## VistA Imaging Exchange (VIX) MUSE-JLV Interface Fixes

## MAG\*3.0\*249

# **CVIX Installation Guide**



### **Department of Veterans Affairs**

Office of Information and Technology (OI&T)

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#### **CVIX Installation Guide May 2020**

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#### **Revision History**

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9/25/2017	1.0	Initial version. M. Smith.
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# **Pre-Installation Instructions**

Verify that the patches listed in the Associated Patches section of this document have been previously installed.

- This patch may be installed with users on the system, although it is recommended that it be installed during non-peak hours to minimize potential disruption to users.
- There are no Menu Options to disable.

# **Installation Instructions**

This patch contains a CVIX installation. Instructions for the CVIX portion of this patch are contained in this document. This patch must be installed by the compliance date to conform with VHA Directive 2001-023. This patch may be loaded while VistA Imaging System is active.

## **Installation Prerequisites**

Before installing this patch, you will need to download the MAG\*3.0\*249 files to a local storage location.

• MAG3\_0P249\_CVIX\_Setup.msi, MAG3\_0P249\_CVIX\_Scripts.zip, MAG3\_0P249\_CVIX\_Hotfix01.zip, and SQLEXPRESS\_X64-14\_0\_1000\_169.ZIP (SQL 2017) found in the VIXSqlInstaller folder should be copied to a temporary folder on the desktop.

The following items are necessary for the CVIX installation:

- 1. The latest CVIX installation software.
- 2. A copy of the latest vhasites.xml file for the site service (copying from an existing CVIX node guarantees the latest version will be used). Place this file in the C:\SiteService folder on the node you are installing (create the folder if needed).
- 3. The Laurel Bridge Product Serial Number for the CVIX node you are installing.
- 4. The Federation certificate for the CVIX node you are installing.
- 5. The CVIX failover cluster's pfx certificate and its password.
- 6. Station 200 Access Code (referred to as Username).
- 7. The DAS certificates zip file and DAS configuration settings.
- 8. Consuming application certificates, if needed.
- 9. Before beginning the install, validate any Java version installed. MAG\*3.0\*249 CVIX installer will uninstall Java 8.0.171 if it is installed and install Java 8.0.202. If the Java version installed is older than 8.0.171, it must be uninstalled manually. The current Java version can be checked using the Control Panel (Figure 1). Reboot your server after the Java uninstall.

Control Panel	ŀ	All Control Panel Items	۲	Programs and Features
---------------	---	-------------------------	---	-----------------------

#### Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

5	0	n	or	
	_		-	

Organize 👻 Uninstall				
Name	Publisher 📩	Installed On	Size	Version
🔛 Notepad++	Notepad++ Team	2/24/2015		6.7.4
🕌 Java 8 Update 202 (64-bit)	Oracle Corporation	1/30/2019	120 MB	8.0.2020.8
🞯 WinPcap 4.1.3	Riverbed Technology, I	1/9/2019		4.1.0.2980
😹 Apache Tomcat 8.0 Tomcat8 (remove only)	The Apache Software F	4/19/2019		8.0.53

#### 10. Before beginning the install, remove any SQL version older than SQL 2017.

- a. Stop the Apache Tomcat Service (if it is installed and running).
- b. Uninstall all or any old MS-SQL programs (Control Panel Programs Programs and Features – Uninstall) (Figure 2)
- c. Remove/Delete the folder C:\Program Files\Microsoft SQL Server (include data files if any exist)
- d. <u>RESTART the CVIX server before proceeding (User MUST restart the</u> server after uninstalling SQL software).

Figure 2: Microsoft SQL Removal

	Programs and Featur	res			×
🕘 🕘 – 🛧 🕅 🕨 Contro	Panel	~ C	Search Progra	ms and Feature	s p
Control Panel Home	Uninstall or change a program				
View installed updates	To uninstall a program, select it from the list and then	click Uninstall, Change, or Repair.			
Turn Windows features on or					
off	Organize 👻				- @
Install a program from the	Name	Publisher	Installed On	Size	Versi
HELWOIK	Microsoft Monitoring Agent	Microsoft Corporation	11/3/2016	214 MB	7.1.1
	Microsoft ODBC Driver 11 for SQL Server	Microsoft Corporation	3/30/2018	4.61 MB	12.0.
	Microsoft Report Viewer 2014 Runtime	Microsoft Corporation	3/30/2018	25.7 MB	12.0.
	Microsoft SQL Server 2008 R2 Management Objects	Microsoft Corporation	3/30/2018	15.3 MB	10.5
	Microsoft SQL Server 2008 Setup Support Files	Microsoft Corporation	3/30/2018	38.9 MB	10.3.
	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	3/30/2018	7.22 MB	11.0.
	Microsoft SQL Server 2014 (64-bit)	Microsoft Corporation	8/10/2018		
	Microsoft SQL Server 2014 Policies	Microsoft Corporation	3/30/2018	1.00 MB	12.0
	Microsoft SQL Server 2014 Setup (English)	Microsoft Corporation	3/30/2018	50.7 MB	12.0
	Microsoft SQL Server 2014 Transact-SQL Compiler Ser	Microsoft Corporation	3/30/2018	141 MB	12.0
	Microsoft SOL Server 2014 Transact-SOL ScriptDom	Microsoft Corporation	3/30/2018	6.18 MB	12.0
	Microsoft SQL Server System CLR Types	Microsoft Corporation	3/30/2018	2.53 MB	10.5
	Microsoft System CLR Types for SQL Server 2014	Microsoft Corporation	3/30/2018	6.80 MB	12.0
	Microsoft Visual C++ 2005 Redistributable	Microsoft Corporation	9/27/2016	4.84 MB	8.0.6
	Microsoft Visual C++ 2005 Redistributable (x64)	Microsoft Corporation	9/27/2016	7.10 MB	8.0.5
	Microsoft Visual C++ 2005 Redistributable (x64)	Microsoft Corporation	9/27/2016	6.83 MB	8.0.6
					>

11. Before beginning the install, remove any old Apache Tomcat (prior to 8.0.53):

• from Control Panel - Programs and Features - uninstall Apache Tomcat 8.0 (stop the Apache Tomcat service if it is running prior to uninstall)

- 12. Extract the MAG3\_0P249\_CVIX\_Scripts.zip file introduced in MAG\*3.0\*249. Copy the included PowerShell scripts into the directory C:\Program Files\VistA\Imaging\Scripts. These scripts include:
  - p249\_vix\_preinstall\_config\_backups.ps1
  - p249\_vix\_config\_edits.ps1
  - p249\_vix\_ssl\_binder.ps1
  - p249\_task\_scheduler.ps1
  - p249\_vix\_services.ps1
- 13. *This step is needed only if this is an upgrade of the CVIX* so that backup copies of the prior patch config files are created. Execute the config backups script (p249\_vix\_preinstall\_config\_backups.ps1) to make timestamped backups of the following config files for later referential purposes:
  - C:\Program Files\VistA\Imaging\VIX.Config\VIX.Render.config
  - C:\Program Files\VistA\Imaging\VIX.Config\VIX.Viewer.config
  - C:\Program Files\Apache Software Foundation\Tomcat 8.0\conf\server.xml.
  - C:\Program Files\Apache Software Foundation\Tomcat 8.0\webapps\Awiv\Awiv.html
  - a. Choose **Start**, type PowerShell, and then right click **Windows PowerShell** and run as an administrator (Figure 3).

Figure 3: Execute Windows PowerShell



Once PowerShell launches, type in the commands:

```
cd 'C:\Program Files\VistA\Imaging\Scripts'(press enter)
.\p249 vix preinstall config backups.ps1
```

Then press **ENTER** to execute the back-up files script. Wait for the script to complete (Figure 4).

Figure 4: Windows PowerShell Back-up Files Script



- b. The script will launch the Apache Tomcat 8 properties. *In the case of an upgrade and if AppDynamics is not needed*, under the java tab Javaoptions (at the end Figure 5) remove this line (if it exists): javaagent:"D:\TomcatAppDyn-CVX\ver4.2.12.1\javaagent.jar". Then click Apply & OK.
- c. Then close PowerShell.

Figure 5: Windows PowerShell Back-up Files Script

🔈 🔹 Apache To	mcat 8.	0 Tomo	at8 Prop	erties	x
General Log On Logging	Java	Startup	Shutdown	]	
Use default					
Java Virtual Machine:					_
C:\Program Files\Java\ji	re1.8.0_2	02\bin\ser	ver\jvm.dll		
Java Classpath:					
C:\Program Files\Apach	e Software	e Foundati	on\Tomcat 8	3.0\bin\bootstr	ар
Java Options:					
-Djcifs.properties=C:/Vi -Dlog4j.configurationFile -Daxis.ClientConfigFile=	xConfig/jc =file:/C:/ :C:/VixCon	ifs.proper VixConfig/ fig/client-(	ties log4j2.xml config.wsdd	-	< >
Java 9 Options:					
add-opens=java.base add-opens=java.base add-opens=java.rmi/s	/java.lang /java.io=/ un.rmi.tra	I=ALL-UNN ALL-UNNAI nsport=Al	IAMED MED LL-UNNAMED		~
Initial memory pool:	2019			MB	
Maximum memory pool:	2019			MB	
Thread stack size:				KB	
		OK	Cance		ly

Verify that required patches and any optional patches that support desired or needed features have been installed.

### **CVIX Installation**

The installation process needs to be done as a user with admin rights. The steps below assume a clean installation. Upgrades to a server node can follow the same process; however, many of the steps do not need to be repeated. For additional information about the CVIX installation, see the MAG\*3.0\*249 CVIX documentation for the Production Operations Manual (POM) and the Administrator's Guide.

Note: In the event the node has other than CVIX VISA product(s) installed (i.e. VIX, HDIG, etc.), remove the "vixconfig" system environment variable using the Environment Variables menu (from System Properties menu).

- 1. Double click the CVIX MSI installation to install the CVIX installer. Currently the latest version of this installation is MAG3\_0P249\_CVIX\_Setup.msi
- 2. Click **Next** through the installation dialogs taking all defaults to complete the CVIX installation.
- 3. Click **Close** when the installation is complete.
- 4. From the C:\Program Files (x86)\Vista\Imaging\CvixInstaller folder, right click *VixInstaller.exe* and run as administrator. The cVIX Service Installation Wizard will then launch (Figure 6).



Figure 6: CVIX Installation Wizard

- 5. Select **Developer Mode** (lower left grey notch to be able to point to the CVIX's own site service file), then Press **Ne**xt.
- 6. Click to uninstall the previous version (Figure 7).

Figure 7: Specify Site and Site Service Information

cVIX Service Installation Wiz	ard 30.249.1.7704 - Developer Mode
Update VIX components from 30.230.3.6	676 to 30.249.1.7704
Click Uninstall button to remove existing VIX we	applications.
	^
	v
	Uninstall version 30.230.3.6676
	< Back Next > Cancel

- 7. When uninstalling 30.230.x.x is finished, (if not a clean install), click **Next** to start the installation process.
- 8. By default, the C:\SiteService\vhasites.xml file is set with 2001 Site Number. Do not change the Site Number unless otherwise directed to.
- 9. Press Lookup Server Addresses and verify the information is correct (Figure 8).

Figure 8: Specify Site and Site Service Information

Site Service URL		
http://localhost80/	vistaWebSvcs/ImagingExchangeSiteService.asmx	
Sites File	C:\Site Service\VhaSites.xml Select	
Site Number	2001 Lookup Server Addresses	
VistA Server Name:	fhie.med.va.gov	9200
VIX Server Name:	vaww.west.cvx.va.gov	80
Server Certificate	D:\Installs\CVIX\vaww.cvx.va.gov.pfx	Selec
Cert Password	cVIX_DAS_if#	

10. *If this is an upgrade, skip this step.* To introduce the CVIX's certificate (pfx file), click the Server Certificate item's **Select** button (Figure 9) and point to the pfx file provided in prerequisites: Click **OK**.

Figure 9: Select Server Certificate PFX File

	Select Certificate PFX file	
Se	ect the certificate file (must be pkcs12)	
Select	D:\lnstalls\CVIX\waww.west.silver.cvx.va.gov.pfx	
	ОК	Cancel

- 11. *If this is an upgrade, skip this step*. In the main menu's CertPassword field enter the password provided in prerequisites; (position the cursor to any other active field to make the **Next** button active).
- 12. Click Next.
- 13. The Install the VIX Prerequisites screen (Figure 10) comes up with Install buttons to most components. Install each prerequisite for the CVIX installation by pressing Install next to each component if it shows a checkbox. Only one prerequisite can be installed at a time. Click Next once there are no more icons.

Figure 10: Install the VIX Prerequisites

Install th	e VIX Prerequisites.
Click Insta license.	III to install the Laurel Bridge DICOM toolkit. You will be prompted to activate the toolkit
	VHAMASTER\vhaiswbiglec0 has the Administrator role.
	Current operating system is Windows 2012.
Install	The Java Runtime Environment version 8.0_202 is installed.
Install	Apache Tomcat version 8.0.53 is installed.
Install	The Laurel Bridge DICOM toolkit is not licensed.
Create	The service account has been configured.
Install	The VIX security certificate is installed.
Install	The VIX Viewer/Render Services are not installed.
	< Back Next > Cancel

- 14. If Java 8.0.202 is not installed, allow the installer to install the software.
- 15. Install Tomcat 8.0.53. Refer to the separate KeePass file for the Tomcat password.
- 16. If this a clean install or the DCF toolkit expired, the Laurel Bridge DICOM toolkit will require the Product Serial Number. Enter Austin AITC, TX for the AITC CVIX and Philadelphia PITC, PA for the PITC COOP CVIX, 1 for the Number of CPUs and enter your contact information. Press Activate (Figure 11). When successful, click Exit with Success.

Figure 11: Activate DCF License

Idif1	
Network Activation Ma	nual Activation
Platform:	Windows_NT_5_x64_VisualStudio10.x
DCF Version:	3.3.40c
Product Serial Number:	D6C3-F289-0271-F011 Ex: 1111-2222-3333-4444
Activation Request Code:	E438-DBFD-9581-7237
MAC Address (optional)	:
Site:	PITC
Host:	vaphiappcvx401c
Number of CPUs:	1 Number of Physical CPUs, not Logical
Contact name:	Chad Bigler
Contact e-mail:	chad.bigler@va.gov
Status:	
Messages:	

- 17. If asked the question, "Reapply previous service account password?", answer NO and enter the Tomcat password, and click **OK**. Refer to the separate KeePass file for the Tomcat password.
- 18. For the VIX certificate, use the CVIX Federation certificate provided (on initial install only).
- 19. *If this is the first time the MAG\*3.0\*249 installation is being completed*, the Viewer/Render Services must be (re)installed: click **Install** and wait until the following screen (Figure 12) comes up:

Figure 12: VIX Viewer/Render Info Dialog for Installation

⊿	Viewer Service	[Port:0]	
	Port Number	0	Save Contiguration
	Use TLS	False	
	Compress Images	False	
	Override Hostname		
⊿	Render Service	[Port:0]	
	Port Number	0	
	Use TLS	False	
⊿	Site Service	Inttp://:01	
	Host Name		
	Port Number	0	
	Use TLS	False	
4	VIX Service	[http://:0]	
	Host Name		
	Port Number	0	
	Use TLS	False	
⊿	Database		
	Instance Name		
	User Name		
	Password		
⊿	Storage		
	Image Cache Directory		
Vie	ewer Service		

- 20. *If this is a new installation*, click **Configure Viewer/Render**. It will fill all fields with default values (Figure 13). Verify/Edit the following items:
  - Viewer port must be set to 343
  - Trusted Client Port must be set to 344
  - Compress Image must be set to True
  - In Override Hostname enter the CVIX domain name /FQDN/
  - Site Service port must be set to 8080
  - VIX service Host Name must be set to localhost
  - Instance Name must be .\SQLEXPRESS
  - Image Cache Directory is set to a dedicated CVIX cache drive (Set the same drive letter that will be used for the VixCache in step 16; always E: in production: "E:\VIXRenderCache")

Figure 13: VIX Viewer/Render Info Dialog Configure Default Values

A Vewer Service	[Port:343], TLS, TrustedClientPort:344	_	Save Configuration
Pot Number	343 Tem	_	
To stad Class Post	244	_	
Compares Images	Inc		
Overide Hostname	vaobianocys401c aac dva va nov		
A Bender Service	[Port 9901]		
Pot Number	9901		
Use TLS	False		
J Ste Service	[http://localhost:8080]		
Host Name	localhost		
Port Number	8080		
Use TLS	False	_	
<ul> <li>VIX Service</li> </ul>	[http://localhost:8080]		
Host Name	localhost		
Port Number	8080		
Use TLS	False	_	
4 Database	[VAPHIAPPCVX401C\SQLEXPRESS]		
Instance Name	VAPHIAPPCVX401C\SQLEXPRESS		
User Name		2022	
Password	••••••••••••••••••••••••••••••••••••		
⊿ Storage	E11000 1.0.1		
Image Cache Directory	E:\VIXHenderCache	~	
Viewer Service		1.1	
	N		

- 21. Click Save Configuration if any changes have been made, otherwise Click OK.
- 22. *If prompted to install the SQL server*, click **OK** and select (Figure 14) the SQLEXPRESS\_X64-14\_0\_1000\_169.ZIP found in the "VIXSqlInstaller" folder in the temporary folder on the desktop (Figure 15). Depending on the server, this step may take up to twenty minutes (Figure 16).

#### Figure 14: Select the SQLEXPRESS\_X64-14\_0\_1000\_169.ZIP dialog

	MS SQL Server Setup
	Select the .zip file, SQLExpress_x64-14_0_1000_169.zip
stall	Select
stall stall	OK Cancel
eate	The service account has been configured.
stall	The VIX security certificate is installed.
nstall	The VIX Viewer/Render Services are installed.

Figure 15: Location of SQLEXPRESS\_X64-14\_0\_1000\_169.ZIP file



Figure 16: SQL Server Setup

10	SQL Server 2017 Setup
Installation Progres	s
Install Setup Files Installation Progress	Install_sql_tools_Cpu64_Action : Write_NativeImage_64. Generating Native Images
	Next > Cancel Help

23. When all prerequisites are completed (all green), click Next (Figure 17).

Figure 17: All VIX Prerequisites Installed or Configured

u prereq	uisites for the VIX installation have been met. To continue, click Next.
	VHAMASTER(vhaiswbiglec0 has the Administrator role.
	Current operating system is Windows 2012.
Install	The Java Runtime Environment version 8.0_202 is installed.
Install	Apache Tomcat version 8.0.53 is installed.
Install	The Laurel Bridge DICOM toolkit is installed.
Create	The service account has been configured.
Install	The VIX security certificate is installed.
Reinstall	The VIX Viewer/Render Services are installed.

24. On the next screen, if necessary, press **Create** to create the VixConfig and VixCache directories.

#### 25. Ensure that the "Using Cluster Cache" box is <u>NOT</u> checked (Figure 18)

Figure 18: Using Cluster Cache NOT checked.

be VIX coche and conferration	vix cache and o	configuration folders.	ations
tie viv cacie and configuration	n unves navé bee	en conligurea. Click Next to co	munue.
Specify the local drive for the	VIX Configuration	files	
C:\	~	C:\VixConfig	Create
Specify the local drive for the	VIX Cache		
E:\-DATA	*	E:\VixCache	Create
Space Available on sel	ected drive (GB)	199	
Using Cluster Cache			Validate
letwork Domain			, and the
Network Login		Network Password	
QL Server Host			Port
QL Server Login		Password	
		C Pack Me	ut > Cancel

#### 26. Press Next.

27. DAS (DOD connector) configuration (Figure 19) settings must be filled:

- Username: the Vista Access code in Station 200 VistA database for DOD authentication
- <u>Host:</u> domain name (like das.va.gov)
- <u>Provider:</u> ID string (like 123)
- Port: 443 (preset do not change)
- <u>Request Source:</u> VADAS (constant unless instructed differently)
- <u>LOINC</u>: 34794-8 (only that code is used until VA implements LOINC nomenclature)

Figure 19: Configure DoD Connector settings

Configure D Enter the requ	DoD connector uried CVIX connection information	ation.		
Station 200 Co Usemame:	nfiguration 3205OBX			
Host das-	or sqa.va.gov	VADAS	Provider	123
Instal Reinstal	The Visual Studio 2008 1	VC++ runtime is installed.		Validate
		< Ba	ck Next >	Cancel

- 28. *If needed*, press **Install** to install the Visual Studio 2008 VC++ runtime.
- 29. *If this a new installation,* Install the DoD Connector (DAS) certificates, by selecting the zip file DAS provided in the DoD Connector Certificates Setup (Figure 20): The certificates and the update procedures will be stored in the following share location:

Figure 20: Install the DoD Connector (DAS) Certificates Setup

	DoD Connector Certificates Setup
Sel	ect the file which contains the certificates.
Select	D:\Installs\CVIX\DAS-derfiles.zip

- 30. Press Validate on the DOD Connector screen and then Next to continue (Figure 19)
- 31. Press Install (Figure 21) to install the CVIX. This will start the installation process.

Figure 21: Begin the VIX Install display

cVIX Service Insta	allation Wizard 30.249.1.7704 - Developer Mode
Install the VIX.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Click Install to begin.	
	<u>^</u>
	×
	Install
	< Back Next > Cancel

Wait until the Installation is complete. At the end, the additional PowerShell checking utility will pop-up to verify the Viewer and Render configuration files (Figure 22). Press *any key* to close it.

Figure 22: PowerShell Pop-Up



32. When complete, the CVIX should be installed, and the Viewer and Render processes are also running. Press **Finish** to close the CVIX installation wizard (Figure 23).

Figure 23: VIX Install Finish

nstall the VIX.			
Click Install to begin.			
Starting the Tomcat8 service. The Tomcat8 service has been started.			^
Changing sa password.			
sa had the new password already - no need to change Starting Image Viewer service			
The Image Viewer service is Running			
Starting Image Render service. The Image Render service is Running			
Starting Listener Tool service.			
The Listener Tool service is Running			
			×
			Install
			-
	< Back	Finish	Cancel

- 33. If installing in production, stop the VIX Viewer service to prevent the load balancer from sending requests to this server.
- 34. Wait for Apache tomcat to fully start up use <u>http://localhost/</u> from a local browser and wait approximately 4-7 minutes until the VISA Version is displayed.
- 35. Stop ApacheTomcat 8.0 in Services.
- 36. Check \VixConfig\VistaConnectionConfiguration.config and verify the newStyleLoginEnabled flag is set 'false' and the oldStyleLoginEnabled flag is 'true'.
- 37. Edit Tomcat8.0/conf/server.xml, in the Host name="2001.med.va.gov" section, under field additionalUserRoles - define all access codes with the additional non-VA customers next to the DOD Username entered above. No spaces. For each entry:
  - the Access code followed by ':vista-user', the user roles are separated by ';'- s.
- 38. *If AppDynamics is needed*, please run PF/Tomcat8.0/bin/tomcat8w.exe and under the java tab Javaoptions (at the end) add this line:

-javaagent:"D:\TomcatAppDyn-CVX\ver4.2.12.1\javaagent.jar" then click **Apply & OK.** 

(also make sure that  $\underline{D:}\underline{D:}\underline{Dyp}\underline{Dyp}\underline{CVX}$  is present with 8 items within (a total of 192 MB)

- 39. Stop the Listener Tool, VIX Viewer, and VIX Render service in Services.
- 40. This step will execute the config files edit script (p249\_vix\_config\_edits.ps1). This script will update the encrypted connections between the CVIX and VIX servers and improve performance in TIFF to PDF conversions. This script backs up the original

two config files (VIX.Viewer.config and VIX.Render.config) before editing the VIX.Render.config config files. It also replaces the Awiv.html file created during the installation with the original pre-install back-up of Awiv.html.

a. Choose **Start**, type PowerShell and then right click **Windows PowerShell** and run as an administrator (Figure 24).



Figure 24: Execute Windows PowerShell

b. Within the same PowerShell environment, type in the command:

```
cd 'C:\Program Files\VistA\Imaging\Scripts'(press enter)
.\p249_vix_config_edits.ps1
```

Press **ENTER** to execute the config files edit script. Wait for the script to complete (Figure 25).

Figure 25: Windows PowerShell VIX Viewer and Render Config Files Edit Script



41. This step verifies successful execution of the config files edit script (p249\_vix\_config\_edits.ps1). Locate the VIX.Render.config file in the folder C:\Program Files\VistA\Imaging\VIX.Config. For line 23, inside the processor tag <Processor> two additional parameters MaxPagesTiffToPdf="75" and OpTimeOutMins="5" will now be present. The values for these two parameters can be changed as desired.

Before (Parameters may vary by site):

```
<Processor WorkerPoolSize="10" UseSeparateProcess="true"
ReprocessFailedImages="false" ConvertTiffToPdf="true">
```

After:

```
<Processor WorkerPoolSize="10" UseSeparateProcess="true"
ReprocessFailedImages="false" ConvertTiffToPdf="true"
MaxPagesTiffToPdf="75" OpTimeOutMins="5">
```

42. To verify valid certificates are bound on both port 343 and 344, execute the ssl binding script (p249\_vix\_ssl\_binder.ps1) to first check if the ports are bound and if not bind both ports.

**Note**: This step assumes Windows PowerShell remains open after previously running the config files edit script (p249\_vix\_config\_edits.ps1). If PowerShell is not open, launch Windows PowerShell as an administrator and, once PowerShell launches, type in the command:

cd 'C:\Program Files\VistA\Imaging\Scripts' (press enter)

a. Within the same PowerShell environment as before, type in the command:

.\p249\_vix\_ssl\_binder.ps1

Then press **ENTER** to execute the ssl binding script. Wait for the script to complete (Figure 26).

Figure 26: Windows PowerShell SSL Binding Script



In the event of failure of the ssl binding script, the following steps can be performed manually from a command prompt window:

- $a. \ run \ the \ command \ netsh \ http \ show \ sslcert$
- b. Tie the production vaww.cvx.va.gov.pfx imported certificates' thumbprint to port 344 using C:> netsh http add sslcert ipport=0.0.0.0:344 certhash=5ebb6c3eed6f4f2ab8e1cdb5634adb16d58ca2ca appid={e53beb34-bcf4-4708-869e-3f2758c85b59}
- c. The certhash value is taken from existing production (URL from anywhere to a prod CVIX and view cert in browser; get thumbprint)
- d. The appid field is required but not used (taken from netsh http show sslcert for existing port 343 binding)
- e. Repeat step b above for port 343
- 43. Installation procedures to install Consuming Application Certificates are available in the CVIX Certificate Maintenance document.
- 44. This step will execute the task scheduler script (p249\_task\_scheduler.ps1) to schedule as a scheduled daily task a restart of the VIX Viewer and VIX Render services, Listener Tool and the Apache Tomcat service. The script sets the daily restart time to 04:00 A.M, but this can optionally be adjusted prior to execution by editing line 2 of the script (\$Trigger = New-ScheduledTaskTrigger -Daily -At 4:00am).

**Note**: This step assumes Windows PowerShell remains open after previously running the ssl binding script (p249\_vix\_ssl\_binder.ps1). If PowerShell is not open, launch Windows PowerShell as an administrator and, once PowerShell launches, type in the command:

cd 'C:\Program Files\VistA\Imaging\Scripts' (press enter)

b. Within the same PowerShell environment as before, type in the command:

.\p249\_task\_scheduler.ps1

Then press **ENTER** to execute the task scheduler script. Wait for the script to complete (Figure 27).

Figure 27: Windows PowerShell Task Scheduler Script

2		Administrator: Windows PowerShell	_ 🗆 X
PS C:\Windows\system32> . 'C:\Program Files\V	istA\Imaging\Scripts\p249_task_sch	eduler.ps1'	<u>^</u>
TaskPath	TaskName	State	
DONE	Imaging Services Daily Restart	Ready	
PS C:\Windows\system32> _			

45. This step will execute the restart script (p249\_vix\_services.ps1) to restart the VIX Viewer and VIX Render services, Listener Tool and the Apache Tomcat service.

**Note**: This step assumes Windows PowerShell remains open after previously running the task scheduler script (p249\_task\_scheduler.ps1). If PowerShell is not open, launch Windows PowerShell as an administrator and, once PowerShell launches, type in the command:

cd 'C:\Program Files\VistA\Imaging\Scripts' (press enter)

a. Within the same PowerShell environment as before, **type** in the command:

.\p249\_vix\_services.ps1

Then press **ENTER** to execute the restart script. Wait for the script to complete (Figure 28).

#### Figure 28: Windows PowerShell Restart Script



Now close PowerShell.

Wait for completion -- use http://localhost/ from local browser and wait until the VISA Version is displayed (4-7 minutes).

# **Post Install Steps**

After the CVIX installation is completed, the server must be configured properly for the CVIX to work. The following steps only need to be done once for each server node. (Note that DAS MIX/DX interface Configuration Settings will be completed by MAG\*3.0\*249 Installer).

### **Enable Remote Desktop**

By default, Remote Desktop in Windows Server 2012 R2 only allows one connection at a time.

Modify this to allow multiple remote connections:

- 1. Start →Administrative Tools →Remote Desktop Services →Remote Desktop Session Host Configuration
- 2. Click Restrict each user to a single session
- 3. Uncheck *Restrict each user to a single session* (Figure 29)
- 4. Click OK

Figure 29: Remote Desktop Session Properties

Properties	×
General Licensing	
These settings affect the performance of this RD Session Host server. For best results, select all check boxes.	
✓ Delete temporary folders on exit	
☑ Use temporary folders per session	
Restrict each user to a single session	
User logon mode	
<ul> <li>Allow all connections</li> </ul>	
C Allow reconnections, but prevent new logons	
C Allow reconnections, but prevent new logons until the server is restarted.	
OK Cancel Appl	9

### **Prevent Automatic Java Update**

The java installer (oracle) by default requests for jre updates that must be suppressed. The following sequence must be executed for the manual steps to prevent automatic java updates.

(Note: These steps are not needed if the MAG\*3.0\*249 installer installed Java Runtime Environment version 8.0\_202 during installation.).

- 1. Click Windows Start
- 2. Type JavaC and select Configure Java
  - a. If the update tab does not display, no additional steps are needed.
- 3. The Java Control Panel window will come up; in the Update tab, disable automatic updates by clearing the *Check for Updates Automatically* checkbox 4. In the pop-up window click **Do Not Check**.
- 4. Click Apply (lower right corner), before hitting OK

## Apply CVIX Patch MAG\*3.0\*249 Hotfix

Apply the CVIX only hotfix to fix the Print and Export options missing from the context menu after a JLV Claims user right-clicks on an image.

- 1. Extract the MAG3\_0P249\_CVIX\_Hotfix01.zip file introduced in MAG\*3.0\*249 to obtain the replacement Hydra.VistA.dll file.
- 2. Stop the VIX Viewer and VIX Render service in Services.
- 3. In File Explorer open the folder: C:\Program Files\VistA\Imaging\VIX.Viewer.Service and rename Hydra.VistA.dll to Hydra.VistA\_P249.dll
- 4. Move the Hydra.VistA.dll file included in the extracted contents of the hotfix to the the folder C:\Program Files\VistA\Imaging\VIX.Viewer.Service.
- 5. Start the VIX Viewer and VIX Render service in Services.

# **Backout Plan**

To back out the VIX and replace it with a prior version, please do the following:

- Use Control Panel\All Control Panel Items\Programs and Features to uninstall the MAG\*3.0\*249 CVIX installer.
- Create backup copies of:
  - a. C:\Program Files\Apache Software Foundation\Tomcat 8.0
  - b. C:\Program Files\VistA\Imaging\VIX.Config
  - c. C:\Program Files\VistA\Imaging\VIX.Render.Service
  - d. C:\Program Files\VistA\Imaging\VIX.Viewer.Service
  - e. Retrieve latest MAG3\_0P230\_CVIX\_Setup.msi from the file directory. (It will be located in D:\Installs\CVIX on most machines)

- Complete the installation:
  - 1. Double click the CVIX MSI installation to install the CVIX installer (MAG3\_0P230\_CVIX\_Setup.msi).
  - 2. Click **Next** through the installation dialogs taking all defaults to install the CVIX Installation.
  - 3. Click **Close** when the installation is complete.
  - 4. From the C:\Program Files (x86)\Vista\Imaging\CvixInstaller folder double-click VixInstaller.exe and run as administrator. The cVIX Service Installation Wizard will then launch (Figure 30).

Figure 30: CVIX Installation Wizard



- 5. Press Next
- 6. When Uninstall is finished (if not a clean install), click **Next** to start the installation process.
- 7. By default, the C:\SiteService\vhasites.xml file is set with 2001 Site Number.
- 8. If necessary, adjust the site number.
- 9. Press Lookup Server Addresses (Figure 31) button and verify the information is correct.

Figure 31: Specify Site and Site Service Information

Site Service URL					
http://localhost80/	vistaWebSvcs/In	nagingExchangeS	SiteService.asr	nx	
Sites File	C:\Site Service\	VhaSites.xml	Select		
Site Number	2001	Lookup Server Ad	dresses		
VistA Server Name:					9200
VIX Server Name:		10.			80
Server Certificate					Sele
Cert Password					
Cert Password					

In order to introduce the CVIX's certificate (pfx file), click the Server Certificate item's **Select** button (Figure 32) and point to the pfx file provided in the prerequisites:

Figure 32: Select Server Certificate PFX File

	Select Certificate PFX file
Select the certit	ficate file (must be pkcs12)
Select D:\Installs\CVI	X\vaww.west.silver.cvx.va.gov.pfx
	OK Cancel

10. In the Cert Password field, enter the password provided in the prerequisites and click **Tab** to enable the **Next** button (Figure 33).

Figure 33: Enter Cert Password

S S	cVIX Se pecify the CVIX site pecify the location of v	vice Installation Wizard 30.230.3.6676 - Developer Mode and site service information. hasites.xml the click the Lookup Server Addresses button.	
	Site Service URL	VistaWebSvcs//magingExchangeSiteService.asmx	
R	Sites File Site Number VistA Server Name: VIX Server Name: Server Certificate Cert Password	C:\Site Service\VhaSites.xml     Select       2001     Lookup Server Addresses       fhie.med.va.gov     vaww.west.cvx.va.gov       D:\Installs\CVIX\vaww.cvx.va.gov.pfx     cVIX_DAS_if#	9200 80 Select
		< Back Next >	Cancel

- 11. Click Next.
- 12. The Install the VIX Prerequisites screen comes up (Figure 34) with Install buttons to most components. Install each prerequisite for the CVIX installation by pressing Install next to each component if it shows a checkbox. Click Next once there are no more circons!

Figure 34: Install the VIX Prerequisites

Click Insta	all to install the Java Runtime Environment.
	<ul> <li>DVA\vacotittoc0 has the Administrator role.</li> <li>Current accession of the Windows 2012</li> </ul>
Install	Current operating systems windows 2012.     The Java Runtime Environment version 8.0_202 is not installed.
Install	Apache Tomcat version 8.0.53 is not installed.
Install	The Laurel Bridge DICOM toolkit is installed.
Assign	The service account must be reassigned to the Apache Tomcat service.
Install	The VIX security certificate is installed.
Install	The VIX Viewer/Render Services are not installed.

13. For the Laurel Bridge DICOM toolkit will require the Product Serial Number. Enter Austin AITC, TX for AITC CVIX and Philadelphia PITC, PA for the PITC COOP CVIX, 1 for the Number of CPUs and enter your contact information. Press Activate (Figure 35). When successful click Exit with success. Figure 35: Activate DCF License

ain		н
Network Activation   Ma	nual Activation	
Platform:	Windows_NT_4_x64_VisualStudio9.x	_
DCF Version:	3.3.26c	
Product Serial Number:	D6C3-F522-7586-6005 Ex: 1	111-2222-3333-4444
Activation Request Code:	5FB3-77D2-FEC4-F237	
MAC Address (optional)		
Site:	Philadelphia Sungard, PA	
Host:	VHACVIXNODE5	
Number of CPUs:	1 Number of Physical CPUs, not	Logical
Contact name:	Donald Buck	
Contact e-mail:	donald.buck@va.gov	
Status:	Success: AC=7178-40C7-9F6A-8ACE-9F10-CE3	1-12D5-D5F4
Messages:		*
		_
		-
	Reactivate	
		Exit with success

- 14. For the VIX certificate, use the CVIX Federation certificate provided.
- 15. For the Viewer/Renderer Services installation click **Install** and wait until the following screen (Figure 36) comes up:

Figure 36: VIX Viewer/Render Info Dialog for Installation

⊿	Viewer Service	[Port:0]	
	Port Number	0	Save Configuration
	Use TLS	False	
	Compress Images	False	
	Override Hostname		
4	Render Service	[Port:0]	
	Port Number	Ō	
	Use TLS	False	
⊿	Site Service	[http://:0]	
	Host Name		
	Port Number	0	
	Use TLS	False	
⊿	VIX Service	[http://:0]	
	Host Name		
	Port Number	0	
	Use TLS	False	
⊿	Database		
	Instance Name		
	User Name		
	Password		
⊿	Storage		
	Image Cache Directory		
Vie	ewer Service		

Click **Configure**, it will fill all fields with default values. Verify/Edit the following items (Figure 37):

a. Viewer port must be set to 343

- b. Trusted Client Port must be set to 344
- c. Compress Image must be set to True
- d. In Override Hostname enter the CVIX domain name /FQDN/
- e. Site Service port must be set to 8080
- f. VIX service hostname must be set to localhost
- g. Instance Name must be .\SQLEXPRESS
- h. Image Cache Directory is set to a dedicated CVIX cache drive (For Example: "D:\VIXRenderCache")

Figure 37: VIX Viewer/Render Info Dialog Configure Default Values

	Port Number	343	Save Configuration	
	Use TLS	True		
	Trusted Client Port	344		
	Compress Images	True		
	Override Hostname	vaausappcvx400c.aac.dva.va.gov		
⊿	Render Service	[Port:9901]		
	Port Number	9901		
	Use TLS	False		
⊿	Site Service	[http://localhost:8080]		
	Host Name	localhost		
	Port Number	8080		
	Use TLS	False		
⊿	VIX Service	[http://localhost:8080]		
	Host Name	localhost		
	Port Number	8080		
	Use ILS	False		
4	Uatabase	[.\SQLEXPRESS]		
	Instance Name	. \SQLEAPRESS		
	Deewood			
	Password			
-	Image Cache Directory	F-\VIXBenderCache		
-				
Po	ort Number at Number			

- 16. Click Save Configuration, then select OK.
- 17. If prompted to install the SQL server, Click OK and select the SQLExpress\_x64-14.0.1000.169.zip file (this install step, depending on the server, might take up to 20 minutes).
- 18. When all prerequisites are completed (all green), press Next (Figure 38).

Figure 38: All VIX Prerequisites Installed or Configured

cVIX Service Installation Wizard 30.230.3.6676 - Developer Mode
Install the VIX Prerequisites.
All prerequisites for the VIX installation have been met. To continue, click Next.
VHAMASTER\VHAISWLINJ0 has the Administrator role.
Current operating system is Windows 2012.
Install O The Java Runtime Environment version 8.0_202 is installed.
Install S Apache Tomcat version 8.0.53 is installed.
Install 📀 The Laurel Bridge DICOM toolkit is installed.
Create Structure account has been configured.
Install 📀 The VIX security certificate is installed.
Reinstall 📀 The VIX Viewer/Render Services are installed.
< Back Next > Cancel

19. Check to ensure that the checkbox for Using Cluster Cache is NOT checked (Figure 39).

Figure 39: Using Cluster Cache NOT checked

cVI	X Service Installation Wizar	rd 30.230.3.6676 - Develo	oper Mode
Specify the loca	tion of the VIX cache and	configuration folders.	
The VIX cache and	d configuration drives have be	en configured. Click Next to	continue.
Specify the local	drive for the VIX Configuration	files	
C:\	~	C:\VixConfig	Create
Specify the local	drive for the VIX Cache		
E:\-Data	~	E:\VixCache	Create
Space Ava	ilable on selected drive (GB)	198	
Using Cluster C	ache		Validate
Network Domain			
Network Login		Network Password	
SQL Server Host			Port
SQL Server Login		Password	
		< Back	Next > Cancel

- 20. Press Create to create the VixConfig and VixCache directories, then press NEXT
- 21. DAS (DoD Connector) configuration settings (Figure 40) must be filled:
  - a. <u>Host:</u> domain name (like das.va.gov)
  - b. <u>Provider:</u> ID string (like 123)
  - c. Port: 443 (preset do not change)
  - d. <u>Request Source:</u> VADAS (constant unless instructed differently)

e. <u>LOINC</u>: 34794-8 (only that code is used until VA implements LOINC nomenclature)

Figure 40: Configure DoD Connector settings

cVIX Service Installation Wizard 30.230.3.6676 - Developer Mode
Configure DoD connector
Enter the requried CVIX connection information.
Station 200 Configuration
Username: ODWC631
DoD Connector
Host das-test va.gov Provider 123
Port 443 Request Source VADAS LOINC 34794-8
Install The Visual Studio 2008 VC++ runtime is installed.
Reinstall The DoD Connector Certificates are installed.
Validate
< Back Next > Cancel

- 22. If needed, press Install to install the Visual Studio 2008 VC++ runtime.
- 23. For installing The DoD Connector (DAS) certificates (Figure 41), select the zip file DAS provided:

Figure 41: Install the DoD Connector (DAS) Certificates Setup

	DoD Connector Certificates Setup
Sele	ect the file which contains the certificates.
Select	D:\Installs\CVIX\DAS-derfiles.zip
	OK Cancel

- 24. Press Validate, and then Next to continue.
- 25. Press Install to install the CVIX.
- 26. When complete, the CVIX should be installed. Select **Finish** to close the CVIX installation wizard.

#### **Post Install Steps**

After the CVIX installation has been completed, the server must be configured properly for the CVIX to work. *The following steps only need to be done once for a server node*.

## **Prevent Automatic Java Update**

The java installer (oracle) by default requests for jre updates that must be suppressed. The following manual steps will prevent automatic java updates. (Note: these steps are not needed if the MAG\*3.0\*230 installer installed Java Runtime Environment version 8.0\_202 during installation.).

- 1. Click Windows Start.
- 2. Type JavaC and select Configure Java.
  - a. If the update tab does not display, no additional steps are needed.
- 3. The Java Control Panel window will pop up; in the Update tab, disable automatic updates by clearing the "Check for Updates Automatically" checkbox 4. In the pop-up window, click **Do Not Check**.
- 4. Click Apply (lower right corner), before hitting OK.