### Windows 2008R2 (INW Server)

KB	Link	Notes
	Make the following Registry Change	



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	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
HPESBHF03874 rev.1 ML350 Gen9 (CP035797)	<a href="https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&amp;swItemId=MTX_2fad1bbda82e4d5ca0673a1b43&amp;swEnvOid=4184">https://support.hpe.com/hpsc/swd/public/detail?sp4ts.oid=1009483731&amp;swItemId=MTX_2fad1bbda82e4d5ca0673a1b43&amp;swEnvOid=4184</a>	Refer to ML350 Gen9 BIOS Update to 5/21/2018 Instructions above
	<b><u>Reboot Required</u></b>	
KB4490628 Servicing Stack Update	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1d4f0343-a41a-4782-8aed-18a620431171">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1d4f0343-a41a-4782-8aed-18a620431171</a>	
KB4471318 December 2018 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3df43753-6cbf-40d1-9249-db8009bbbc7a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3df43753-6cbf-40d1-9249-db8009bbbc7a</a>	
	<b><u>Reboot Required</u></b>	
KB4480970 January 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=baf43ca5-a997-48e2-bb96-375193004bb8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=baf43ca5-a997-48e2-bb96-375193004bb8</a>	
	<b><u>Reboot Required</u></b>	
KB4486563 February 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9ec6ce3a-e6b5-4741-a44b-01d76ce427d1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9ec6ce3a-e6b5-4741-a44b-01d76ce427d1</a>	
	<b><u>Reboot Required</u></b>	
KB4489878 March 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4f0792e3-3d80-41c3-bc5b-0440b0df9f20">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=4f0792e3-3d80-41c3-bc5b-0440b0df9f20</a>	
	<b><u>Reboot Required</u></b>	
KB4493472 April 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c8630c56-66ba-4f5f-8564-30d73f25beb8">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c8630c56-66ba-4f5f-8564-30d73f25beb8</a>	



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<b>Reboot Required</b>		
KB4499164 May 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c832b037-3ac5-4dfb-b43b-cd70c004a803">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c832b037-3ac5-4dfb-b43b-cd70c004a803</a>	
<b>Reboot Required</b>		
KB2901907 .NET Framework 4.5.2 Installer	<a href="https://www.microsoft.com/en-us/download/details.aspx?id=42642">https://www.microsoft.com/en-us/download/details.aspx?id=42642</a>	Right click and Run as Administrator
KB4019112 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=1daeb6d1-b103-4baa-bbde-5326e17e89e4</a>	Run KB4014514 and KB4014504 only. For KB4014514, right click and Run as Administrator, <b>NOTE: Restart if prompted</b>
KB4054172 January 2018 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fdecaf44-50a3-4667-a935-f9e7af0bb317">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=fdecaf44-50a3-4667-a935-f9e7af0bb317</a>	<b>KB4055269 is the KB number to use to download and install the following KB4054172, KB4019990 and KB4054176</b> <b>NOTE: KB4019990 - You may see already installed message for this KB, ignore and continue</b>
KB4095874 .NET 3.5 SP1 and KB4096495 .NET 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=62ccd808-b5a5-4be9-8a38-8e2a829e29d1">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=62ccd808-b5a5-4be9-8a38-8e2a829e29d1</a>	<b>KB4099633 is the KB number to use to download and install the patch for KB4095874 and KB4096495. Inside your downloaded file has multiple KBs. Follow these order of installation:</b> <b>1) KB4095874</b> <b>2) KB4096495 – Right click and Run as administrator</b>



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KB4345590 .NET Framework	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14afae30-094f-4dca-ba5f-e22347edb98f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=14afae30-094f-4dca-ba5f-e22347edb98f</a>	<b>Install KB4344149 first (restart if prompted) followed by KB4344152</b>
<b>Reboot Required</b>		
KB4470637 .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0fe7139a-9081-4151-9b83-c499dcdb852b">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0fe7139a-9081-4151-9b83-c499dcdb852b</a>	Right Click on the file and Run as Administrator. Note: This will be extracted to a temporary location and the update will run. Wait till .Net Update window display and follow onscreen instructions.
KB4480059 .NET Framework 4.5.2 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=eab83cf8-4e43-40cc-be52-caaf0fb1381c">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=eab83cf8-4e43-40cc-be52-caaf0fb1381c</a>	
KB4487078 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e220e2c6-d8a8-4a77-b509-a4db5c3e7736">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=e220e2c6-d8a8-4a77-b509-a4db5c3e7736</a>	
KB4487121 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8f601e2c-ed42-409a-b754-3c5f402f4f9a">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=8f601e2c-ed42-409a-b754-3c5f402f4f9a</a>	
KB4493435 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=23f66904-5d8d-4e14-b06b-48157e4d9327">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=23f66904-5d8d-4e14-b06b-48157e4d9327</a>	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	



**Reboot Required**

### MLCL V6.9.6 2019 Patch Updates 8 (Applies to both old and new image)

The following patches bring the MLCL system to a more recent patch level and address several security vulnerabilities. The following guidelines apply:

- 1) The above patches are required patches for 6.9.6 and must be applied first.
- 2) Pay attention to the Notes section for special handling instructions
- 3) Patches must be applied in order except where indicated.
- 4) Reboots are only required where indicated. If a Patch requests a reboot at another point, the system can be rebooted but it is not required.

### Adobe 12 (19.012.20034) Patch Installation Instructions

Follow the below instructions to install and configure the Adobe Reader DC MUI on 6.9.6 R1 Acquisition system, Review workstation and INW server.

- Patch (**Adobe Acrobat Reader MUI DC (Continuous Track) update - All languages**):

Location/Link	Version	Notes
<a href="https://supportdownloads.adobe.com/detail.jsp?ftpID=6693">https://supportdownloads.adobe.com/detail.jsp?ftpID=6693</a>	2019.012.20034	v2019.012.20034 patch is tested and qualified for installation

- 1) Note the following login requirements:
  - On standalone Acquisition systems, you must be logged in as member of **local** administrator group to Windows and Custom Shell.
  - On networked Acquisition systems, Review workstations, you must be logged in as member of **domain** administrator group to Windows and Custom Shell.
  - On INW server, you must be logged in as member of **domain** administrator group to Windows.
- 2) Navigate to the adobe installer location, double click on **AcroRdrDCUpd1901220034\_MUI.msp** and select Open
- 3) Wait for Windows Installer to complete.
- 4) Click **Update**.
- 5) When prompted for User Access Control Click on Yes to continue



- 6) Wait for the patch installation to complete.
- 7) Click **Finish**.

Windows 7 (Acquisition, Review and Virtual Review)		
KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
KB4503292 June 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3b33c94-4178-4957-a1c4-e6272b16a182">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=c3b33c94-4178-4957-a1c4-e6272b16a182</a>	
	<b><u>Reboot Required</u></b>	
KB4507449 July 2019 Monthly Rollup	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30651730-f83e-4702-9dd9-feab76438aed">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=30651730-f83e-4702-9dd9-feab76438aed</a>	
	<b><u>Reboot Required</u></b>	
KB4018313 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b10524c1-71cf-4b9f-956a-5dc8d8502919">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=b10524c1-71cf-4b9f-956a-5dc8d8502919</a>	
KB4464567 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dc49e69c-71ca-46ef-8afc-90257dd60246">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=dc49e69c-71ca-46ef-8afc-90257dd60246</a>	
KB4461619 Microsoft Word 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=369edcb8-e930-4f3f-a93c-fefa6b7012dd">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=369edcb8-e930-4f3f-a93c-fefa6b7012dd</a>	



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KB4462224 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=a9aa79ea-0e8f-4d55-a55c-5e5a82ad5f41">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=a9aa79ea-0e8f-4d55-a55c-5e5a82ad5f41</a>	
KB4464572 Microsoft Excel 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=72bbbf9a-584a-49ed-af5b-03248bc5a9ce">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=72bbbf9a-584a-49ed-af5b-03248bc5a9ce</a>	
KB4462174 Microsoft Office 2010	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0ddf0ad9-d785-4c1e-b472-40f7132015d8">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=0ddf0ad9-d785-4c1e-b472-40f7132015d8</a>	
	<b><u>Reboot Required</u></b>	
KB4507420 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=85b53f91-8683-4db9-a2c2-c6acac4d96df">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=85b53f91-8683-4db9-a2c2-c6acac4d96df</a>	<b>Only install setup files listed below and ignore other files:</b> 1) ndp45-kb4507001-x86_306e8aa676ccfe1a27a9bbe1fbaa93aeb87e91fb.exe 2) windows6.1-kb4507004-x86_625917bdc06b040d7c312e1b8d805a43ff31cf8b.msu
	<b><u>Reboot Required</u></b>	
KB4507434 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9f31d69d-d28d-401d-a3b6-9019ce60987f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=9f31d69d-d28d-401d-a3b6-9019ce60987f</a>	
	<b><u>Reboot Required</u></b>	
KB4474419 SHA-2 code signing support update	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=77e7077c-a23b-4d6e-ac42-6a120fbd3c37">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=77e7077c-a23b-4d6e-ac42-6a120fbd3c37</a>	



	<b><u>Reboot Required</u></b>	
<b>KB4512506</b> <b>August 2019</b> <b>Monthly Rollup</b>	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=70fb559c-f9e7-4c56-9d47-68cf0ffe68a2">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=70fb559c-f9e7-4c56-9d47-68cf0ffe68a2</a>	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	

**Windows 2008R2 (INW Server)**

KB	Link	Notes
	Make the following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00023c00	
<b>KB4503292</b> <b>June 2019</b> <b>Monthly Rollup</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=84167563-985e-4b02-ae56-ee75fa01e744">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=84167563-985e-4b02-ae56-ee75fa01e744</a>	
	<b><u>Reboot Required</u></b>	
<b>KB4507449</b> <b>July 2019</b> <b>Monthly Rollup</b>	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3c284887-ea1a-4c2b-9e34-00eaa6e44c0f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=3c284887-ea1a-4c2b-9e34-00eaa6e44c0f</a>	





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	<b><u>Reboot Required</u></b>	
KB4507420 .NET Framework 3.5.1, 4.5.2	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=63be6ae4-edc2-4100-bf2c-15d3f2d51f30">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=63be6ae4-edc2-4100-bf2c-15d3f2d51f30</a>	<b>Only install setup files listed below and ignore other files:</b> 1) ndp45-kb4507001-x64_be0daee8df411dedfc9fdb0b3eafd20af3afeb0.exe 2) windows6.1-kb4507004-x64_a7d988d65422c8cfbbbed141c95aea37a8743167.msu
	<b><u>Reboot Required</u></b>	
KB4507434 Internet Explorer 11	<a href="http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=86517a70-4a9b-4551-b46c-2c4d7497b64f">http://catalog.update.microsoft.com/v7/site/ScopedViewInline.aspx?updateid=86517a70-4a9b-4551-b46c-2c4d7497b64f</a>	
	<b><u>Reboot Required</u></b>	
KB4474419 SHA-2 code signing support update	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c4b6b6d8-f1a6-4134-9bb5-d739415c2637">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=c4b6b6d8-f1a6-4134-9bb5-d739415c2637</a>	
	<b><u>Reboot Required</u></b>	
KB4512506 August 2019 Monthly Rollup	<a href="https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=82bf6959-36ff-4d3e-a909-b1cf9ffc9880">https://www.catalog.update.microsoft.com/ScopedViewInline.aspx?updateid=82bf6959-36ff-4d3e-a909-b1cf9ffc9880</a>	
	Make the Following Registry Change	
	[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\WinTrust\Trust Providers\Software Publishing]	
	State=dword:00010000	
	<b><u>Reboot Required</u></b>	



## MLCL v6.9.6 Optional Security Updates

The following optional updates may be applied to further enhance the security profile of the MLCL systems. These updates should be evaluated on a site-by-site basis in accordance with local IT policy. The configuration changes in this section are compatible with MLCL product functionality but may introduce site specific IT impact as a result of disabling of legacy SSL protocols, prohibiting remote desktop usage and requiring certificate generation and maintenance.

### Additional Security Setting and Patches

	INW Server	Acquisition - Mac-Lab IT/XT/XTi , CardioLab IT/XT/XTi and SpecialsLab	GE Client Review Workstation	Virtual Review
Patch	Download URL	Download URL	Download URL	Download URL
<b>MS16-047</b> <b>KB3149090</b> <b>Superseded</b>	<a href="https://technet.microsoft.com/library/security/MS16-047">https://technet.microsoft.com/library/security/MS16-047</a>	<a href="https://technet.microsoft.com/library/security/MS16-047">https://technet.microsoft.com/library/security/MS16-047</a>	<a href="https://technet.microsoft.com/library/security/MS16-047">https://technet.microsoft.com/library/security/MS16-047</a>	<a href="https://technet.microsoft.com/library/security/MS16-047">https://technet.microsoft.com/library/security/MS16-047</a>
<b>Plugin 20007 – Disable SSL V2/V3 – KB187498</b>	Please see section - How to Install Plugin 20007 – Disable SSL V2/V3 – KB187498	Please see section - How to Install Plugin 20007 – Disable SSL V2/V3 – KB187498	Please see section - How to Install Plugin 20007 – Disable SSL V2/V3 – KB187498	Please see section - How to Install Plugin 20007 – Disable SSL V2/V3 – KB187498
<b>Plugin 78479 - Poodle</b>	No change needed. Step above fixes this.	No change needed. Step above fixes this.	No change needed. Step above fixes this.	No change needed. Step above fixes this.
<b>Plugin 35291 – Weak Hashing</b>	Please see section - How to Install Plugin 35291 – Weak Hashing (Refer to <a href="https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx">https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx</a> for more information)	Please see section - How to Install Plugin 35291 – Weak Hashing (Refer to <a href="https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx">https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx</a> for more information)	Please see section - How to Install Plugin 35291 – Weak Hashing (Refer to <a href="https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx">https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx</a> for more information)	Please see section - How to Install Plugin 35291 – Weak Hashing (Refer to <a href="https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx">https://technet.microsoft.com/en-us/library/ms191192(v=sql.105).aspx</a> for more information)
<b>Plugin 45411</b>	No change needed. Step above fixes this.	No change needed. Step above fixes this.	No change needed. Step above fixes this.	No change needed. Step above fixes this.



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	INW Server	Acquisition - Mac-Lab IT/XT/XTi , CardioLab IT/XT/XTi and SpecialsLab	GE Client Review Workstation	Virtual Review
<b>Plugin 65821 – SSL RC4 Cipher Suites Supported (Bar Mitzvah)</b>	Please see section - How to Install Plugin 65821 – SSL RC4 Cipher Suites Supported (Bar Mitzvah)	Please see section - How to Install Plugin 65821 – SSL RC4 Cipher Suites Supported (Bar Mitzvah)	Please see section - How to Install Plugin 65821 – SSL RC4 Cipher Suites Supported (Bar Mitzvah)	Please see section - How to Install Plugin 65821 – SSL RC4 Cipher Suites Supported (Bar Mitzvah)
<b>Plugin 63155 - Microsoft Windows Unquoted Service Path Enumeration</b>	Please see section - How Remove Vulnerability for Plugin 63155 – Microsoft Windows Unquoted Service Path Enumeration	Please see section - How Remove Vulnerability for Plugin 63155 – Microsoft Windows Unquoted Service Path Enumeration	Please see section - How Remove Vulnerability for Plugin 63155 – Microsoft Windows Unquoted Service Path Enumeration	Please see section - How Remove Vulnerability for Plugin 63155 – Microsoft Windows Unquoted Service Path Enumeration
<b>Plugin 59915 – Vulnerabilities in Gadgets Could Allow Remote Code Execution</b>	N/A	Please follow the section titled “ <b>Disable the Sidebar in the system Registry</b> ” in the following Article: <a href="https://technet.microsoft.com/library/security/2719662">https://technet.microsoft.com/library/security/2719662</a>	Please follow the section titled “ <b>Disable the Sidebar in the system Registry</b> ” in the following Article: <a href="https://technet.microsoft.com/library/security/2719662">https://technet.microsoft.com/library/security/2719662</a>	Please follow the section titled “ <b>Disable the Sidebar in the system Registry</b> ” in the following Article: <a href="https://technet.microsoft.com/library/security/2719662">https://technet.microsoft.com/library/security/2719662</a>
<b>Disable SMB1 Protocol</b>	Please see section How to Disable the SMB1 Protocol	Please see section How to Disable the SMB1 Protocol	Please see section How to Disable the SMB1 Protocol	Please see section How to Disable the SMB1 Protocol
<b>Configure Required SMBv2 Signing</b>	Please see section OPTIONAL – How to Configure Required SMBv2 Signing - SMBv2 signing not required	Please see section OPTIONAL – How to Configure Required SMBv2 Signing - SMBv2 signing not required	Please see section OPTIONAL – How to Configure Required SMBv2 Signing - SMBv2 signing not required	Please see section OPTIONAL – How to Configure Required SMBv2 Signing - SMBv2 signing not required
<b>CDrive Disk Space Cleanup</b>	N/A	N/A	Please see section OPTIONAL - CDrive Disk Space Cleanup	Please see section OPTIONAL - CDrive Disk Space Cleanup
<b>Disable Remote Desktop Services</b>	Please see section OPTIONAL – Remote Desktop Services Remote Code Execution Vulnerability	Please see section OPTIONAL – Remote Desktop Services Remote Code Execution Vulnerability	Please see section OPTIONAL – Remote Desktop Services Remote Code Execution Vulnerability	Please see section OPTIONAL – Remote Desktop Services Remote Code Execution Vulnerability

## Password Policy



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Password Policy: Minimum Password Length may be changed above the 14 characters limit to meet security requirements. Refer to **Password** section of the Security Guide for further details about changing passwords.

### Optionally Remove Abode Reader on INW Server

We recommend that abode reader be uninstalled on the INW Server. On the server Adobe reader is only used to review INW operator manual. The manual is available in printed format and through online manual portal.

### Further MLCL Systems Security Recommendations

We strongly recommend following these recommendations:

- Change default password to stronger, more secure and unique for each user account
- Disable RDP in for each system using the following steps:
  - My Computer>Properties>Remote settings>Remote
  - Check “Don’t allow connections to this computer”.
  - Click ok and reboot.
- If Insite functionality is not used on the system then turn off the VNC service using the following steps:
  - Click on Start button
  - Click on Control Panel
  - Click on Administrative Tools
  - Double click Services
  - Right Click TightVNC Server and select Properties
  - Under Startup type select Disabled from the dropdown
  - Click on Apply and Ok

We also recommend following these general recommendations and the recommendations listed in MLCL Security guide

- Enhanced physical security
- Network firewalls
- Demilitarized Zones and perimeter defenses for site network
- Intrusion detection systems - network intrusion protection system
- Virtual Private Networks
- Network traffic analysis
- Log analysis



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## Contact Information

If you have any additional questions, please contact our Technical Support Department.