

Department of Veterans Affairs
VistA Integration Adapter
Release 1.0.5.0
Enhancement Manual



Version 1.1
September 2014

Revision History

Date	Version	Description	Author
09/28/2014	1.0	Updates associated with the VIA Maintenance Release 1.0.5.0	
09/30/2014	1.1	Updated section 5.6.16 to correct EAR file name	

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1 Overview

This document details the content of and steps necessary for deploying Veterans Health Information Systems and Technology Architecture (VistA) Integration Adapter (VIA) 1.0.5.0 enhancement release.

****NOTE****

It is important to understand that VIA is known by several different acronyms. The AITC has assigned IVA as the application name. The mumps namespace is VIAB. For the purposes of this document VIA, IVA, and VIAB are interchangeable and refer to the same application.

1.1 Scope

This document focuses on the enhancement of the VIA application for the 1.0.5.0 release. The main purpose of this release is to fix an issue reported by the consuming applications in the Production environment.

2 Assumptions

The following are the assumptions that the remainder of this document depends on to be true:

- Load balancing:
 - Global traffic will be handled by the F5 Global Traffic Managers
 - Local traffic will be handled by the F5 Local Traffic Managers
- The installation will first occur at AITC , followed by PITC.
- The target servers at AITC are listed below:
 - Preproduction : [REDACTED]
 - Production : [REDACTED]
- The target servers at PITC are listed below:
 - Preproduction : [REDACTED]
 - Production : [REDACTED]
- A dedicated Oracle WebLogic 11g application server 10.3.6 has been installed.
- JAVA_HOME is correctly set and added to the PATH. The JAVA_HOME points to the latest version of Java.
- Weblogic Identification (ID) and password information for the VIA WebLogic environment have been established. These credentials will be used when implementing this release.
- All steps in this document must be executing in the order provided.

- All screenshots and tables are to serve as visual guidance only, and may contain versions that do not reflect the actual version being deployed.

3 Required Elements

3.1 Release Artifacts

- All of the files needed to deploy the VIA Version 1.0.5.0 Release are contained within the 1.0.5.0.zip file. The 1.0.5.0 zip file contains the following artifact:
 - `via-core-ear-1.0.5.0-RELEASE.ear`
- EO is responsible for securing the 1.0.5.0 Release zip file.
- Copy all the zip artifact into the same directory. Extract the 1.0.5.0.zip file to an easily accessible location. This location is provided to the EO SAs by the EO Project Team. From this point forward in the document, the root location of the extracted zip file will be referred to as **{extracted-location}**.

3.2 WebLogic

This is the enhancement release of the VIA application. There are no configuration changes, only a deployment of the EAR file for the VIA application:

- `via-core-ear-1.0.5.0-RELEASE` – *new version of the VIA application to support changes to the application.* **This file is included in the 1.0.5.0 ZIP file.**

INSTALLATION STARTS HERE

WEB LOGIC SA STARTS HERE

4 Pre-Release Step

4.1 Stop Weblogic Servers

4.1.1 Launch a web browser to the target WebLogic server.

AITC Production:



AITC Pre-Production:



PITC Production:

[REDACTED]

PITC Pre-Production:

[REDACTED]

- 4.1.2** Log into the WebLogic console using the Weblogic SA user.
- 4.1.3** Select the Servers option and then the Control tab on the Summary of Servers screen. Select the managed servers: via-managed-1 and via-managed-2. Choose the Shutdown button , Force Shutdown Now option.

4.1.4 Verify the managed servers are in SHUTDOWN state

4.1.5 Logon to the Main Linux Server(s) for the environment using the WebLogic user

- The target servers at AITC are listed below:

- Preproduction : [REDACTED]

- Production : [REDACTED]

- The target servers at PITC are listed below:

- Preproduction : [REDACTED]

- Production : [REDACTED]

4.1.6 Navigate to your VIA weblogic domains directory

Type: **cd /u01/app/oracle/weblogic/user_projects/domains/via/bin**

4.1.7 Stop weblogic:

Type: **sh stopWeblogic.sh**

4.1.8 Wait for message confirming shutdown.

4.1.9 If weblogic shutdown fails, then kill the weblogic process directly.

4.1.10 To determine the weblogic process id:

Type: **ps -ef | grep java**

4.1.11 Read the response and determine the processId for the main Admin server and Node Manager

4.1.12 To kill the Admin Server process:

Type: **kill -9 <processId>**

4.1.13 To kill the Node Manager process:

Type: **kill -9 <processId>**

5 VIA Application deployed in WebLogic

5.1 Login to the target servers

5.1.1 SSH Log onto the Weblogic Server using your VA LDAP account username and password.

The target servers at AITC are listed below:

Preproduction : [REDACTED]

Production : [REDACTED]

The target servers at PITC are listed below:

Preproduction : [REDACTED]

Production : [REDACTED]

5.1.2 6.1.2. Sudo to weblogic

Type: **sudo su – weblogic**

Type: **<your ldap password>**

5.2 Backup existing artifacts

5.2.1 Navigate to your weblogic server's *domains* directory:

Type: **cd /u01/app/oracle/weblogic/user_projects/domains**

5.2.2 Show the present domain(s):

Type: **ls -la**

5.2.3 Backup the existing *domains* domain directory:

Type: **cp -rp via via. InstallationDate**

Note: InstallationDate = Today's date

5.3 Start the WebLogic Admin Server

Note: *This only needs to occur on the following servers where the admin server resides*

. [REDACTED]

5.3.1 Navigate to the via domain.

Type: **cd /u01/app/oracle/weblogic/user_projects/domains/via/bin**

5.3.2 Start the weblogic server:

Type: **startWebLogic.sh &**

5.3.3 Wait for the weblogic server to start. When the server returns a message indicating RUNNING mode, then it has started, see below.

<May 22, 2014 9:57:12 AM CDT> <Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>

At this point, the weblogic domain and admin server have been successfully started. A weblogic server start without error messages is a strong indication of success.

5.4 Start the Node Manager

Note: *The Node Manager exists in all servers. Start Node Manager in all target servers for the environment.*

The target servers at AITC are listed below:

Preproduction :

Production :

The target servers at PITC are listed below:

Preproduction :

Production :

5.4.1 Start the NodeManager.

Type: **cd /u01/app/oracle/middleware/wlserver_10.3/server/bin**

Type: **sh startNodeManager.sh &**

Verify that a message similar to the one below is displayed (This may take a moment).

<May 22, 2014 11:36:53 AM> <INFO> <Plain socket listener started on port 5[REDACTED]>

May 22, 2014 11:36:53 AM weblogic.nodemanager.server.Listener run

INFO: Plain socket listener started on port [REDACTED]

5.5 Start the Managed Servers from Weblogic console

5.5.1 Launch a web browser to the target WebLogic server.

AITC Production:

[REDACTED]

AITC Pre-Production:

[REDACTED]e

PITC Production:

[REDACTED]

PITC Pre-Production:

[REDACTED]

5.5.2 Log into the WebLogic console using the Weblogic SA user

5.5.3 In the Domain Structure, navigate to **via > Environment > Servers**. One admin server “**AdminServer**” and two managed servers “**via-managed-1**” and “**via-managed-2**” should be present, as seen in Table 1. “**AdminServer**” should be in a “**Running**” state and the health should be “**OK**” . “**via-managed-1**” and “**via-managed-2**” should be shutdown.

5.5.4 Start the Managed Servers from the console.

5.5.5 Select the “**Control**” tab.

5.5.6 Select the checkbox next to “**via-managed-1**”.

5.5.7 Click the “**Start**” button.


5.5.8 Wait about 30 seconds and click the “refresh” icon to see the status change to “**RUNNING**”.

5.5.9 Select the checkbox next to “**via-managed-2**”.

5.5.10 Click the “**Start**” button.

Wait about 30 seconds and click the “refresh” icon to see the status change to “**RUNNING**”.
You should now have everything running successfully as shown in table 9.

Table 1: VIA Managed Servers Success

<input type="checkbox"/>	Server 	Machine	State	Status of Last Action
<input type="checkbox"/>	<div></div>	Machine_1	RUNNING	None
<input type="checkbox"/>	<div></div>	Machine_1	RUNNING	None
<input type="checkbox"/>	<div></div>	Machine_2	RUNNING	None

5.6 Deploy the new VIA 1.0.5.0 Application EAR File

5.6.1 Open an Internet Browser and navigate to the WebLogic Server Administration Console

AITC Production:

[REDACTED]

AITC Pre-Production:

[REDACTED]

PITC Production:

[REDACTED]

PITC Pre-Production:

- [REDACTED]
- 5.6.2** Log into the WebLogic console as described in steps 5.5.1 –5.5.2.
 - 5.6.3** In the Domain Structure, navigate to **via > Environment > Deployments**.
 - 5.6.4** Find the “via-core-ear-1.0.4.0-RELEASE.ear” deployment and select it. Click on the Delete button in the main window’s Deployments Section.
 - 5.6.5** After the previous deployment is deleted, install the VIA 1.0.5.0 EAR file by selecting the Install button on the Deployments Section.
 - 5.6.6** Click on the “upload your file(s)” link in the “Note:” paragraph.
 - 5.6.7** Click on the “Browse” button next to the “Deployment Archive” text.
 - 5.6.8** Navigate to the **{extracted-location}** folder for the unzipped VIA-1.0.5.0-Release directory.
 - 5.6.9** Select the file via-core-ear-1.0.5.0-RELEASE.ear.
 - 5.6.10** Select the “Next” Button at the top of the main console window.
 - 5.6.11** Wait for a message that indicates that file “via-core-ear-1.0.5.0-RELEASE.ear” has been uploaded successfully”.
 - 5.6.12** On the Summary of Deployments screen, select the “via-core-ear-1.0.5.0-RELEASE.ear” from the list and click Next.
 - 5.6.13** Select the option “Install this deployment as an application”
 - 5.6.14** Click on the “Next” Button.

5.6.15 In the “Select deployment targets” panel select the via.cluster option under the Clusters window. Make sure that the “All servers in cluster option is checked”. Click on the “Next” Button.

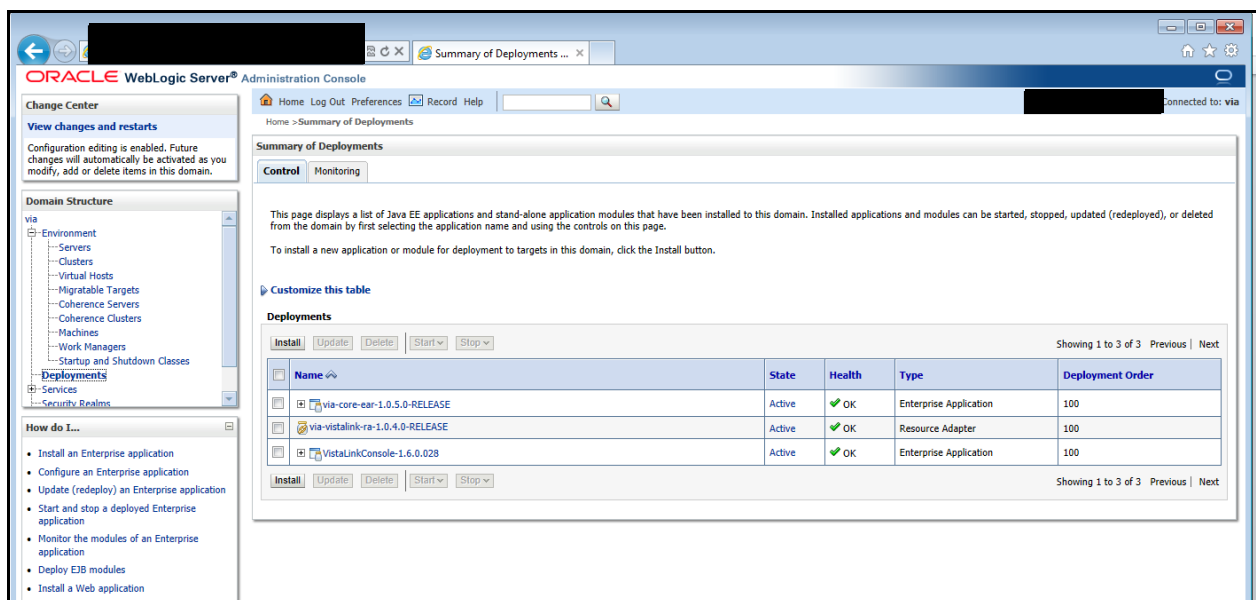
5.6.16 Enter the name “via-core-ear-1.0.5.0-RELEASE.ear” in the Name Input field.

5.6.17 Leave all other default values as they are.

5.6.18 Click on the “Finish” button.

5.6.19 Verify that the deployment was successful with the message “The deployment has been successfully installed.”

Figure 1: Successful VIA EAR deployment



WEB LOGIC SA STOPS HERE

INSTALLATION ENDS HERE

VIA DEPLOYMENT SUPPORT STARTS HERE

6 Verify VIA deployment

6.1 Verify VIA Application Available

The VIA application has a webpage that lists all of the application Web Service Definition Language (WSDL) documents. This WSDL listing provides links to the VIA web-services. To confirm the health of each service, a user can click on each WSDL link and make sure that XML WSDL documents are returned. If problems occur, the deployment has failed. Figure 9 provides a screen shot of the VIA WSDL site.

Open an Internet Browser and navigate to the Webservice Console

AITC Production:

[REDACTED]/via-webservices/services

and

[REDACTED]2/via-webservices/services

AITC Pre-Production:

[REDACTED]via-webservices/services

and

[REDACTED]/via-webservices/services

PITC Production:

[REDACTED]/via-webservices/services

and

[REDACTED]-webservices/services

PITC Pre-Production:

[REDACTED]/via-webservices/services

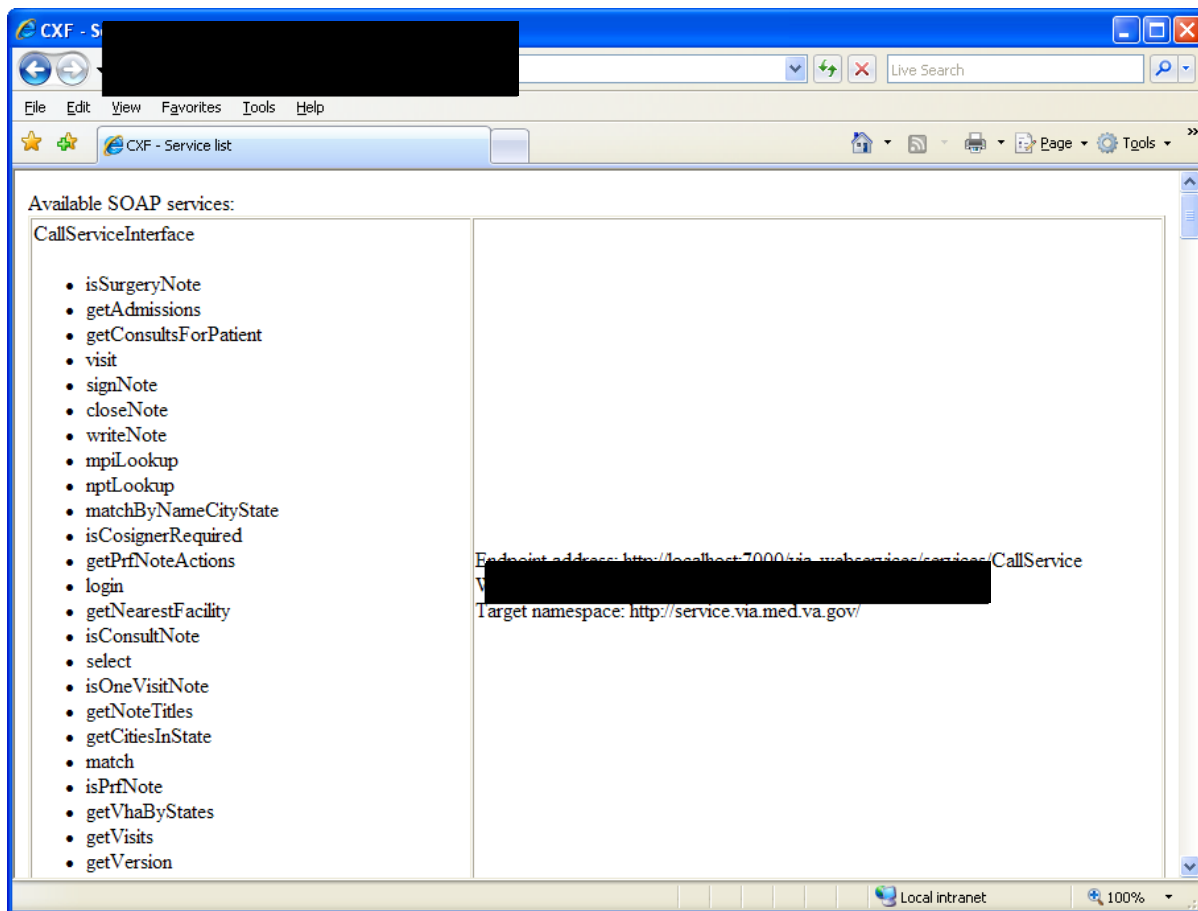
and

[REDACTED]/via-webservices/services

Verify that a web page opens that lists “Available Soap Services”. The page must be similar to Figure 5: VIA WSDL Site.

Verify that any or all of the WSDL links return Web Service Definition Language XML documents. The presence of these WSDL documents indicates that the VIA web services are up and running.

Figure 2: VIA WSDL Site



6.2 Smoke Tests for VIA Pre-production Environments

The VIA development team has SOAPUI tests that can be pointed at the VIA pre-production environment. These SOAPUI tests run a range of web-service calls against targeted VistA test environments. On request, the VIA development team will configure this powerful tool to fully test the deployed VIA web services against test data. However, the use of this tool is not necessary for the deployment of VIA. Furthermore, these tests cannot be executed against production data. Thus, the SOAPUI smoke test details are not documented further. Still, it is recommended to get with the VIA team and run these SOAPUI smoke tests against the pre-production deployment(s) as a final verification of system health.

VIA DEPLOYMENT SUPPORT ENDS HERE

BACKOUT STARTS HERE

7. VIA Deployment Backout Plan

If there are any issues during the 1.0.5.0 Enhancement Release, the VIA application will be rolled back to the current state. All changes implemented will be reverted as described below.

WEBLOGIC SA STARTS HERE

7.1 Revert the VIA Enterprise Archive in Weblogic

- 7.1.1 Log into the WebLogic console as described in steps 5.5.1 – 5.5.2.
- 7.1.2 Click on the Deployments Link in the Domain Structure Window.
- 7.1.3 Find the “via-core-ear-1.0.5.0-RELEASE.ear” (Administrator may have named it differently) deployment and select it. Click on the Delete button in the main window’s Deployments Section.
- 7.1.4 After the previous deployment was deleted, install the old EAR file by clicking on the Install button in the main window’s Deployments Section.
- 7.1.5 Select the file via-core-ear-1.0.4.0-RELEASE.ear from the backup domain directory stored at **/u01/app/oracle/weblogic/user_projects/domains/via.InstallationDate**.

Note- InstallationDate = Today’s Date.
- 7.1.6 Select the “Next” Button at the top of the main console window.
- 7.1.7 Accept the defaults and Click on the “Next” Button.
- 7.1.8 Select the option “Install this deployment as an application”
- 7.1.9 Click on the “Next” Button.
- 7.1.10 Enter the name “via-core-ear-1.0.4.0-RELEASE.ear” in the Name Input field.
- 7.1.11 Leave all other default values as they are.
- 7.1.12 Click on the “Finish” button.
- 7.1.13 Verify that the deployment was successful with the message “The deployment has been successfully installed.”

WEBLOGIC SA STOPS HERE

VIA PD SUPPORT STARTS HERE

Wait for VIA deployment support to verify object build before continuing.

VIA PD SUPPORT STOPS HERE

BACKOUT ENDS HERE

8 Troubleshooting

8.1 JDK 7 Deployment error in WebLogic - VerifyError: Expecting a stackmap frame

This error occurs in certain VIA environments when using the Java version 7. The error happens when the VIA EAR is deployed in Weblogic on the Managed Servers.

Error:

Java.lang.VerifyError: Expecting a stackmap frame at branch target

Solution:

Always use -XX:-UseSplitVerifier as a Java argument when running JVM 7. It will disable the new verifier which requires the need for Stack Frames.

9 Terms and Definitions

Table 4 provides a list of key terms and their associated definitions as used within this document.

Table 2: Terms and Definitions

Term	Definition
DBA	Database Administrator
DUZ	Designated User
EAR	Enterprise Archive
ID	Identification
IP	Internet Protocol
JDBC	Java Database Connectivity
JMS	Java Messaging Service
JNDI	Java Naming Directory Interface
KIDS	Kernel Installation & Distribution System
MUMPS	Massachusetts General Hospital Utility Multi-Programming System
OS	Operating System
RAR	Resource Adapter Archive
RPC	Remote Procedure Call
SID	System Identification

SOAP	Simple Object Access Protocol
SQL	Structured Query Language
SSH	Secure Shell
SUDO	Super User Do
TOAD	Tool for Oracle Application Developers
UI	User Interface
URL	Uniform Resource Locator
VA	Department of Veterans Affairs
VIA	VistA Integration Adapter
VistA	Veterans Health Information Systems and Technology Architecture
WL	WebLogic Queue
WLST	WebLogic Scripting Tool
WSDL	Web Service Definition Language