# National Utilization Management Integration (NUMI)

Server Setup Guide

Release 1.1.14.1



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# **Prepared by Harris Corporation**

## **Revision History**

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#### **Table of Contents**

1.	Introd	luction1
	1.1. Pur	pose1
	1.2. Sco	ope1
	1.3. Tar	get Audience1
2.	Deplo	yment Overview1
	2.1. Nat	ional Deployment Request1
	2.2. Inst	talling NUMI on the Servers1
	2.2.1.	Database Server1
	2.2.2.	Web Server 2
	2.2.3.	Application Server2
3.	Pre-In	stallation Instructions and Preparation3
	3.1. Inst	tallation Process Requirements3
	3.1.1.	Minimum Software Version3
	3.1.2.	Resources Required3
	3.1.3.	CPU Capacity3
	3.1.4.	Disk Space3
	3.1.5.	Devices (Servers, etc.)3
	3.1.6.	VistA Rights Needed for NUMI Users3
	3.2. Inst	tall Software in Test Environments4
		nerate Pre-Installation Reports4
	3.4. Coo	ordinate Installation with Other Teams4
	3.5. Inst	tall Sequence Information for Multiple Patches4
	3.6. Log	off During Installation4
	3.7. Ave	erage Amount of Time Required to Complete the Installation
4.	Datab	ase Information5
5.	Instru	ctions for Installing Database Components5
	5.1. Dat	abase Installation / Restoration Procedures5
6.	Instal	Iation Procedure for Server 2008 R26
	6.1. Pat	ch the OS6
	6.2. SQ	L Server Setup (Windows Server 2008 R2)6
	6.2.1.	Role Setup6

6.3. Wel	o Server Setup (Windows Server 2008 R2)	7
6.3.1.	Role Setup	7
6.3.2.	ASP.NET 2.0 AJAX Extensions 1.0 Setup	10
6.3.3.	Microsoft WSE 3.0 Setup	10
6.4. App	blication Server Setup (Windows Server 2008 R2)	10
6.4.1.	Role Setup	10
6.4.2.	Feature Delegation	13
6.5. Inst	all Microsoft ASP.Net 2.0 AJAX Extensions 1.0	14
6.6. Inst	all Microsoft Web Services Enhancements 3.0	18
6.7. Inst	all SQL Server	22
6.8. Dov	vnload all SQL Server Patches	22
6.9. Res	tore the Appropriate Databases for the NUMI Application	22
6.10.Inst	alling NUMI Exchange on Server 2008 R2	22
6.10.1.	Unzip/Install NUMI Exchange Distribution	23
6.10.2.	NUMI Exchange Web Site Configuration	23
6.10.3.	Application Pool Configuration	27
6.11.Inst	alling MDWS 2.7.3.2 on Server 2008 R2	30
6.11.1.	Download MDWS	30
6.11.2.	Install MDWS Distribution	30
6.11.3.	MDWS Web Site Configuration	30
6.11.4.	Configuration File Setup	34
6.11.5.	MDWS Application Pool Configuration	34
6.11.6.	To Restart IIS	36
6.11.7.	To Test That MDWS Is Working	37
6.12.Inst	alling NUMI on Server 2008 R2	38
6.12.1.	Software Copy Instructions	38
6.12.2.	NUMI Web Site Configuration	39
6.12.3.	Configuration File Setup	45
6.12.4.	Application Pool Configuration	45
	alling CERME (COTS Product) Software and Database from CERM all CD	
	Install CERME on the Application Server	
0.13.2.	Install CERME SSL Certificate	49

	6.14.Setting up NUMI Section in the Windows Event Log	53
	6.15.Validate XML Configuration File Settings	54
	6.16.Perform Restart	55
	6.16.1. Test NUMI Web Site Functionality	56
	6.17.Installing NUMI Synchronizer on the DB Server	56
	6.17.1. Software Copy Instructions	56
	6.18.Add Jobs to the SQL Server	59
7.	Post-Installation Considerations	59

## List of Tables

Table 1: CPRS Rights	4
Table 2: CPRS Access Tabs	4

# List of Figures

Figure 1: SQL Server Role Services	7
Figure 2: NUMI Exchange / MDWS Role Services	
Figure 3: NUMI Exchange/MOWS Web Services (IIS)	9
Figure 4: NUMI Role Services	11
Figure 5: NUMI Web Services IIS	12
Figure 6: IIS Feature Delegation	13
Figure 7: Feature Delegation Selection	14
Figure 8: Microsoft ASP.Net 2.0 File Download-Security Warning Window	15
Figure 9: Microsoft ASP.Net 2.0 Internet Explorer-Security Warning Window	15
Figure 10: Microsoft ASP.NET 2.0 AJAX Extensions 1.0 Setup Wizard Window	16
Figure 11: Microsoft ASP.NET 2.0 AJAX License Agreement Window	16
Figure 12: Microsoft ASP.NET 2.0 AJAX Installation Window	
Figure 13: Microsoft ASP.NET 2.0 AJAX Completion window	18
Figure 14: Microsoft WSE 3.0 File Download-Security Warning Window	19
Figure 15: Microsoft WSE 3.0 Internet Explorer-Security Warning Window	19
Figure 16: Microsoft WSE 3.0 InstallShield Wizard Welcome Window	20
Figure 17: Microsoft WSE 3.0 License Agreement Window	
Figure 18: Microsoft WSE 3.0 InstallShield Wizard Window	21
Figure 19: Microsoft WSE 3.0 Installation Window	
Figure 20: Microsoft WSE 3.0 Completion Window	
Figure 21: Add NUMI Exchange Website	
Figure 22: NUMI Exchange Website	24
Figure 23: NUMI Exchange Basic Settings	25
Figure 24: NUMI Advanced Settings	25
Figure 25: NUMI Exchange Bindings	
Figure 26: NUMI Exchange Authentication Settings	26

Figure 27: NUMI Exchange	e SSL Settings 27
Figure 28: Application Po	ol Window
Figure 29: NUMI Exchange	e Application Pool Basic Settings
Figure 30: NUMI Exchange	Pool Advanced Settings29
Figure 31: Configuring MI	0WS Website
Figure 32: MDWS Website	Basic Settings
Figure 43: MDWS Website	Advanced Settings
Figure 44: MDWS Default	Website
Figure 45: MDWS Binding	s
Figure 46: MDWS Authent	ication34
Figure 47: Configuring Ap	plication Pool Settings35
Figure 48: MDWS Applica	ion Pool Basic Settings35
Figure 49: MDWS Applica	ion Pool Advanced Settings
	ne Message
Figure 51: Unblocking Re	stricted Files in Installation ZIP File
	site 40
Figure 53: NUMI Basic Set	tings 40
Figure 54: NUMI Advance	d Settings
Figure 55: NUMI Bindings	
Figure 56: NUMI Authentic	ation Settings43
Figure 57: NUMI Provider	Settings43
Figure 58: NUMI SSL Setti	ngs
Figure 59: NUMI Compres	sion Settings45
	ol Window
	on Pool Basic Settings 46
Figure 62: NUMI Applicati	on Pool Advanced Settings47
Figure 63: IIS Server Certi	ficates 50
Figure 64: IIS Server Certi	ficate Selection50
	etails51
Figure 66: keytool -keysto	re "C:\Certs\CERME.ks" –list52
Figure 67: Creating a NUM	II section in the Windows Event Log54
Figure 68: Updating Settir	gs in NUMI XML Configuration File
Figure 69: Unblocking Re	stricted Files in Installation ZIP file56
Figure 70: Synchronizer.e	xe Window57
Figure 71: Starting the Se	<sup>.</sup> vice58

# 1. Introduction

This Server Setup Guide explains how to install National Utilization Management Integration (NUMI), Release 1.1.14.1.

# 1.1. Purpose

The purpose of this document is to explain the hardware and software requirements and tasks that must be performed before and after the installation process.

# 1.2. Scope

The scope of this document includes explanations of the appropriate steps to install the NUMI software, and the steps that are needed to be completed before and after the installation process is started.

# 1.3. Target Audience

This document is intended for Information Technology team and/or the individuals who install software in your organization.

# 2. Deployment Overview

The following process is followed to request permission to do a National Deployment.

# 2.1. National Deployment Request

The request for a National Deployment is governed by the ProPath Release Management processes. Please refer to ProPath for guidance on requesting a release. This process must be complete before installation of services on the NUMI servers.

# 2.2. Installing NUMI on the Servers

The steps to install NUMI on the servers are described below. The middle tier of NUMI is Medical Domain Web Services (MDWS), which runs on the web servers. The primary NUMI application servers are located at the Austin Information Technology Center (AITC) facility in Austin, Texas. The application servers run on an Internet Information Services (IIS) Application Server. The NUMI application requires Microsoft ASP .NET 2.0 Ajax Extensions 1.0 and Web Services Enhancements 3.0 to enable the interactions with the Web Services.

## 2.2.1. Database Server

The NUMI database as it exists now is a manifestation of multiple changes over multiple releases. This installation document has as a pre-requisite the backup of an existing NUMI database. Therefore, to install a new NUMI database, it is necessary to restore a backup of an existing NUMI database, and make whatever data alterations are desired for the target environment (i.e., the removal of sensitive data in non-production environments). For an upgrade backup, work from the NUMI 13.2 or 14.0 databases. For a fresh install backup, work from the NUMI 1.1.14.1 database.

Database Platform installation, and Database Restoration Procedures

1. Install Windows Server 2008 on the database server platform

- 2. Download and install any critical patches for the Operating System
- 3. Install the 64 bit Microsoft SQL Server 2005 application according to local "best practices"

3.1. Microsoft's Full Text Search is required for the NUMI installation

3.2. Replication is necessary for the NUMI installation to use the alternate database reporting capability of NUMI

3.3. Reporting Services is not necessary for installation on the NUMI database server

3.4. NUMI's database will function properly in either and active/passive or active/active cluster, but clustering is not required for the NUMI application

4. Apply all appropriate patches (according to local best practices) to Microsoft SQL Server 2005

5. Install / restore the database components according to the instructions in section 5 Instructions for Installing Database Components.

#### 2.2.2. Web Server

To install NUMI Exchange, MDWS software on the Web Server (Server 2)

- 1. Install Windows Server 2008 on the web server platform
- 2. Download and install any critical patches for the Operating System on all web servers
- 3. Install Microsoft ASP.NET 2.0 Ajax Extensions 1.0
- 4. Install Web Services Enhancements 3.0
- 5. Install NUMI Exchange
- 6. Change the web.config file settings as needed
- 7. Install MDWS 2.7.3.2 (pronounced "Meadows")
- 8. Change the web.config file settings as needed

#### 2.2.3. Application Server

To install NUMI application software on the Application Server (Server 3)

- 1. Install Windows Server 2008 on the application server platform
- 2. Download and install any critical patches for the Operating System on all application servers
- 3. Install the CERME 2012.2 application
- 4. Install the NUMI application
- 5. Change the web.config file settings as needed

# 3. Pre-Installation Instructions and Preparation

This section explains the tasks that need to be performed before installing National Utilization Management Integration (NUMI) software. Before proceeding with the installation procedures, consult the list of requirements below.

# 3.1. Installation Process Requirements

It is assumed that the person responsible for doing installations at your site has performed appropriate pre-installation planning.

#### 3.1.1. Minimum Software Version

Operating System: Windows Server 2008

Database: SQL Server 2005

#### 3.1.2. Resources Required

Sys Admin, DBA

#### 3.1.3. CPU Capacity

64GB RAM, 2.8ghz Xeon – Database Server 16GB RAM, 2.8 ghz Xeon – Application Server 8GB RAM, 2.8 ghz Xeon – Web Server

## 3.1.4. Disk Space

SAN – 900 gigabyte

Application server - 100 GB

Web Services server - 100 GB

Database - 800 GB (This includes space needed for the backups and data storage.)

## 3.1.5. Devices (Servers, etc.)

- 1 Database Server
- 2 Application Servers
- 2 Web Servers
- 1 Data Warehouse Server
- 1 SQL Reporting Server

## 3.1.6. VistA Rights Needed for NUMI Users

Each NUMI user must have CPRS access in their VistA menu structure, such as in their secondary menu tree. The VistA menu name is CPRSChart (or CPRS GUI CHART). <u>Table 1</u> and <u>Table 2</u> identify the menus, options and settings these user accounts will need to have assigned.

#### Table 1: CPRS Rights

CPRS Rights
Primary Menu: XMUSER
Primary Menu: MailMan Menu
Secondary Menu: [OR CPRS GUI CHART]
Secondary Menu: CPRSChart Release 1.1.27.77
Keys Held
Patient Selection
Restrict? NO
OE/RR List

#### Table 2: CPRS Access Tabs

Name	Description	Effective Date	Expiration Date
RPT	Reports tab	Sept. 2, 2008	N/A

## **3.2.** Install Software in Test Environments

The software will be installed in the Test environments before installing in Production.

## 3.3. Generate Pre-Installation Reports

Not applicable.

# 3.4. Coordinate Installation with Other Teams

The Installation Team will need to involve the Implementation/Architecture Team.

# 3.5. Install Sequence Information for Multiple Patches

Not applicable.

# 3.6. Logoff During Installation

End users do not need to be logged off during installation (during the act of copying files and installation executions to the server(s)). However, the users must be logged off for any updates to the software (running the executions and/or configuring the software and configuration files). Logging off during software updates is no different than any other logoff that a user may do.

# 3.7. Average Amount of Time Required to Complete the Installation

The average amount of time required to complete the NUMI installation is 2 days.

# 4. Database Information

Please see the *NUMI Systems Management Guide* for information about the structure and components of the NUMI database.

# 5. Instructions for Installing Database Components

The NUMI database as it exists now is a manifestation of multiple changes over multiple releases. This installation document has as a pre-requisite the backup of an existing NUMI database. Therefore, to install a new NUMI database, it is necessary to restore a backup of an existing NUMI database, and make whatever data alterations are desired for the target environment (i.e., the removal of sensitive data in non-production environments). For an upgrade backup, work from the NUMI 13.2 or 14.0 databases. For a fresh install backup, work from the NUMI 1.1.14.1 database.

# 5.1. Database Installation / Restoration Procedures

1. Copy a backup of an existing NUMI database(s) of appropriate size and content to the new NUMI database server

1.1. The application database (typically called NUMI) is necessary for proper function of the application

1.2. The "auditing" database (typically called LogSyncDb) is necessary for proper functioning of the application and the synchronizer

1.3. The CERMe database can be restored from an existing backup, or can be built from scratch from the CERMe installation media

1.3.1. If the CERMe database is restored from an existing backup, verify that the application configuration files reference a database authenticated user that has DBO privilege on the CERMe database for proper functioning of the NUMI application

1.3.2. If the CERMe database is installed from media, follow the instructions provided by McKesson for installation

2. Restore the database backup to the existing server

2.1. File paths will have to be altered according to local best practices

2.2. User accounts may be, but are not required to be, restored with the database. NUMI requires the numi\_user account to be setup.

2.3. Database ownership may be altered so that the owning account for the NUMIdatabase complies with local best practices

2.4. A database authenticated user for the application should be configured, and granted DBO privileges on the NUMI database

3. Run the Install\_XX.sql if it was provided with the build, where XX is the database version for the NUMI build. This will apply changes to the database necessary for the version of NUMI that is being installed.

4. Install the NUMI Synchronizer according to the instructions in section 6.18 Installing NUMI Synchronizer on the DB Server

# 6. Installation Procedure for Server 2008 R2

This section identifies the installation procedures that shall be followed.

# 6.1. Patch the OS

This applies to all servers.

- 1. Open up an instance of Internet Explorer.
- 2. Select menu item <Tools/Windows Update>.

3. Follow the instructions on Microsoft's website. (Note: a restart of the servers may be necessary).

# 6.2. SQL Server Setup (Windows Server 2008 R2)

## 6.2.1. Role Setup

This applies to the SQL database server, with Windows Server 2008 R2 installed. Use Server Manager to install the File Services with the role services shown in Figure 1: SQL Server Role Services.

e storage, enable file replication, man It computers	age shared folders, ensure fast file
Nole Status	
24 hours	
	📸 Add Role Services
Statuc	📲 Remove Role Services
Installed	1
Not installed	
	24 hours 24 hours 25 hours 26 hours 27 hours 28 hours 29 hours 20 hou



## 6.3. Web Server Setup (Windows Server 2008 R2)

#### 6.3.1. Role Setup

This applies to the NUMI Exchange /MDWS web servers, with Windows Server 2008 R2 installed. Use Server Manager to install the File Services and Web Server (IIS) roles with the role services shown in Figure 2: NUMI Exchange / MDWS Role Services and Figure 3: NUMI Exchange / MDWS Web Services (IIS).

earching, and enable access for UNIX clien		manage shared folders, ensure fast file
🔊 Role Status		Go to File Services
Messages: None		
System Services: All Running		
(i) Events: 3 informational in the last 2	24 hours	
Role Services: 1 installed		📸 Add Role Services
Role Service	Status	😤 Remove Role Services
Lie Server	Installed	
Distributed File System	Not installed	
DFS Namespaces	Not installed	
DFS Replication	Not installed	
File Server Resource Manager	Not installed	
Services for Network File System	Not installed	
Windows Search Service	Not installed	
Windows Server 2003 File Services	Not installed	
Indexing Service	Not installed	
BranchCache for network files	Not installed	
Description:		

Figure 2: NUMI Exchange / MDWS Role Services

#### 8 Web Server (IIS)

Provides a reliable, manageable, and scalable Web application infrastructure.

#### 8 Role Status

Message s: None

- System Service s: 3 Running, 1 Stopped
- L: Events: 2 warnings, 12 informational in the last 24 hours Best Practices Analyzer: To start a Best Practices Analyzer scan, go to the Best Practices Analyzer tile on this role's homepage and click Scan this Role

8 Role Services: 24 Installed

Role Service	Status
Web Server	Installed
Common HTTP Features	Installed
Static Content	Installed
Default Document	Installed
Directory Browsing	Installed
HTTP Errors	Installed
HTTP Redirection	Not installed
WebDAV Publishing	Not installed
Application Development	Installed
ASP.NET	Installed
.NET Extensibility	Installed
ASP	Installed
CGI	Installed
ISAPIExten sion s	Installed
!SAPFIlters	Installed
Server Side Includes	Installed
Health and Diagnostics	Installed
HTTP Logging	Installed
Logging Tools	Not installed
Request Monitor	Installed
Tracing	Not installed
Custom logging	Not installed
ODBC Logging	Not installed
Security	Installed
Basic Authentication	Not installed
Windows Authentication	Installed
Digest Authentication	Not installed
Client Certificate Mapping Authentication	
liSClient Certificate Mapping Authentication	Not installed
URL Authorization	Not Installed
Request Filtering	Installed
IP and Domain Restrictions	Not installed
& Performance	Installed
Static Content Compression	Installed
Dynamic Content Compression	Not installed
& Management Tools	Installed
liS Management Console	Installed
liS Management Scripts and Tools	Not installed
Management Service	Not installed
li\$ 6 Management Compatibility	Not installed
IIS 6 Metabase Compatibility	Not installed IIS
6 WMCompatibility	Not installed
IIS6 Scripting Tools	Not Installed lis
6 Management Console	Not installed
FTP Server	Not installed
FTP Service	Not installed
FTP Exten si bility	Not installed
IIS Hostable Web Core	Not installed
1	

. Description :

Web Server provides support for HTML Web sites and optional support for ASP.MET, ASP, and Web server extensions. You can use the Web Server to host an internal or external Web site or to provide an environment for developers to create Web-based applications.

#### Figure 3: NUMI Exchange/MOWS Web Services (IIS)

#### NUMI Server Setup Guide, v1.1.14.1

Web Server (IIS) Help

Ta Go to Web Server (IIS)

**BO**AH

& Romana Rala Savisas

## 6.3.2. ASP.NET 2.0 AJAX Extensions 1.0 Setup

Install the ASP.NET 2.0 AJAX Extensions 1.0 as detailed in section 6.5, Install Microsoft ASP.Net 2.0 AJAX Extensions 1.0.

## 6.3.3. Microsoft WSE 3.0 Setup

Install Microsoft WSE 3.0 as detailed in section 6.6 Install Microsoft Web Services Enhancements 3.0.

# 6.4. Application Server Setup (Windows Server 2008 R2)

## 6.4.1. Role Setup

This applies to the NUMI app servers, with Windows Server 2008 R2 installed. Use Server Manager to install the File Services and Web Server (IIS) roles with the role services shown in Figure 4: NUMI Role Services and Figure 5: NUMI Web Services (IIS).

	ole Status		Go to File Services
	Messages: None		
	System Services: All Running		
(	Events: 3 informational in the last :	24 hours	
🔊 R	ole Services: 1 installed		📸 Add Role Services
Dole	Service	Status	Remove Role Services
L	File Server	Installed	
	Distributed File System	Not installed	
	DFS Namespaces	Not installed	
	DFS Replication	Not installed	
	File Server Resource Manager	Not installed	
	Services for Network File System	Not installed	
	Windows Search Service	Not installed	
	Windows Server 2003 File Services	Not installed	
	Indexing Service	Not installed	
	BranchCache for network files	Not installed	

#### Figure 4: NUMI Role Services

0) Web Server (hiS)	10 Web Server (IiS) Help
Provides a reliable, manageable, and scalable Web application infrastructure.	
0) Role Status	$l^{*}\!d$ Go to Web Server (IiS)
Messages: None System Services: 4 Running, 2 Stopped & Events: 1 warning, 12 informational in the last 24 hours Best Practices Analyzer: To start a Best Practices Analyzer scan, go to the Best Practices Analyzer tile on this role's homepage and click Scan this Role	

Add Role Services

8 Role Services: 33 Installed

Role	Service	Status	& Remove Role Servic
	Common HTTP Features	Installed	
	Static Content	Installed	
	Default Document	Installed	
	Directory Browsing	Installed	
	HTTP Errors	Installed	
	HTTP Redirection	Not installed	
	WebDAV Publishing	Not installed	
	Application Development	Installed	
	ASP.NET	Installed	
	NET Extensibility	Installed	
	ASP	Not installed	
	CGI	Not installed	
	ISAPI Extensions	Installed	
	!SAPFilters	Installed	
	Server Side Includes	Not installed	
	Health and Diagnostics	Installed	
	HTTP Logging	Installed	
	Logging Tools	Installed	
	Request Monitor	Installed	
	Tracing	Installed	
	Custom logging	Not installed	
	ODBC Logging	Not installed	
	Security	Installed	
0		Installed	
&	Disile Authenticotion Windows Authentication	Installed	
	Digest Authentication	Not installed	
	Client Certificate Mapping Authenticati		
	Client Certificate Mapping Authentication		
	Authorization	Not installed	
	Request Filtering	Installed	
	IP and Domain Restrictions	Not installed	
		Installed	
	Performance	Installed	
	Static Content Compression		
	Dynamic Content Compression	Not installed	
	Management Tools	Installed	
	liSManagement Console	Installed	
	liSManagement Scripts and Tools	Installed	
	Management Service	Installed	
	liS6 Management Compatibility	Installed	
	liS 6 Metabase Compatibility	Installed	
	liS 6 WMCompatibility	Installed	
	liS 6 Scripting Tools	Installed	
	liS6 Management Console	Installed	
	FTP Server	Not installed	
	FTP Service	Not installed	
	FTP Extensibility	Not installed	
	liS Hostable Web Core	Not installed	

Web Server provides support for HTML Web sites and optional support for ASP.NET, ASP, and Web server extensions. You can use the Web Server to host an internal or external Web site or to provide an environment for developers to create Web-based applications.

#### Figure 5: NUMI Web Services IIS

### 6.4.2. Feature Delegation

Select the main node in IIS, with the server name. Then double click on "Feature Delegation" item. Change the "Feature Delegation" settings for the server, as shown in Figure 6: IIS Feature Delegation.

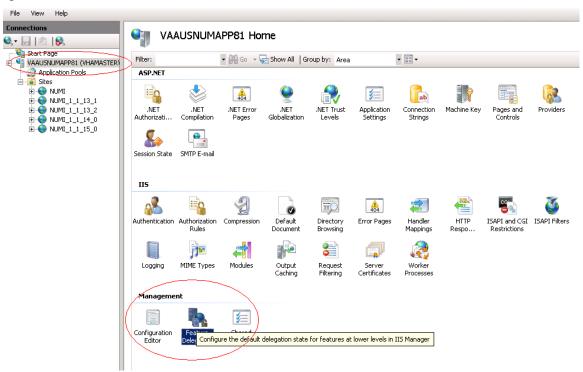


Figure 6: IIS Feature Delegation

Make sure all authentication rules are set to Read/Write as shown in Figure 7: Feature Delegation Selection.

ections	Feature Del	egation
Start Page VAAUSNUMAPP81 (VHAMASTER)	Use this feature to configure	the default delegation state for features at lower levels in IIS Manager.
Application Pools	Group by: No Grouping	-
🗟 Sites	Name 🔶	Delegation
	.NET Authorization Rules	Read/Write
⊕	.NET Compilation	Read/Write
	.NET Error Pages	Read/Write
	.NET Globalization	Read/Write
	.NET Profile	Read/Write
	.NET Roles	Configuration Read/Write
	.NET Trust Levels	Read/Write
	.NET Users	Configuration Read/Write
	Application Settings	Read/Write
	ASP.NET Impersonation	Read/Write
	Authentication - Anonymous	s Read/Write
( )	Authentication - Forms	Read/Write
$\sim$	Authentication - Windows	Read/Write
1	Authorization Rules	Read/Write
	Compression	Read/Write
	Connection Strings	Read/Write
	Default Document	Read/Write
	Directory Browsing	Read/Write
	Error Pages	Read/Write
	Feature Delegation	Read/Write
	Handler Mappings	Read/Write
	HTTP Response Headers	Read/Write
	ISAPI Filters	Read Only
	Logging	Not Delegated
	Machine Key	Read/Write
	MIME Types	Read/Write
	Modules	Read/Write
	Output Caching	Read/Write
	Pages and Controls	Read/Write
	Request Filtering	Read/Write
	Session State	Read/Write
	SMTP E-mail	Read/Write
	SSL Settings	Read Only

Figure 7: Feature Delegation Selection

## 6.5. Install Microsoft ASP.Net 2.0 AJAX Extensions 1.0

This applies to the **web** servers only.

onne

- 1. Download the Microsoft ASP.Net 2.0 AJAX Extensions 1.0 from Microsoft's website.
- 2. Run the ASPAJAXExtSetup.msi by double-clicking it.

3. When the *File Download – Security Warning* window displays, *click* the <Run> button (shown in Figure 8: Microsoft ASP.Net 2.0 File Download-Security Warning window).

File Down	load - Security Warning 🛛 🛛 🗙
Do уои	want to run or save this file?
17	Name: ASPAJAXExtSetup.msi Type: Windows Installer Package, 1.36 MB From: vhaannweb2.v11.med.va.gov
	<u>R</u> un <u>Save</u> Cancel
1	While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. <u>What's the risk?</u>

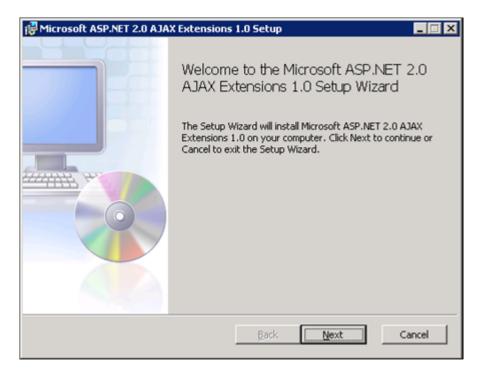


4. When the *Internet Explorer – Security Warning* window displays, *click* the <Run> button (shown in Figure 9: Microsoft ASP.Net 2.0 Internet Explorer-Security Warning window).

Internet	Explorer - Security Warning		×
Do you	want to run this software?		
	Name: <u>ASP.NET 2.0 AJAX Extensi</u> Publisher: <u>Microsoft Corporation</u>	ons	
× Mor	e options	Run	Don't Run
١	While files from the Internet can be use your computer. Only run software from		

#### Figure 9: Microsoft ASP.Net 2.0 Internet Explorer-Security Warning Window

5. When the Microsoft ASP.NET AJAX Extensions 1.0 Setup window displays, click the <Next> button (shown in Figure 10: Microsoft ASP.NET 2.0 AJAX Extensions 1.0 Setup Wizard window).





6. *Click* the "I accept the terms in the License Agreement" checkbox, as illustrated in Figure 11: Microsoft ASP.NET 2.0 AJAX License Agreement window.

7. *Click* the <Next> button.

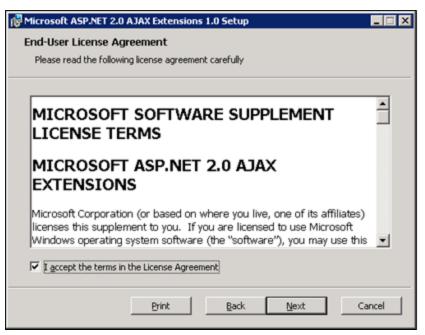
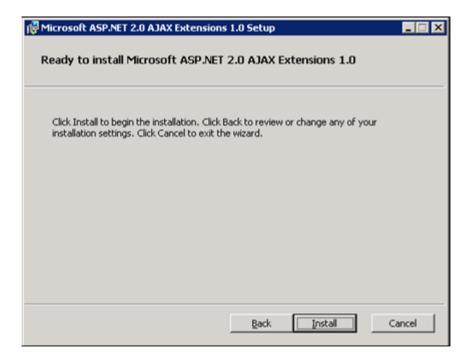


Figure 11: Microsoft ASP.NET 2.0 AJAX License Agreement Window

8. *Click* the <Install> button (shown in Figure 12: Microsoft ASP.NET 2.0 AJAX Installation window).



#### Figure 12: Microsoft ASP.NET 2.0 AJAX Installation Window

9. The installation is complete. Select the *<*Finish> button by *clicking* on it to exit the installation wizard, as depicted in Figure 13: Microsoft ASP.NET 2.0 AJAX Completion window.

If you do not wish to view the release notes, *un-check* the "Display Microsoft"

ASP.NET 2.0 AJAX Extensions 1.0 Release Notes" checkbox.

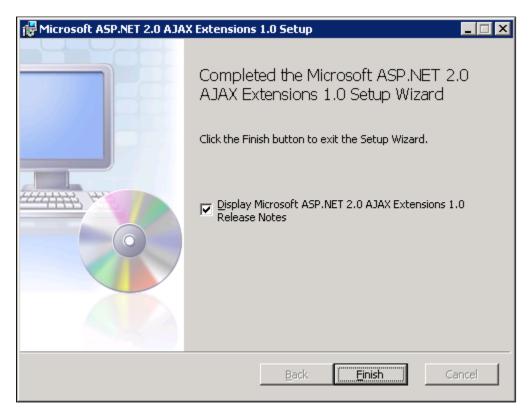


Figure 13: Microsoft ASP.NET 2.0 AJAX Completion window

## 6.6. Install Microsoft Web Services Enhancements 3.0

This applies to the **web** servers only.

- 1. Download the Microsoft Web Services Enhancements 3.0 from Microsoft's website.
- 2. Run the Microsoft WSE 3.0.msi by *double-clicking* it.

3. When the *File Download* – *Security Warning* window displays, *click* the <Run> button (shown in Figure 14: Microsoft WSE 3.0 File Download-Security Warning window).



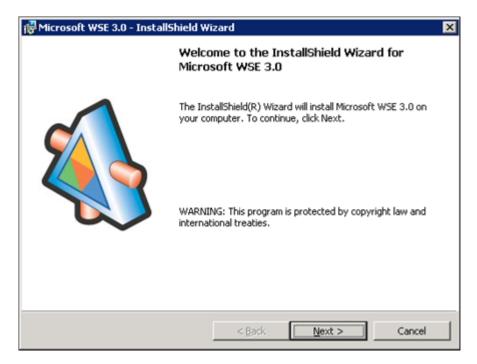
Figure 14: Microsoft WSE 3.0 File Download-Security Warning Window

4. When the *Internet Explorer – Security Warning* window displays, *click* the <Run> button (shown in Figure 15: Microsoft WSE 3.0 Internet Explorer-Security Warning window).

Internet	Explorer - Security Warning		×
Do you	want to run this software?		
	Name: <u>Web Services Enhancement</u> Publisher: <u>Microsoft Corporation</u>	s 3.0 SDK Installatio	on Pac
× Mor	re options	Run	Don't Run
1	While files from the Internet can be usef your computer. Only run software from p		

Figure 15: Microsoft WSE 3.0 Internet Explorer-Security Warning Window

5. When the Microsoft WSE 3.0 – InstallShield Wizard window displays, click the <Next> button (shown in Figure 16: Microsoft WSE 3.0 InstallShield Wizard Welcome window).





6. Click the "I accept the terms in the license agreement" checkbox, as illustrated in Figure 17: Microsoft WSE 3.0 License Agreement window.

7. *Click* the <Next> button.

😽 Microsoft WSE 3.0 - Insta	allShield Wizard	Ŀ
	tense agreement carefully. Before this software can his agreement must be accepted.	Ø
MICROSOFT SOF	TWARE LICENSE TERMS	1
	NHANCEMENTS 3.0 FOR SOFTWARE DEVELOPMENT KIT	
based on where you live, They apply to the softwar	an agreement between Microsoft Corporation (or one of its affiliates) and you. Please read them. re named above, which includes the media on which he terms also apply to any Microsoft	`_
• I accept the terms in the lie	cense agreement Prin	*

#### Figure 17: Microsoft WSE 3.0 License Agreement Window

8. *Click* the <Administrator> radio button, as illustrated in Figure 18: Microsoft WSE 3.0 InstallShield Wizard window.\

9. *Click* the <Next> button.

🙀 Microsoft WSE 3.0 -	🖗 Microsoft WSE 3.0 - InstallShield Wizard 🛛 🛛 🗙		
Setup Type Choose the setup type that best suits your needs.			
Please select a setup	type:		
C Runtime	Installs the runtime files only.		
• Administrator	Runtime install plus standalone tools. Suitable for a deployment scenario where the tools are needed for configuration.		
C <u>D</u> eveloper	Adminstrator install plus documentation and samples. Microsoft .NET Framework SDK 2.0 or Microsoft Visual Studio 2005 are required to view the documentation. Microsoft Visual Studio 2005 is required to build and run the samples.		
C Visual Studio Developer	Developer install plus Visual Studio Tools. Microsoft Visual Studio 2005 is required for this installation type.		
C Cu <u>s</u> tom	Choose which program features you want installed and where they will be installed. Recommended for advanced users.		
InstallShield			
	< Back Next > Cancel		

#### Figure 18: Microsoft WSE 3.0 InstallShield Wizard Window

10. *Click* the <Install> button (shown in Figure 19: Microsoft WSE 3.0 Installation window).

🖟 Microsoft WSE 3.0 - InstallShield Wizard 🛛 🛛 🔀
Ready to Install the Program     Image: Constallation installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstaliShield

#### Figure 19: Microsoft WSE 3.0 Installation Window

11. *Click* the <Finish> button (shown in Figure 20: Microsoft WSE 3.0 Completion window).

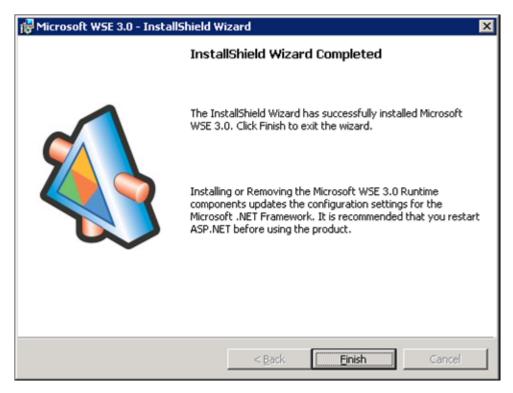


Figure 20: Microsoft WSE 3.0 Completion Window

# 6.7. Install SQL Server

Install the Microsoft SQL Server 2005 Database Server software only on the **database server**, applying both Microsoft installation instructions and local best practices.

All service packs through SP 3 are required; additional service packs or patches may be installed subsequent to application testing, and in accordance with local best practices.

All production NUMI databases should be run in Simple Recovery mode, to enable replication to function, and to maximize the recoverability of the databases. In non-production environments, any recovery mode is acceptable, and simple recovery mode is encouraged for development and QA testing environments due to ease of administration.

# 6.8. Download all SQL Server Patches

This applies to the **database server** only.

# 6.9. Restore the Appropriate Databases for the NUMI Application

This applies to the **database server** only.

Follow the instructions in section 5 Instructions for Installing Database Components.

# 6.10. Installing NUMI Exchange on Server 2008 R2

Before doing this, you must make a backup copy of the web.config file (if this is an upgrade). Settings may need to be extracted from this in the future.

## 6.10.1. Unzip/Install NUMI Exchange Distribution

1. Using Windows Explorer, create the **NumiExchange** folder on the D drive, if available; otherwise create on the C drive. E.g., D:\NumiExchange

2. Unzip the NUMI Exchange files into the NumiExchange folder created above.

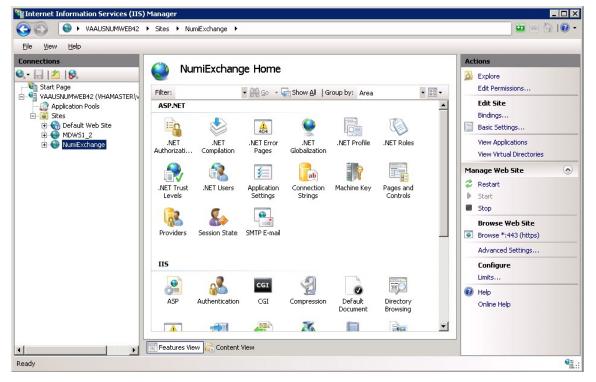
3. Update the application settings in the NUMI Exchange web.config file, located in the directory created above. Typically, this would involve updating the database connection string.

## 6.10.2. NUMI Exchange Web Site Configuration

Using IIS Manager, add a new web site and select the SSL certificate as shown in Figure 21: Add NUMI Exchange web site.

Add Web Site			? X
<u>S</u> ite name:	Application pool:		
NumiExchange	NumiExchange		S <u>e</u> lect
Content Directory			
Physical path:			
D:\NumiExchange\NUMI_	Increment6_Sprint2_Build	2	
Pass-through authenticat	ion		
<u>C</u> onnect as Test S	Settings		
Binding			
	address:	Port	
https 🔽 All	Unassigned	• 443	
<u>H</u> ost name:			
<u>S</u> SL certificate:			
VAAUSNUMWEB81.aac.d	va.va.gov	View	
Start Web site immediate	əly		
		ОК	Cancel

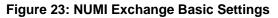






The NUMI web site basic and advanced settings are shown in Figure 23: NUMI Exchange Basic Settings and Figure 24: NUMI Advanced Settings.

Edit Site		? ×
<u>S</u> ite name: <mark>NumiExchange</mark>	Application pool: NumiExchange	Select
Physical path: D:\NumiExchange\NUMI_Increme Pass-through authentication	nt6_Sprint2_Build_2	
<u>Connect as</u> Test Settings.		
	ОК	Cancel



∃ (General)	
Application Pool	NumiExchange
Bindings	https:*:443:
ID	2
Name	NumiExchange
Physical Path	D:\NumiExchange\NUMI_Increment6_Sprint2_Build_201304
Physical Path Credentials	
Physical Path Credentials Logon Type	ClearText
Start Automatically	True
3 Behavior	
Connection Limits	
Enabled Protocols	http
Name [name] A unique name for the site.	

#### Figure 24: NUMI Advanced Settings

The NUMI Exchange web site bindings are shown in Figure 25: NUMI Exchange Bindings.

te Bindir	ngs				?
Type https	Host Name	Port 443	IP Address *	Binding Information	<u>A</u> dd Edit <u>R</u> emove B <u>r</u> owse
					Close

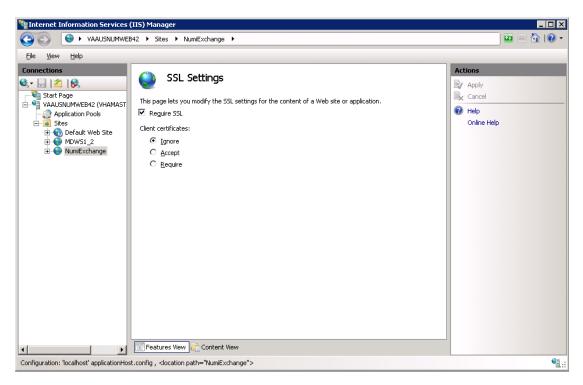
Figure 25: NUMI Exchange Bindings

The NUMI Exchange web site authentication settings are shown in Figure 26: NUMI Exchange Authentication Settings.

1 Internet Information Services (IIS) Manager							
COO VAAUSNUMWEB	42 🕨 Sites 🕨 NumiExchange 🕨			🖸 🖂 🔂 I 🖉 🕶			
<u>Eile View H</u> elp							
Connections	Authentication	Actions  Help Online Help					
🗄 🍕 VAAUSNUMWEB42 (VHAMAST	Group by: No Grouping						
- Application Pools	Name A Anonymous Authentication	Status Enabled	Response Type				
🗄 🕤 😧 Default Web Site	ASP.NET Impersonation	Disabled					
	Forms Authentication	Disabled	HTTP 302 Login/Redirect				
🗄 😜 NumiExchange	Windows Authentication	Disabled	HTTP 401 Challenge				
	Features View						
Configuration: 'NumiExchange' web.conf	ig			Q.:			

Figure 26: NUMI Exchange Authentication Settings

The NUMI Exchange website SSL settings are shown in Figure 27: NUMI Exchange SSL Settings.



#### Figure 27: NUMI Exchange SSL Settings

#### 6.10.3. Application Pool Configuration

The NUMI Exchange application pool setup is shown in Figure 28: Application Pool window.

Internet Information Services (	IIS) Manager							_ 🗆 ×
S S VAAUSNUMWEB	42  Application Pools							🖬 🖾 🛅 I 🕐 🗝
<u>F</u> ile ⊻iew <u>H</u> elp								
Connections Start Page VAUSNUMKEP42 (VHAMAST Application Pools Sites MOWS1_2 NumExchange		status Status Started Started Started Started Started Started Started Started	the list of applic ontain one or mo	w <u>All</u> Group by: N	erver. Application pools an provide isolation among d lo Grouping Identity ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden	fferent Applica O O 1 1 1	<ul> <li>▶</li> <li>₽</li> <li>₽</li></ul>	Add Application Pool Set Application Pool Tasks Start Stop Recycle Edit Application Pool Basic Settings Recycling Advanced Settings Rename Remove View Applications Help Online Help
Ready	Features View	ntent View						• <u> </u>
Ready								<b>~1</b> .:

#### Figure 28: Application Pool Window

The NUMI Exchange application pool basic settings are shown in Figure 29: NUMI Exchange Application Pool Basic Settings.

Edit Application Pool	? ×
Name:	
NumiExchange	
.NET Framework version:	
.NET Framework v2.0.50727	•
Managed pipeline mode:	
Start application pool immediately	
OK Cance	

#### Figure 29: NUMI Exchange Application Pool Basic Settings

The NUMI Exchange application pool advanced settings are shown in Figure 30: NUMI Exchange Application Pool Advanced Settings.

El (General)       v2.0         Enable 32-Bit Applications       False         ManagedPipeline Mode       Integrated         Name       NumExchange         Queue Length       1000         Start Automatically       True         El CPU       Init         init Action       No Action         limit Action       No Action         limit Interval (minutes)       5         Processor Affinity Enabled       False         Process Model       Identity         Identity       Application Poil         Process Model       True         Ping Enabled <t< th=""><th>_</th></t<>	_
NET Framework Versionv2.0Enable 32-Bit ApplicationsFalseManaged Pipeline ModeIntegratedNameNumiE xchangeQueue Length1000Start AutomaticallyTrueEI CPUInitImit0Imit ActionNoActionImit Interval (minutes)5Processor Affinity EnabledFalseProcessor Affinity EnabledFalseProcessor Affinity Mask4294967295EI Process ModelIdentityIdentityApplication PoilIdentityApplication PoilProcess OrphaningFalseEnabledFalseEl Rapid-FailProtectionTrue"Service Unavailable" Response TypeHttplevel<	61
NET Framework Versionv2.0Enable 32-Bit ApplicationsFalseManaged Pipeline ModeIntegratedNameNumiE xchangeQueue Length1000Start AutomaticallyTrueEl CPUImitImit0Imit ActionNoActionImit Interval (minutes)5Processor Affinity EnabledFalseProcessor Affinity Mask4294967295El Process ModelIdentityIdentityApplication PoilIdentityApplication PoilIdentityResponse Time (seconds)90Startup Time limit (seconds)91SMaximum FailuresS5Shutdown Executable5Shutdown Executable9Startup Time limit (seconds)9Startup Time limit (seconds)9S9S9S9S9S9<	
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Managed Pipeline     Mode     Integrated       Name     NumiE xchange       Queue Length     1000       Start Automatically     True       EI     CPU     Imit       Iimit     0       Iimit     0       Iimit Action     NoAction       Iimit Interval (minutes)     5       Processor Affinity Enabled     False       Processor Affinity Mask     4294967295       El     Process Model       Identity     Application Poil       Ide Time Interval (minutes)     90	
Name       NumiExchange         Queue Length       1000         Start Automatically       True         EI CPU       Imit         imit       0         imit Action       NoAction         limit Action       NoAction         limit Action       NoAction         limit Interval (minutes)       5         Processor Affinity Enabled       False         Process Model       Identity         Identity       Application Pool         Ide Time-out (minutes)       20         Ioad User Profile       False         Maximum Worker Processes       I         Ping Enabled       True         Ping Maximum Response Time (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       Enabled         Executable       False         Executable       False         Executable       S         Shutdown Executable       S         Shutdown Executable       S         Shutdown Executable       False         Disable Overlapped Recycle       False <td></td>	
Queue Length       1000         Start Automatically       True         EI       CPU         limit       0         limit Action       NoAction         limit Interval (minutes)       5         Processor Affinity Enabled       False         Processor Affinity Mask       4294967295         EI       Process Model         Identity       Application Poil         Identity       False         Startup Time limit (seconds) <td< td=""><td></td></td<>	
Start Automatically       True         EI CPU       Imit         Imit Action       NoAction         limit Action       NoAction         lide Thread (minutes)       20         load User Profile       False         Maximum Worker Processes       I         Ping Enabled       True         Ping Maximum Response Time (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         Startup Time Interval (minutes)       5         maximum Response Type       Httplevel         Enabled       True <td></td>	
EI CPU limit Action NoAction limit Interval (minutes) 5 Processor Affinity Enabled False Processor Affinity Mask 4294967295 EI Process Model Identity Application Pol Identity Application Pol Ping Panabled True Ping Maximum Response Time (seconds) 90 EI Process Orphaning Enabled False Executable Parameters EI Rapid-FailP rotection "Service Unavailable" Response Type Httplevel Enabled True Failure Interval(minutes) 5 Maximum Failures 5 Shutdown Executable Parameters EI Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event Ioq Entry Private Menory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times Time Span[] A VitualMemory Limit (KB) 0 	
limit       0         limit Action       NoAction         limit Interval (minutes)       5         Processor Affinity Enabled       False         Processor Affinity Mask       4294967295         El Process Model       Identity         Identity       Application Poil         Process Orphaning       False         Executable       False         Executable       Protection         "Service U	
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limit Interval (minutes)5Processor Affinity EnabledFalseProcessor Affinity Mask4294967295El Process ModelIdentityIdentityApplication Policition PolicitiesEl Process OrphaningFalseEnabledTrueEnabledFalseExecutableFalseExecutableFalseExecutableSinutown ExecutableShutdown ExecutableSinutown ExecutableShutdown Executable ParametersFalseEl RecyclingDisable Overlapped RecycleFalseDisable Recycling for Configuration ChangeFalseB Generate Recycle Event Ioq Entry Private Memory Limit (KB)ORegular TimeInterval(minutes)1740 Request limitB Specific TimesTimeSpan[] AVitualMemory Limit (KB)OImagedRuntimeVersion] Configures the application pool to D	
Processor Affinity Enabled       False         Processor Affinity Mask       4294967295         El Process Model       Identity         Identity       Application Policition Policitic Polici	
Processor Affinity Mask       4294967295         EI Process Model       Identity       Application Policition Policities         Ping Period (seconds)       20         Ping Period (seconds)       30         Shutdown Time Limit (seconds)       90         Ping Period (seconds)       90         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Enabled       False         Executable       False         Executable       False         Executable       False         Enabled       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable Parameters       El Recycling         Disable Overlapped Recycle       False         Disable Overlapped Recycle       False         B Generate Recycle Event Ioq Entry       Private Memory Limit (KB)       0         Reguest limit </td <td></td>	
EI       Process Model         Identity       Application Policition Policities         Ping Enabled       False         Ping Enabled       True         Ping Maximum Response Time (seconds)       90         Ping Period (seconds)       90         Shutdown Time Limit (seconds)       90         EI       Process Orphaning         Enabled       False         Executable       False         Executable       False         Executable       False         Executable       False         Executable       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable Parameters       EI         EI Recycling       O         Disable Overlapped Recycle       False         Disable Overlapped Recycle       False         IB Generate Recycle Event Ioq Entry       Private Memory Limit (KB)       0         Request limit       0       0	
Identity       Application Policition Policitic Processes         Ping Enabled       False         Ping Period (seconds)       90         Ping Period (seconds)       90         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Enabled       False         Executable       False         Executable       False         Executable       False         Enabled       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       5         Shutdown Executable       5         Shutdown Executable Parameters       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         B Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740       Request limit         IB Specific Times       TimeSpan[] A	
Idle Time-out (minutes)       20         Ioad User Profile       False         Maximum Worker Processes       I         Ping Enabled       True         Ping Maximum Response Time (seconds)       90         Ping Period (seconds)       30         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Executable       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event Ioq Entry       Private Memory Limit (KB)       0         Request limit       0       0         IB Specific Times       Time Span[] A       Vitual Memory Limi	vitaeblio
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Ping Enabled       True         Ping Maximum Response Time (seconds)       90         Ping Period (seconds)       30         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       90         Enabled       False         Executable       False         Executable       False         Executable       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       Shutdown Executable         Shutdown Executable       Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740       Request limit         B       Specific Times       Time Span[] A         VitualMemory Limit (KB)       0       0	
Ping Maximum Response Time (seconds)       90         Ping Period (seconds)       30         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Enabled       False         Executable       Executable         Executable       True         Failure Interval (minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         B Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740       Request limit       0         IB Specific Times       Time Span[] A       Vitual Memory Limit (KB)       0         .NET Framework Version       [managedRuntimeVersion] Configures	
Ping Period (seconds)       30         Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Enabled       False         Executable       Executable         Executable       True         Failure Interval       5         Maximum Failures       5         Shutdown Executable       S         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Request limit       0       0         IB Specific Times       Time Span[] A       Vitual Memory Limit (KB)         Ntt Framework Version       [managedRuntimeVersion] Configures the application pool to limit	
Shutdown Time Limit (seconds)       90         Startup Time limit (seconds)       90         El Process Orphaning       False         Enabled       False         Executable       Executable         Executable       False         Executable       False         Executable       False         Executable       False         Executable       False         Executable       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Request limit       0       IT40         Request limit       0       IB       Specific Times         VitualMemory Limit (KB)       0       ItmeSpan[] A         VitualMemory Limit (KB)       0       ItmeSpan[] A	
Startup Time limit (seconds)       90         EI Process Orphaning       False         Enabled       False         Executable       Executable         Executable       False         Executable       False         Executable       False         Executable       False         Executable       False         Executable       False         Executable       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Request limit       0       1740         Request limit       0       0         IB Specific Times       Time Span[] A       Vitual Memory Limit (KB)         Vitual Memory Limit (KB)       0       0	
EI Process Orphaning       False         Enabled       False         Executable       Executable Parameters         EI Rapid-FailP rotection       "Service Unavailable" Response Type         Httplevel       Enabled         Enabled       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Request limit       0       If 40         Request limit       0       It 95 pecific Times         VitualMemory Limit (KB)       0       It 90         .       NET Framework Version       [managedRuntimeVersion] Configures the application pool to 1	
Enabled       False         Executable       Executable         Executable       Parameters         EI       Rapid·FailProtection         "Service Unavailable" Response Type       Httplevel         Enabled       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change       False         IB Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740       Request limit         IB Specific Times       Time Span[] A       Vitual Memory Limit (KB)       0         INET Framework Version       [managedRuntimeVersion] Configures the application pool to I	
Executable Executable Executable Executable Executable Executable FailProtection "Service Unavailable" Response Type Httplevel Enabled True Failure Interval(minutes) 5 Maximum Failures 5 Shutdown Executable	
Executable Parameters EI Rapid: FailP rotection "Service Unavailable" Response Type Httplevel Enabled True Failure Interval(minutes) 5 Maximum Failures 5 Shutdown Executable Shutdown Executable Parameters EI Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0	
El Rapid·FailP rotection "Service Unavailable" Response Type Httplevel Enabled True Failure Interval(minutes) 5 Maximum Failures 5 Shutdown Executable Shutdown Executable Parameters El Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0 NET Framework Version [managedRuntimeVersion] Configures the application pool to I	
"Service Unavailable" Response Type Httplevel Enabled True Failure Interval(minutes) 5 Maximum Failures 5 Shutdown Executable Shutdown Executable Parameters El Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0	
Enabled       True         Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       5         Shutdown Executable       5         Shutdown Executable       5         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change False       18         Generate Recycle Event log Entry       9         Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740         Request limit       0         IB Specific Times       TimeSpan[] A         VitualMemory Limit (KB)       0	
Failure Interval(minutes)       5         Maximum Failures       5         Shutdown Executable       5         Shutdown Executable       5         Shutdown Executable       5         Shutdown Executable       5         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change False       18         Generate Recycle Event log Entry       9         Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740         Request limit       0         IB Specific Times       TimeSpan[] A         VitualMemory Limit (KB)       0         .NET Framework Version       [managedRuntimeVersion] Configures the application poolto limit	
Maximum Failures       5         Shutdown Executable       5         Shutdown Executable       Shutdown Executable         Shutdown Executable       False         Disable Overlapped Recycle       False         Disable Recycling for Configuration Change False       18         B Generate Recycle Event log Entry       Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740         Request limit       0         18       Specific Times       TimeSpan[] A         Vitual Memory Limit (KB)       0         INET Framework Version       [managedRuntimeVersion] Configures the application pool to 1	
Shutdown Executable Shutdown Executable Parameters El Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to 1	
Shutdown Executable Parameters EI Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to I	
El Recycling Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VirtualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to l	
Disable Overlapped Recycle False Disable Recycling for Configuration Change False IB Generate Recycle Event Ioq Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A Virtual Memory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to I	
Disable Recycling for Configuration Change False IB Generate Recycle Event log Entry Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to l	
B Generate Recycle Event log Entry         Private Memory Limit (KB)       0         Regular TimeInterval(minutes)       1740         Request limit       0         IB Specific Times       TimeSpan[] A         Vitual Memory Limit (KB)       0         .NET Framework Version       [managedRuntimeVersion] Configures the application pool to limit	
Private Memory Limit (KB) 0 Regular TimeInterval(minutes) 1740 Request limit 0 IB Specific Times TimeSpan[] A Vitual Memory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to I	
Regular TimeInterval(minutes)       1740         Request limit       0         IB Specific Times       TimeSpan[] A         VitualMemory Limit (KB)       0         .NET Framework Version         [managedRuntimeVersion] Configures the application pool to I	
Request limit 0 IB Specific Times TimeSpan[]A VitualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to l	
IB Specific Times TimeSpan[] A VitualMemory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to 1	
Virtual Memory Limit (KB) 0 .NET Framework Version [managedRuntimeVersion] Configures the application pool to l	
.NET Framework Version [managedRuntimeVersion] Configures the application pool to l	ray
[managedRuntimeVersion] Configures the application pool to	
.NET Framework. Selecting "No Managed Code" willcause all A	
	OK Cancel

### Figure 30: NUMI Exchange Pool Advanced Settings

## 6.11. Installing MDWS 2.7.3.2 on Server 2008 R2

Before doing this, you must make a backup copy of the web.config file (if this is an upgrade). Settings may need to be extracted from this in the future.

### 6.11.1. Download MDWS

Download MDWS 2.7.3.2 from:

ftp://downloads.medora.va.gov/mdws

### 6.11.2. Install MDWS Distribution

Install MDWS following the MDWS Installation Instructions located at:

http://trac.medora.va.gov/web/wiki/Projects/MDWS/Installation

It is recommended that MDWS be installed in the D:\NUMI folder. e.g., D:\NUMI\NUMI2\_7\_3\_2

The following steps from the MDWS Installation Instructions can be skipped:

- Step 4. SQL Server 2008 (optional for non-BSE installations).
- Step 6. Oracle ODAC Server Software.

web.config settings to update:

<system.webServer>

<defaultDocument >

<files>

```
<add value="NumiService.asmx" />
```

</files>

</defaultDocument>

</system.webService>

## 6.11.3. MDWS Web Site Configuration

The MDWS web site configuration is shown in Figure 41: Configuring MDWS Website, Figure 42: MDWS Website Basic Settings and Figure 43: MDWS Website Advanced Settings.

HINTERNET INFORMATION SERVICES (IIS)	1anager -	
COO I VAAUSNUMWEB22	Sites 🕨 Default Web Site 🔺 mdws2 🕨	🖸 🖂 🔂 🛛 🗠
<u>File View H</u> elp		
Connections Start Page VALUSNUMWEB22 (VHAMASTER)vi Application Pools Sites Connections Application Pools Model Site Model Site Site Model Site Model Site Site Site Model Site Model Si	/mdws2 Home Filter: ASP.NET Authorizati Compilation .NET Trust Levels Session State SMET E-mail Met Pages Session State Met Pages Session State Met Pages Session State SMET Profile Met Pages Session State SMET Profile Session State Met Pages Session State SMET Profile Session State SMET Profile Session State SMET Profile Session State SMET Profile SMET Profile Session State SMET Profile SMET Profile Session State SMET Profile SMET Profile SMET Profile Session State SMET Profile SMET Profi	Actions            Explore Edit Permissions             Basic Settings View Virtual Directories          Manage Application Browse Application            Browse *18082 (http) Advanced Settings             Help Online Help
	ASP Authentication CGI Compression Default Document	
Ready		• <b>1</b> .:

Figure 31: Configuring MDWS Website

dit Applicatio	n		? ×
Site name: Path:	Default Web Site /		
<u>A</u> lias:		Application pool:	
mdws2		MDWS2_APP_POOL	S <u>e</u> lect
Example: sale	es		
Physical path	:		
D:\MDWS\MD	)WS2_7_3_2		
Pass-through	authentication		
<u>C</u> onnect as.	Test Settings		
		ОК	Cancel

### Figure 32: MDWS Website Basic Settings

(General)		
Application Pool	MDWS2_APP_POOL	
Physical Path	D:\MDW5\MDW52_7_3_2	
Physical Path Credentials		
Physical Path Credentials Logon Type	ClearText	
Virtual Path	/mdws2	
Behavior		
Enabled Protocols	http	
pplication Pool applicationPool] Configures this applicatio	on to run in the specified application pool.	

#### Figure 33: MDWS Website Advanced Settings

The MDWS bindings configuration is shown in Figure 44: MDWS Default Website and Figure 45: MDWS Bindings, If NUMI Exchange is installed on the server using port 80, then configure MDWS to use a different port, e.g., port 8082.

Number Information Services (IIS)	Manager	
COO NAAUSNUMWEB22	▶ Sites ▶ Default Web Site ▶	- • • • • • • • • • • • • • • • • • • •
<u>File V</u> iew <u>H</u> elp		
Elle View Help Connections Start Page VAAUSNUMWEB22 (VHAMASTER\vf Application Pools Sites Default Web Site The aspnet_client The mdws2 The MDWS1_2	NET       .NET       .NET	Actions            Explore          Edit Permissions         Edit Site         Bindings            Basic Settings          View Applications         View Virtual Directories         Manage Web Site
4	ASP Authentication CGI Compression Default Document	Limits Help Online Help
Ready		• <u>.</u>

#### Figure 34: MDWS Default Website

te Binding	gs				? )
Туре	Host Name	Port	IP Address	Binding Information	<u>A</u> dd
http net.tcp net.pipe net.m msmq		8082		808:* * localhost localhost	<u>E</u> dit <u>R</u> emove B <u>r</u> owse
					ose

#### Figure 35: MDWS Bindings

The MDWS authentication setup is shown in Figure 46: MDWS Authentication.

Internet Information Services (IIS)	Manager			
VAAUSNUMWEB22	Sites Default Web Site Moderna Mo Moderna Moderna Mo Moderna Moderna Mo Moderna Moderna Mod	•		🖬 🖂 🔂 I 🕑 -
<u>File Vi</u> ew <u>H</u> elp				
Connections	()			Actions
🔍 - 📄 🖄 🔝	Authentication			😢 Help
Start Page	Group by: No Grouping -			Online Help
VAAUSNUMWEB22 (VHAMASTER\vf     Application Pools	Name A	Status	Response Type	-
🗄 📲 🐻 Sites	Anonymous Authentication	Enabled		1
⊡ 💮 Default Web Site ⊕ 📑 aspnet client	ASP.NET Impersonation	Disabled		
aspret_client     mdws2	Forms Authentication Windows Authentication	Disabled Disabled	HTTP 302 Login/Redirect HTTP 401 Challenge	
⊕ 😜 MDW51_2		Dibabiloa	inter chanoligo	
	Features View ह Content View			
				-
Configuration: 'Default Web Site/mdws2' web	).config			¶1:

Figure 36: MDWS Authentication

## 6.11.4. Configuration File Setup

Web.Config

Verify the httpExecution timeout field in the MDWS web.config file:

```
<httpRuntime executionTimeout="900" />
```

VhaSites.xml

If there are any new VistA sites to add to MDWS, add the site information in the MDWS VhaSites.xml file. Follow the same format used for existing sites already in the file. The file is located in the xml folder of the resources directory in the MDWS website directory. E.g., D:\MDWS\MDWS2\_7\_3\_2\resources\xml\VhaSites.xml.

### 6.11.5. MDWS Application Pool Configuration

The application pool settings are shown in Figure 47: Configuring Application Pool Settings, Figure 48: MDWS Application Pool Basic Settings and Figure 49: MDWS Application Pool Advanced Settings.

Internet Information Ser	vices (IIS) Manager						
S S VAAUSN	IUMWEB22      Application	Pools					🖸 🐼 🟠 I 🕐 🔹
<u>File V</u> iew <u>H</u> elp							
Connections Start Page VALUSNUMWEB22 (VH Application Pools Sites MDW51_2	with worker processes, of Filter: Mame A ASP.NET V4.0 ASP.NET V4.0 Cl Classic.NET 49.0 Classic.NET 49.0 DefaultAppPool MDWS1_2 MDWS2_APP_POOL	and manage contain one of Status Status Started Started Started Started Started Started Started	the list of applica or more application	ons, and provide isol	rver. Application pools an attion among different app o Grouping Identity ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden ApplicationPoolIden	Applications  Applications  Applications  O  O  1  1	tions Add Application Pool Set Application Pool Defaults Application Pool Tasks Start Stop Recycle Edit Application Pool Basic Settings Recycling Recycling Recycling Rename Remove View Applications Help Online Help
Ready	Land I and a						• <b>1</b> .:

Figure 37: Configuring Application Pool Settings

Edit Application Pool	? ×
<u>N</u> ame:	
MDWS2_APP_POOL	
.NET Framework version:	
NET Framework v4.0.30319	•
Managed pipeline mode:	
Integrated 🔽	
Start application pool immediately	
OK Cance	el

Figure 38: MDWS Application Pool Basic Settings

Ξ	(General)	▲
	.NET Framework Version	¥4.0 ×
ľ	Enable 32-Bit Applications	False
	Managed Pipeline Mode	Integrated
	Name	MDWS2_APP_POOL
	Queue Length	1000
	Start Automatically	True
Ξ	CPU	
	Limit	0
	Limit Action	NoAction
	Limit Interval (minutes)	5
	Processor Affinity Enabled	False
	Processor Affinity Mask	4294967295
Ξ	Process Model	
	Identity	ApplicationPoolIdentity
	Idle Time-out (minutes)	20
	Load User Profile	False
	Maximum Worker Processes	1
	Ping Enabled	True
	Ping Maximum Response Time (seconds)	90
	Ping Period (seconds)	30
	Shutdown Time Limit (seconds)	90
	Startup Time Limit (seconds)	90
Ξ	Process Orphaning	
	Enabled	False
	Executable	
	Executable Parameters	
Ξ	Rapid-Fail Protection	
	"Service Unavailable" Response Type	HttpLevel
	Enabled	True
	Failure Interval (minutes)	5
	Maximum Failures	5
	Shutdown Executable	•

Figure 39: MDWS Application Pool Advanced Settings

### 6.11.6. To Restart IIS

- 1. Click <Start>.
- 2. *Click* the **Command Prompt** (or <Run>, depending on the Operating System).

- 3. Type: IISReset.
- 4. Click <Enter>.

Watch the command lines to make sure IIS stops and then starts again.

### 6.11.7. To Test That MDWS Is Working

1. Open a browser on the **application** server and enter the following in the Address bar:

#### http://localhost/NumiService.asmx

2. You have the ability to enter either <localhost>, <the actual IP address> or <the name of the server>. Examples: http://localhost/NumiService.aspx and http://hostname.aac.va.gov/NumiService.aspx

- 3. *Click* the  $\langle G_0 \rangle$  button on the browser to go to the address.
- 4. The *NUMI SERVICE* page will display.
- 5. Choose "ConnectAndLogin"
- 6. In the **Sitecode** field, enter the code for the VistA you are trying to access.
- 7. Put in your Access and Verify Codes for the username and password.
- 8. Leave the context field blank.
- 9. *Click* the <Invoke> button.

10. If the connection is successful, the VistA welcome message will display in the form of an xml file. Example:

```
<?xml version="1.0" encoding="utf-8" ?>
- <UserTO xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"</p>
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="http://mdws.med.va.gov/numi/NumiService">
 <name>Doe,John</name>
 <33N>00000001</33N>
 <DUZ>1000000000</DUZ>
 <siteId>506</siteId>
 <orderRole>0</orderRole>
 <greeting>Good evening DOE, JOHN</preeting>
 <siteMessage>..... DEPARTMENT OF VETERANS AFFAIRS VVV
V*AAAA..... ANN ARBOR VA HEALTH SYSTEM VVV V*A AAA.....
VVV V*A AAA..... WARNING: UNAUTHORIZED ACCESS, INCLUDING VVV
V*AAAAAAAAAA..... USE OF ACCESS CODES OTHER THAN YOUR OWN, OR
VVVVV*A AAAAAAAA..... MISUSE OF THIS SYSTEM AND/OR ITS DATA IS A VVV*A
AAAAAAAA.... FEDERAL FELONY WARRANTING FBI INVESTIGATION. V*A
AAAAAAAA.. >>> Production Account <<< -----
----- USER HELP TO INCLUDE
VISTA ACCESS/VERIFY, TELEPHONE PINS, OR NETWORK ACCESS PROBLEMS:
Contact your service ADPAC or the Information Systems Help Desk
(x53500) Help Desk hours 7:00am - 4:30pm, Mon-Fri; for EMERGENCY
repairs after 4:30pm, please call the AOD at x55279. SYSTEM BACKUP
* * * * * * * *
              * * * * * * * * * * * VERIFY CODES must now be 8
characters long and contain at least one letter, one number, and one
symbol(!#$%&*.,><). Thank you. This is a PRODUCTION
account.</siteMessage>
 </UserTO>
```

#### Figure 40: Sample Welcome Message

If the Access and Verify codes are incorrect, this message will be imbedded in the xml: <message>Not a valid ACCESS CODE/VERIFY CODE pair.</message>

If the Site code is incorrect, this message will be imbedded in the xml:

<message>No site for sitecode 50</message>

Other error messages my display due to connectivity issues.

11. After successfully testing the connection, *click* the <<u>here</u>> link in the following string:

'Click here for a complete list of operations'.

12. Select <Disconnect> from the list.

13. *Click* the <Invoke> button. This will prevent a connection from being left open.

## 6.12. Installing NUMI on Server 2008 R2

### 6.12.1. Software Copy Instructions

Right click on the zip file and select the "Unblock" if active and select O.K.. Some security schemes will block certain files from being unpacked, typically the Java files under the "web" directory. Setting the file to Unblock eliminates this problem.

Help	NUMI_Main_1.1	1.15.0_Build_20121019.1.zip Properties 🛛 🔋 🗙			
> Folders 🛛 🔠 🗸	General Security Summary				
Name -		NUMI_Main_1.1.15.0_Build_20121019.1.zip			
■ NOMI_Mail_1.1.15.0_Build_20121019.1.2p	Type of file:	Compressed (zipped) Folder			
	Opens with:	S Compressed (zipped) F Change			
	Location:	C:\Temp			
	Size:	18.8 MB (19,817,151 bytes)			
	Size on disk:	18.9 MB (19,820,544 bytes)			
	Created:	Yesterday, October 22, 2012, 9:41:45 AM			
	Modified:	Yesterday, October 22, 2012, 9:41:46 AM			
	Accessed:	Today, October 23, 2012, 9:11:24 AM			
	Attributes:	□ Read-only □ Hidden Advanced			
	Security:	This file came from another computer and might be blocked to Unblock help protect this computer.			

Figure 41: Unblocking Restricted Files in Installation ZIP File

It is recommended that NUMI be installed in the D:\NUMI folder. Using Windows Explorer, create a **NUMI** folder in D drive, if available, otherwise create in C drive. E.g., D:\NUMI.

Unzip the NumiWebApp folder from the NUMI distribution zip file into the D:\NUMI folder. Rename the NumiWebApp folder using the build name of the distribution zip file.

### 6.12.2. NUMI Web Site Configuration

Using IIS Manager, add a new web site as shown in Figure 52: Add NUMI web site.

Add Web Site ? 🗴
Site name: Application pool: NUMI Select
Content Directory       Physical path:       D:\NUMI\ <install_dir>       Pass-through authentication       Connect as</install_dir>
Binding Iype: IP address: Port: http All Unassigned 80 Host name:
Example: www.contoso.com or marketing.contoso.com
OK Cancel

Figure 42: Add NUMI Website

The NUMI web site basic and advanced settings are shown in Figure 53: NUMI Basic Settings and Figure 54: NUMI Advanced Settings.

Edit Site	? ×
Site name: Applicati	ion pool: S <u>e</u> lect
Physical path: D:\NUMI\ <install_dir></install_dir>	
Pass-through authentication	
Connect as Test Settings	
	OK Cancel

Figure 43: NUMI Basic Settings

#### Advanced Settings

Ξ	(General)	
	Application Pool	NUMI
	Bindings	http:*:11132:,https:*:8132:
	ID	4
	Name	NUMI_Prod_1_1_13_2
	Physical Path	D:\NUMI\ <install_dir></install_dir>
	Physical Path Credentials	
	Physical Path Credentials Logon Type	ClearText
	Start Automatically	True
Ξ	Behavior	
+	Connection Limits	
	Enabled Protocols	http
<del>+</del>	Failed Request Tracing	
	pplication Pool pplicationPool] Configures this applicatio	on to run in the specified application pool.
		OK Cancel

#### Figure 44: NUMI Advanced Settings

The NUMI web site bindings are shown in Figure 55: NUMI Bindings.

? ×

e Bindin	gs				?
Type http https net.tcp net.pipe net.m msmq	Host Name	Port 80 443	IP Address * *	Binding Information 808:* * localhost localhost	<u>A</u> dd Edit <u>R</u> emove B <u>r</u> owse
					<u>C</u> lose

#### Figure 45: NUMI Bindings

The NUMI web site authentication settings are shown in Figure 56: NUMI Authentication Settings and Figure 57: NUMI Provider Settings. Make sure NTLM is before Negotiate in the Providers dialog.

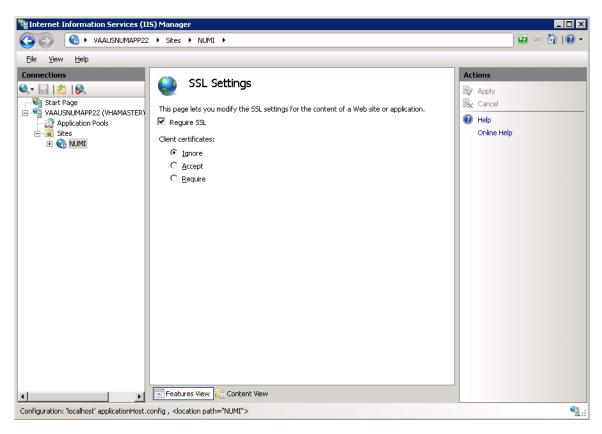
Internet Information Services (119	5) Manager ▶ Sites ▶ NUMI ▶			- 🗆 ×
File View Help	F Siles F NOMI F			
Connections Start Page VAAUSNUMAPP22 (VHAMASTER) Application Pools Sites NUM aspnet_client Masters Src Web	Authentication Group by: No Grouping Anonymous Authentication ASP. NET Impersonation Basic Authentication Forms Authentication Windows Authentication	Status Disabled Disabled Disabled Enabled Enabled	Response Type HTTP 401 Challenge HTTP 302 Login/Redirect HTTP 401 Challenge	Alerts <ul> <li></li></ul>
Configuration: 'NUMI' web.config				• <b>1</b> .:

Figure 46: NUMI Authentication Settings

Providers	? ×
Enabled Providers:	
NTLM Negotiate	Move <u>U</u> p
hegotiate	Move <u>D</u> own
	<u>R</u> emove
<ul> <li>Select a provider from the list of available providers and click Add to add it to the enabled providers.</li> </ul>	
Available Providers:	
	Add
OK	Cancel

### Figure 47: NUMI Provider Settings

The NUMI website SSL settings are shown in Figure 58: NUMI SSL Settings.



#### Figure 48: NUMI SSL Settings

The NUMI web site compression settings are shown in Figure 59: NUMI Compression Settings.

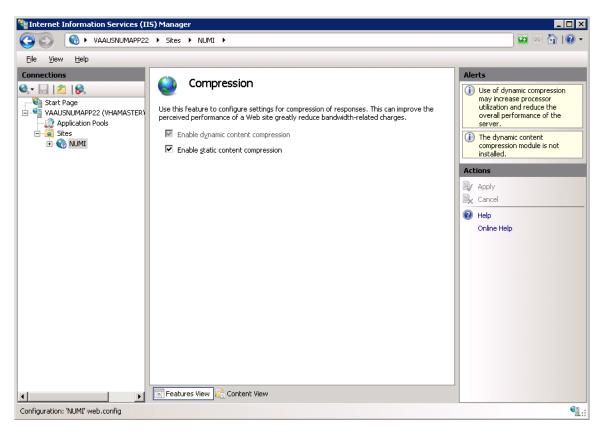


Figure 49: NUMI Compression Settings

### 6.12.3. Configuration File Setup

Verify the httpExectuion timeout field in the NUMI web.config file:

<httpRuntime executionTimeout="300" />

### 6.12.4. Application Pool Configuration

The NUMI application pool setup is shown in Figure 60: Application Pool window.

Internet Information Services (II)	5) Manager						
COO D VAAUSNUMAPP22	Application Pools						🖬 🖂 🟠 I 🔞 🗸
<u>File Yiew H</u> elp							
Connections	Application	and manage rocesses, c Status Status Started Started Started	the list of applica ontain one or mor	Ation pools on the ser re applications, and p All Group by: No Managed Pipeli Integrated Classic Integrated Classic Classic	provide isolation among	<ul> <li>Applic</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> </ul>	Actions Add Application Pool Set Application Pool Defaults P Help Online Help
	Features View	ntent View				Þ	
Ready							• <b>1</b> .:

Figure 50: Application Pool Window

The NUMI application pool basic settings are shown in Figure 61: NUMI Application Pool Basic Settings.

Edit Application Pool	? ×
Name:	
NUMI .NET Framework version:	
.NET Framework v2.0.50727	•
Managed pipeline mode:	
Start application pool immediately	
OK Canc	el

Figure 51: NUMI Application Pool Basic Settings

The NUMI application pool advanced settings are shown in Figure 62: NUMI Application Pool Advanced Settings.

#### Advanced Settongs

6D

El (General)	
.NET Framework Vers1on	v2.0
Enable 32-Bit Applications	False
Managed Pipeline Mode	Classic
Name	NUI"II
Queue Length	1000
Start Automatically	True
EI CPU	
limit	0
limit Action	NoAction
limit Interval (minutes)	5
Processor Affinity Enabled	False
Processor Affinity Mask	4294967295
El Process Model	
Identity	ApplicationPoolIdentity
Idle Time-out (minutes)	20
load User Profile	True
Maximum Worker Processes	
Ping Enabled	True
Ping Maximum Response Time (seconds)	90
Ping Period (seconds)	30
Shutdown Time limit (seconds)	90
Startup Time limit (seconds)	90
El Process Orphaning	
Enabled	False
Executable	raise
Executable Parameters El Rapid-FailProtection	
"ServiceUnavailable" Response Type Enabled	Httplevel
	True
Failure Interval(minutes) Maximum Failures	5
Shutdown Executable	5
Shutdown Executable Parameters	
El Recycling	
Disable Overlapped Recycle	False
Disable Recycling for Configuration Changes	s False
B Generate Recycle Event log Entry	
Private Memory Limit (KB)	0
Regular TimeInterval(minutes)	120
Request limit	0
IB Specific Times	Time Span [] Array
Vintual Memory Limit (KB)	0
.NET Framework Version [managedRuntimeVersion] Configures the app Framework. Selecting "No Managed Code" will	plication poolto load a specific version of the .NET lcause allASP.NET requests to fail.
	ок Салсеl

#### Figure 52: NUMI Application Pool Advanced Settings

## 6.13. Installing CERME (COTS Product) Software and Database from CERMe Install CD

See the *RM Install Guide* PDF file on the CERMe setup CD for detailed instructions on how to setup CERMe. (DBA assistance may be required to setup the database, which must be done before application setup).

### 6.13.1. Install CERME on the Application Server

CERMe install helpful hints: VERSION 12.0 (2013) CUSTOMER ID: 1102

PRODUCT KEY: 755638-507216-296082-523246-21

ORGANIZATION: Department of Veterans Affairs

1. Verify that CERME database is already set up before proceeding with the software installation.

2. If the installation does not start automatically, double click the install.htm file (using Internet Explorer) in the root directory to open the setup welcome page.

3. On license information page, enter the CERME license information provided above and then click "Next".

4. Select Review Manager Enterprise and then click "Next". Select New Installation and then click "Next".

5. When the 'Choose Components" install window is reached select all of the checkboxes and then click "Next".

6. Choose a directory based on local policy (example D:\ Program Files), "Next".

7. On the database page, select "SQL Server" from the dropdown and then click "Next".

8. Enter the **CERME** database connection information, including the database server name, database name (**CERME**), port **1433**, instance (**leave blank**), and the database user credential (user ID **CERME**, DBA assistance required for the password).

9. Choose default settings on the rest of the steps.

10. Use a separate database to store report data and then click No.

11. On the "Install Jetty" window, select Yes to install Jetty.

Installation of the software should start after going through all the setup steps.

After the CERMe application version n.n.n.n and database is installed the following configuration needs to be done.

1. Add the below element in **ReviewManager.xml** file which is located <home directory>  $\ McKesson\CERME\Jetty\$ 

e.g., D:\Program Files (x86)\McKesson\CERME\Jetty\ReviewManager\_xml

Add this element in Config group bottom.

<IntegratedLogin Enabled="true" CookieName="unifiedkey" UnifiedKey="8rzVNfLwjHWHvPctaen9dw=="

AuthenticationFailUrl="/iqm/html/rm\_integrated\_authentication\_failed.htm" GuidUserCid="IQ\_1" Guid="A1B0B165-3C18-4561-935F-5FB81BD42128"

AuthenticateWS="false"/>

2. NOTE- If after successfully setting up the server, it is possible that NUMI will run, but not show any CERMe information. If the user right-clicks on the blank information and views source, they may see a warning about invalid log-in. This is usually because the Integrated Login information entered in the xml file did not get propagated to the CERMe service. Usually, restarting the CERMe service will fix the problem. Before performing a Service Restart, verify ReviewManager.xml contains the correct server name for the desired database access as configured below:

3. Open **jetty.xml** file from <home directory> \ McKesson\CERME\Jetty\etc folder.

<ConParams name="McKCERME" DBtype="MSS" DBCID="" Driver="net.sourceforge.jtds.jdbc.Driver"

URL="jdbc:jtds:sqlserver://<database\_server>:1433/cerme;sendStringParam etersAsUn

icode=false" ABAutoSumConnectionName=""ABIQCConnectionName=""RMDB="Y"

/>

```
<PoolParams dbname="McKCERME" Size="25" PoolMax="35" UseCount="200"
```

Timeout="600"

4. Change the default port to "8357" from "80".

e.g., <Set name="Port"><SystemProperty name="jetty.port" default="8357"/></Set>

### 6.13.2. Install CERME SSL Certificate

NUMI will need SSL certificates for CERMe (for Jetty). NUMI uses the SSL certificate for the server that CERMe is running on. If the sever does not have a SSL certificate installed, follow the normal VA processes for obtaining SSL Certificates and install it.

1. Use IIS Manager to export the current certificate to a .pfx file. Select the server name in the Connections pane and double click on the Server Certificates in the IIS pane as shown in Figure 63: IIS Server Certificates.

3 S S VAAUSNUMAPP42 Eile ⊻iew Help	•	) 🖾 🖂 🕅 I 🕼
Connections Start Page Start Page Automotion Pools Stars Stars NUMI_1_1_13_2 NUMI_1_1_14_0 NUMI_1_1_15_0 NUMI_100_Test NUMI_Debug NUMI_pod NUMI_prodsup	VAAUSNUMAPP42 Home	Actions         Open Feature         Manage Server         Restart         Start         Stop         View Application Pools         View Sites         Change .NET Framework Versit         P Help         Online Help
eady	Features View 💦 Content View	•

#### Figure 53: IIS Server Certificates

2. Select the certificate to export and click on the "Export..." link in the Actions pane, as shown in Figure 64: IIS Server Certificate Selection.

Number Information Services (III	) Manager			_ 🗆 ×
COC 9 VAAUSNUMAPP22	•			) 🖸 🖄 🔯 -
<u>File View H</u> elp				
Connections	v v	e certificates that the Web server ca issued To // WMSvc-VAAUSNUMAPP22 VAAUSNUMAPP22.aac.dva.va.gov	an use with Web sites configured Issued By WMSvc-VAAUSNUMAPP22 VA Internal Subordinate CA 1 VA Internal Subordinate CA 1	Actions Import Create Certificate Request Complete Certificate Request Create Self-Signed Certificate View Export Renew Renew Renove P Help Online Help
Ready				•L::

#### Figure 54: IIS Server Certificate Selection

3. Set the name of the .pfx file. Set the password, e.g., use numi (all lowercase) for the password, as shown in Figure 65: IIS Certificate Details. This password will be used in subsequent steps.

Export Certificate		?	×
Export to:			
D:\Certs\NUMI.pfx			
Password:			
••••			
Confir <u>m</u> password:			
••••			
	ОК	Cancel	

Figure 55: IIS Certificate Details

NOTE: For the following, the password can be whatever you choose, but please make a note of them, as they will be used later. For this example, D:\Certs\NUMI.pfx is the file name and the password, the one that you used to export the .pfx file, e.g., numi (all lowercase).

4. Open a command prompt window and change the current directory to the location of the keytool executable. In this example it would be: D:\Program Files (x86)\McKesson\CERME\Jre\bin\keytool.exe

5. Execute the following command:

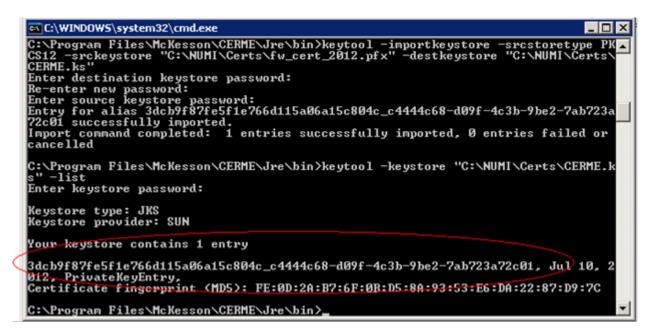
keytool -importkeystore -srcstoretype PKCS12 -srckeystore "D:\Certs\NUMI.pfx" - destkeystore "D:\Certs\CERME.ks"

NOTE: -srckeystore value will be the .pfx path and filename above, -destkeystore can be whatever you choose; again, passwords can be whatever you choose, but please make a note of them. The word "secret" is used as the keystore password in this example.

6. Execute the following command:

keytool -keystore "D:\Certs\CERME.ks" -list

Make a note of the long, auto-generated alphanumeric value circled in red below. Recommended actions are to copy and paste the entire command prompt output to notepad to copy and paste this value.



#### Figure 56: keytool -keystore "C:\Certs\CERME.ks" -list

7. Execute the following command:

keytool -changealias -keystore "D:\Certs\CERME.ks" -destalias numi -alias

<alphanumeric value>

NOTE: Replace <alphanumeric value> with the value noted and circled from the step above. The keystore password is the password specified when creating the keystore above, secret in our example. The key password is the password specified when creating the pfx file, numi in our example.

8. Execute the following command:

keytool -keypasswd -keystore "D:\Certs\CERME.ks" -alias numi

NOTE: With this command, we are changing the key password to "reallysecret" for this example.

9. Next, copy the keystore, (D:\Certs\CERME.ks), to the Jetty\etc directory. For this example it would be here: D:\Program Files (x86)\McKesson\CERME\Jetty\etc

Open the jetty.xml file in the same directory and scroll down to the "add a HTTPS SSL listener" section, (pictured below). If the items highlighted in red exist in your file, delete them. They are xml comments and will cause the section to be ignored. Items highlighted in yellow may need to be updated.

<!---->

<!-- To add a HTTPS SSL listener

<!---->

<!-- if NIO is not available, use org.eclipse.jetty.server.ssl.SslSocketConnector -->

<!--

-->

<Call name="addConnector">

<Arg>

<New class="org.eclipse.jetty.server.ssl.SslSelectChannelConnector">

<Set name="Port">8443</Set>

<Set name="maxIdleTime">30000</Set>

```
<Set name="Acceptors">2</Set>
```

```
<Set name="AcceptQueueSize">100</Set>
```

```
<Set name="Keystore"><Property name="jetty.home" default="."
```

/>/etc/CERME.ks</Set>

<Set name="Password">secret</Set>

<Set name="KeyPassword">reallysecret</Set>

<Set name="truststore"><Property name="jetty.home" default="."

/>/etc/CERME.ks</Set>

<Set name="trustPassword">secret</Set>

</New>

</Arg>

</Call>

-->

10. Open the windows services management console, (START->RUN->services.msc->OK), and restart the CERME service. It will take about 20 to 30 seconds for the service to completely restart, but you should be able to browse directly to the secure CERME. Use whatever URL is used to access NUMI, e.g., https://vaww.prod.temp.numi.med.va.gov/web/home.aspx

11. Replace the "/web/home.aspx" portion with CERME's secure port, (8443 by default), e.g., https://vaww.prod.temp.numi.med.va.gov:8443/

The CERMe website should be displayed and you should not have been warned of the security certificate problem.

## 6.14. Setting up NUMI Section in the Windows Event Log

1. Change Directory - Go to command prompt (run as Administrator) and change current directory to Framework v2.0 bit folder e.g., C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727

2. Install Command - Type InstallUtil.exe /I < source folder full path >\**bin**\**NumiWebApp.dll** under Framework v2.0 folder and press enter.

e.g., InstallUtil.exe /i D:\NUMI\<install\_dir>\bin\NumiWebApp.dll

3. This should create a NUMI section in the Windows Event log.

🛃 Event Viewer					
File Action View Help					
🛃 Event Viewer (Local)	Applications and Services Lo	ıgs			Actions
	Name	Туре	Number of Events	Size	Applications and Services 🔺
Applications and Services Logs Hardware Events	Hardware Events Internet Explorer	Administrative Administrative		68 KB 68 KB	Open Saved Log Create Custom View
Internet Explorer	Key Management Service Microsoft	Administrative	0	68 KB	Import Custom View
⊞	NUMI Operations Manager	Administrative Administrative		68 KB 5.07 MB	View 🕨
Operations Manager Windows PowerShell	Windows PowerShell	Administrative	39	68 KB	Refresh     Help
🛃 Subscriptions					Hardware Events
					Open
					Properties
					🕜 Help
					]

Figure 57: Creating a NUMI section in the Windows Event Log

4. NUMI Event Folder Properties

a. Go to NUMI Properties by right mouse.

b. Click on General Tab under **NUMI** Properties dialog box window. Check/Click on Overwrite events as needed.

- c. Press <apply> button (if needed) and Press <ok> button.
- d. Verify Event View, if any error logs occurred during the installation.

## 6.15. Validate XML Configuration File Settings

Verify that all XML configuration file settings are correct.

Validate NUMI XML Configuration File Settings.

- 1. Edit the application settings in the **web.config** file in the NUMI folder.
- E.g., D:\NUMI\<install\_dir>\web.config

Settings to update:

2. <!-- change this setting to point to the appropriate config file for the deployment. --> <appSettings configSource="src\\main\\resources\\xml\\deployment\\numiwebapp.config"/> <connectionStrings/>

<pre>Elle Edit Format View Help </pre> <pre> Elle Edit Format View Help </pre> <pre> Elle Edit Format View Help </pre> <pre> </pre> <	📕 Web.config - Notepad	_ O ×
<pre><configuration xmlns="http://schemas.microsoft.com/.NetConfiguration/v2.0"> <configsections> <configsections> <csectiongroup authenticationservice"="" isonserialization"="" jonserialization"="" name="system.web.extensions" profileservice"="" scripting"="" scriptresourcehandler"="" src\main\resources\xml\deployment\numiwebapp.config"="" system.web.extensions"="" type="System.Web.Configuration.ScriptingProfileServiceSection&lt;br&gt;&lt;sectionGroup&gt;&lt;br&gt;&lt;sectionGroup&gt;&lt;br&gt;&lt;/sectionGroup&gt;&lt;br&gt;&lt;/sectionGroup&gt;&lt;br&gt;&lt;/sectionGroup&gt;&lt;br&gt;&lt;/configSections&gt;&lt;br&gt;&lt;! change this setting to point to the appropriate config file for the deployment&gt;&lt;br&gt;&lt;appSettings configSource=" webservices"=""></csectiongroup> <settem.web> <htps: web=""> <htps: web="">  <!--<tappSetLimite</a--> requestLimit="100" /&gt;&gt; <!--<tappSetLimite</a--> requestLimit="100" /&gt;&gt; <!--<tappSetLimite</a--><td><pre>  <configuration xmlns="http://schemas.microsoft.com/.NetConfiguration/v2.0"></configuration></pre></td><td></td></htps:></htps:></settem.web></configsections></configsections></configuration></pre>	<pre>  <configuration xmlns="http://schemas.microsoft.com/.NetConfiguration/v2.0"></configuration></pre>	
<pre><section name="profileService" scripting"="" src\main\\resources\\xml\\deployment\\numiwebapp.config"="" system.web.extensions"="" type="System.web.Configuration.ScriptingSecti&lt;/td&gt;&lt;td&gt;ionGroup, System.Web&lt;br&gt;otingScriptResourceH&lt;br&gt;WebServicesSectionGr&lt;br&gt;ingJsonSerialization&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;pre&gt;&lt;! change this setting to point to the appropriate config file for the deployment&gt; &lt;appSettings configSource="></section> <system.web> <thttpruntime executiontimeout="300"></thttpruntime> <t=-<trace enabled="false" pageoutput="false" requestlimit="100"></t=-<trace>&gt; <t!<tidentity impersonate="true"></t!<tidentity>&gt; <t!<sessionstate timeout="2"></t!<sessionstate>&gt;</system.web></pre>	<pre><section false"="" name="profileService" pageoutput="false" requestlimit="100" type="System.Web.Configuration.ScriptingF&lt;/td&gt;&lt;td&gt;ProfileServiceSectio&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;!&lt;trace enabled="></section>&gt; <!--<identity impersonate="true" /-->&gt; <!--<sessionState timeout="2"/-->&gt;</pre>	change this setting to point to the appropriate config file for the deploym<br <appsettings configsource="src\\main\\resources\\xml\\deployment\\NumiwebApp.cor&lt;br&gt;&lt;system.web&gt;&lt;/td&gt;&lt;td&gt;nent&gt;&lt;br&gt;nfig"></appsettings>
	<trace enabled="false" pageoutput="false" requestLimit="100" / > <identity impersonate="true" / > <sessionState timeout="2"/ > <pages validaterequest="false"></pages>	
<pre><controls>         <add assembly="eworld.UI" namespace="eworld.UI" tagprefix="ew"></add>         <add <add="" assembly="AjaxControlToolkit" culture="neutral," namespace="AjaxControlToolkit" publickeytoken="3:" system.web.extensions,="" tagprefix="ajax" version="1.0.61025.0,"></add>         <add assembly="AjaxControlToolkit" namespace="AjaxControlToolkit" tagprefix="customControls"></add>         <add src="~/Inpatient/Controls/TabSelect.ascx" tagname="tab" tagprefix="CustomControls"></add>         <add src="~/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="CustomControls"></add>         <add src="~/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="CustomControls"></add>         <add src="~/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="CustomControls"></add>         <add src="~/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="CustomControls"></add>         <add src="%/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="CustomControls"></add>         <add %="" controls="" eworld.ui"="" filtertable"="" inpatient="" namespace="eworld.UI" src="%/Inpatient/Controls/FilterTable.ascx" tagname="FilterTable" tagprefix="ew"></add> <add <="" <add="" ajaxcontroltoolkit"="" assembly="System.web.Extensions, Version=1.0.61025.0, Culture=neutral &lt;add assembly=" controls="" filtertable.ascx"="" inpatient="" menu.ascx"="" namespace="AjaxControlToolkit" src="~/Inpatient/Controls/TabSelect.ascx" ssembly="AjaxControlToolkit" tag="" tagname="FilterTable" tagpref="" tagprefi="" tagprefix="Custom &lt;add src=" ~=""></add></controls></pre>	l, PublicKeyToken=31 ix="ajax" /> ustomControls" /> mControls" />	

Figure 58: Updating Settings in NUMI XML Configuration File

3. Edit the application settings in the **config** file indicated in the previous entry. Make sure to enter the MDWS server and the NUMI database server names, and the NUMI database password as indicated.

D:\NUMI\<install\_dir>\src\main\resources\xml\deployment\numiweb app.config

Settings to update:

```
<add key="serviceUrl" value="http://<enter_mdws_server>/NumiService.asmx" />
```

```
<add key="numiDbConnectionString" value="Data
Source=<enter_database_server>;Database=NUMI;User
ID=numi_user;Password=xxxxxxx;Trusted_Connection=False" />
```

<add key="reportDbConnectionString" value="Data Source=<enter\_database\_server>;Database=NUMI;User ID=numi\_user;Password=xxxxxxx;Trusted\_Connection=False" />

## 6.16. Perform Restart

#### Restart IIS

- 1. Click <Start>.
- 2. *Click* the **Command Prompt** (or <Run>, depending on the Operating System)
- 3. Type: IISReset
- 4. Click <Enter>.

### 6.16.1. Test NUMI Web Site Functionality

1. Open Internet Explorer and type: http://servername/Web/Home.aspx e.g., https://vaausnumapp40/Web/Home.aspx

## 6.17. Installing NUMI Synchronizer on the DB Server

### 6.17.1. Software Copy Instructions

1. Right click on the zip file, select "Unblock" if active, and select O.K. Some security schemes will block certain files from being unpacked, typically the Java files under the "web" directory. Setting the file to Unblock eliminates this problem.

Help	NUMI_Main_1.1	1.15.0_Build_20121019.1.zip Properties	? ×
j Folders I III →	General Secu	ırity Summary	
Name  Name  NumI_Main_1.1.15.0_Build_20121019.1.zip		NUMI_Main_1.1.15.0_Build_20121019.1.zip	
	Type of file:	Compressed (zipped) Folder	
	Opens with:	S Compressed (zipped) F Change	
	Location:	C:\Temp	
	Size:	18.8 MB (19,817,151 bytes)	
	Size on disk:	18.9 MB (19,820,544 bytes)	
	Created:	Yesterday, October 22, 2012, 9:41:45 AM	
	Modified:	Yesterday, October 22, 2012, 9:41:46 AM	
	Accessed:	Today, October 23, 2012, 9:11:24 AM	
	Attributes:	Read-only Hidden Advance	:d
	Security:	This file came from another computer and might be blocked to help protect this computer.	*

Figure 59: Unblocking Restricted Files in Installation ZIP file

It is recommended that Synchronizer be installed in the D:\NUMI folder. Using Windows Explorer, create a **NUMI** folder in D drive, if available, otherwise create in C drive. E.g., D:\NUMI

2. Unzip the Synchronizer folder from the NUMI distribution zip file into the D:\NUMI folder. Rename the Synchronizer folder using the build name of the distribution zip file.

3. Open Config File - Open **synchronizer.exe.config** file in notepad under D:\NUMI\ <install\_dir> folder.

4. Make sure the configSource points to the Synchronizer.config file path location, e.g., <a href="mailto:<a href="mailto:configSource="src\\main\\resources\\xml\\deployment\\Synchronizer.config">mailto:<a href="mailto:<a href="mailto:synchronizer.config">synchronizer.config</a>

Verify the httpExecution timeout field:

<httpRuntime executionTimeout="900" />

Note: All server configuration targeted files are located at

<destination>:\synchronizer\src\main\resources\xml\deployment

5. Edit the Synchronizer.config file to point to the MDWS server that the synchronizer will be using, e.g.,

<app key="serviceUrl" value="http://vaausnumweb42:8081/NumiService.asmx" />

6. Edit the Synchronizer.config file to point to the Database server that the synchronizer will be using, e.g.,

```
<app key="numiDbConnectionString" value="Data
Source=vaausnumsql83;Database=NUMI;User
ID=numi_user;Password=xxx;Trusted_Connection=False" />
```

7. NOTE: If you are going to specify a different visitor account than the standard DOD visitor, then enter the appropriate visitor information in the Sunchronizer.config file. If you do create a new visitor for your environment, you will need to add the new visitor record to the NumiUser table in the NUMI database, similar to the standard DOD visitor that is already in the table.

8. Change Directory - Go to command prompt (run as Administrator) and change current directory to Framework v2.0 bit folder e.g.,

#### C:\WINDOWS\Microsoft.NET\Framework64\v2.0.50727

9. Install Command - Type installutil.exe –I < source folder full path > \synchronizer.exe (Figure 70: Synchronizer.exe window) under Framework v2.0 folder and press enter. E.g., installutil.exe -I D:\NUMI\<install\_dir>\synchronizer.exe

Figure 60: Synchronizer.exe Window

Start Synchronizer -

Note: The Synchronizer name is hard coded. The synchronizer name can be found during synchronizer setup (See Figure 70: Synchronizer.exe window). The status lines

"Installing Service: xxx" and "Service xxx has been successfully installed" show the synchronizer name.

10. Go to "Services" via "Administration Tools", right click on the service, and select Start (See Figure 71: Starting the Service). Alternately, you could enter "services.msc" in the run box to bring up the Services Explorer window. Verify

'Started' is displayed in the Status column in the row for the Synchronizer Service.

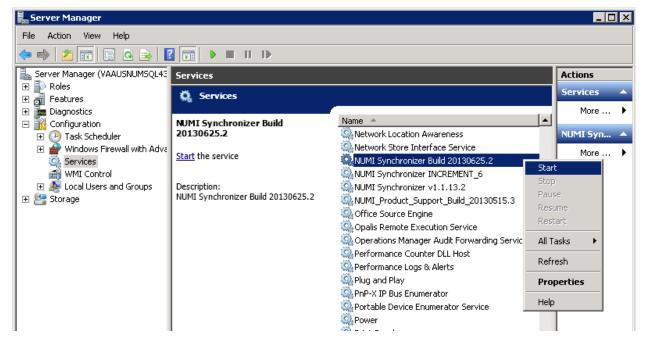


Figure 61: Starting the Service

Uninstall:

If you need to uninstall the NUMI Synchronizer services use: installutil.exe -u

C:\NUMI\ synchronizer\synchronizer.exe

Please see the event logs if you have any issues.

Validate Installation:

To confirm the synchronizer installation

Open Microsoft SQL Server Management Studio after 2 hours. Open a new query and type:

Use numi go.

Select TOP 1000 \* from patientstay.

Click the <Execute> button to run the query. New records shall display.

## 6.18. Add Jobs to the SQL Server

There are three jobs that must be added to the SQL Server, specifically,

NUMI\_PhysicianAdvisorPatientReview\_AutoExpire LogSynchDB\_ValidateSynchronizer NUMI\_AlterIndex\_Rebuild

These jobs can be installed from scripts (included in the build) or, if you are transferring from another server, you can right click on each job and script as DROP and CREATE.

Backup the jobs before you run the scripts. Modify the scripts to replace the @owner\_login\_name with the owner login name appropriate for your installation, if necessary NUMI\_PhysicianAdvisorPatientReview\_AutoExpire is a job that executes the Stored Procedure usp\_PhysicianAdvisorPatientReview\_AutoExpire every day at midnight. The Stored Procedure looks for **Physician UM Advisor** (PUMA) Reviews that have not been completed within 14 days and marks them as Completed with a reason description of Expired.

LogSynchDB\_ValidateSynchronizer is job that executed the stored procedure LogSyncDB.dbo.usp\_LogSync\_ValidateSynchronizer every hour. This stored procedure checks that stays have been imported within the last 3 hours and reports the problem to a pre-defined email distribution list, as decided by the needs of the particular installation

NUMI\_AlterIndex\_Rebuild is a job that executes the stored procedure NUMI.dbo.usp\_AlterIndex\_Rebuild. This stored procedure rebuilds the indexes for the tables in the NUMI database.

# 7. Post-Installation Considerations

If this is applicable to NUMI, this information will be provided by the appropriate project teams.

August 2013

# Acronyms and Descriptions

Acronym	Description
CERMe	CareEnhance Review Management Enterprise
CPU	Central Processing Unit
НТТР	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
IIS	Internet Information Services
MDWS	Medical Domain Web Services
NUMI	National Utilization Management Integration
РМ	Project Manager
PUMA	Physician UM Advisor
QA	Quality Assurance
SQL	Standard Query Language
SSL	Secure Socket Layer
UM	Utilization Management
URL	Uniform Resource Locator