RESOURCE AND PATIENT MANAGEMENT SYSTEM

Practice Management Application Suite

(BPRM)

Installation Guide and Release Notes

Version 3.0
May 2015

Office of Information Technology
Division of Information Technology

Table of Contents

1.0 Release Notes 1
1.1 HEAT Fixes 1
1.2 Bug Fixes 2
1.3 Enhancements 2
2.0 Installation Notes 5
2.1 Contents of Distribution 5
2.2 Required Resources 5
2.2.1 Standalone Application Server Resources 5
2.2.2 Shared Application/MongoDB Server Resources 6
2.2.3 Standalone MongoDB Server Resources 6
2.2.4 Database Server Resources 6
2.2.5 Workstation Resources 7
2.3 Before You Begin: Installation Issues 7
2.4 Prerequisites 7
2.4.1 Ensemble Prerequisites 7
2.4.2 BPRM Prerequisites 7
2.4.3 Other Prerequisites 8
3.0 Installation Overview 9
3.1 BMW Database Deployment Strategy 9
3.2 Application Deployment Strategies 10
3.2.1 Separate BPRM Application Server and MongoDB Database Server – Single RPMS Instance 10
3.2.2 Separate BPRM Application Server and MongoDB Database Server – Multiple RPMS Instances 10
3.2.3 Combined BPRM Application/MongoDB Database Server 11
4.0 Installation Instructions: First-Time Install 12
4.1 Acquire the SSL Certificate 12
4.1.1 SSL Certificate Acquisition – IHS Domain 12
4.1.2 SSL Certificate Acquisition – Non-IHS Domain 16
5.0 BPRM Application Server Installation and Configuration 17
5.1 Microsoft .NET Framework Verification 17
5.2 Microsoft .NET Framework 4.5 Installation 17
5.3 Internet Information Services 7.0 Installation 20
5.4 Windows Communication Foundation Activation 25
5.5 Adding MIME Types 28
5.6 HTTP Compression Configuration 31
5.7 Moonwalk Web Site Setup 33
5.7.1 Add the Application Pool 33
5.7.2 Create a Moonwalk Folder 35

5.7.3 Add the New Site 35
5.8 Install the SSL Certificate 36
5.9 Configure the SSL Certificate 37

6.0 BPRM Database Server Installation and Configuration 40

6.1 Assumptions 40
6.2 Importing a New BPRM XML File 40
6.2.1 Disable Read Only 40
6.2.2 Import the BPRM XML File 41
6.3 Cache User Creation 45
6.3.1 Create the Moonwalk User 45
6.3.2 Assign User Roles 46

7.0 CQM MongoDB Database Installation 49

7.1 Deploying the CQM MongoDB System 49

8.0 Application Deployment to the Web Server 53

8.1 Deploy the BPRM Application 53
8.2 Adding a Database after the Installation 59
8.3 Menu and Security Keys 62
8.4 Open the BPRM Application 64

9.0 Installing BPRM Patches and Updates 67

9.1 Stop the BPRM Web Site on the Application Server 67
9.2 Uninstall the BPRM Application 69
9.3 Install the BPRM Application 69
9.4 Importing a New BMW CACHE.DAT File 75
9.5 Importing a New BPRM XML File 75
9.5.1 Disable Read Only 75
9.5.2 Import the BPRM XML File 76
9.6 Purge the Previous SQL Queries 80
9.7 Start the BPRM Web Site on the Application Server 80

Appendix A: Running the Application Installer from the Command Prompt 81

Appendix B: Running Multiple Instances of BPRM 82

Appendix C: Global Mappings 83

Appendix D: Application Server Specification Example 86

Appendix E: Disable Logging in IIS Manager 88

Acronym List 91

Contact Information 92

Preface

This manual describes the installation of the Practice Management Application Suite (BPRM) and any additional support software needed.

BPRM is a browser-enabled graphical user interface for the Indian Health Service (IHS) Resource and Patient Management System (RPMS) applications. It provides improved access to existing RPMS data, and streamlines the input of new patient data. In some aspects of its operation and configuration, this suite is also referred to by its development name, *Moonwalk*. It should also be noted that prior to V3.0, the previous namespace for the Practice Management Application Suite was BMW. The BMW namespace now refers only to the CACHE.DAT file used by BPRM and other IHS applications.

The BPRM application suite consumes Cache classes, generated by Fm2Class utility, which maps onto FileMan files. Create, read, update, and delete (CRUD) operations can then be performed over the generated Cache classes (SQL tables) via the ADO.NET provider for Intersystems Ensemble/Cache.

1.0 Release Notes

The following sections describe the changes made in BPRM V3.0.

1.1 HEAT Fixes

These changes were made to address specific HEAT tickets:

- HEAT #161184 – Changing name for a user in RPMS to BMW
- HEAT #188786 – Entering notes replaces RPMS text
- HEAT #170263 – Correction for Medicaid Eligible entries
- HEAT #185903 – Face Sheet error for text over 80 characters
- HEAT #158644 – Inactive communities cause loading issues
- HEAT #153585 – Multiple entries in Migrant Homeless causing DB errors
- HEAT #170157 – Entering eligibility end date doesn't inactivate Alternate Resource in RPMS
- HEAT #140577 – Medicaid Rate Code Error in BMW
- HEAT #147991 – Database error when entering homeless or migrant
- HEAT #179532 – User and date last updated are not the same on Registration
- HEAT #206269 – Private Insurance - View Policy Holder detail screen showing patient's work number
- HEAT#195286 – Sensitive Patient Tracking mailman notifications sent for all patients
- HEAT #131520 – Delay in Schedule and Availability updates
- HEAT #170174 – Clinic configuration doesn't load if Access Types File is empty
- HEAT #144042 – Ghost appointments (Appointments with duration of zero minutes)
- HEAT #127080 – Error when adding slots higher than 99
- HEAT #179845 – Time increment display changes when opening clinic w/ different increments
- HEAT #169750 – Special character in appointment letters causing errors
- HEAT #183602 – Unable to view all Resource Groups
- HEAT #131520 – Editing holidays/federal
- HEAT #183602 – Undo/redo check-in creating duplicate visits

- HEAT#182588 – Waitlist report not displaying patients without priority
- HEAT#199559 – Clinic Stop Code field unable to search for 'W. I. C.' code
- HEAT #160499 – Delayed orders not occurring for BMW admissions

1.2 Bug Fixes

These changes were made to correct issues found via in-house testing:

- Sensitive Patient Tracking: Incorrect user was logged
- Private insurance Policy Holder information now displays insured
- Preferred language is now populated with the primary language
- Corrections have been made to MSP Part V question text
- Pseudo SSN is now printed on Face Sheet
- Eligibility dates on Alternate Resources are now editable
- Benefits cases now populate the Assigned By field
- Homeless/Migrant error and warning issues fixed
- Accessing own record message issues has been corrected
- An issue with Present/Current Community when the community is no
- Allow future date for Private Insurance Eligibility start date
- Legal Name - proof provided field not including "N" modifiers
- Mini registration form now clears out last registered patient in
- Access to Scheduling Table Maintenance is now limited to Schedul
- Added check for duplicate wards
- Replaced DGZICE key with DGZPCC key for ADT Coder role
- Fixes for data displayed on A-sheet
- Allow room-bed assignment to multiple wards
- Patient movements trigger Auto-DC and Delayed Order rules
- ADT dashboard – Ward statistics will display active wards only

1.3 Enhancements

These enhancements have been made at the request of users and product analysts:

- Added a BPRM Menu option in RPMS for SPT tracking

- Improvements have been made to list navigation
- The Access Code and Verify Code are no longer case sensitive
- Added a Patient Wellness Handout print option
- Report Access is now controlled by Roles
- Extend space for division dropdown to display full name
- Support for Out Of Browser mode has been dropped from BPRM
- Setup checks: Automated tests have been added to ensure data integrity and proper setup
- Added application signal indicator to toolbar to indicate connectivity
- Added Admin options under Settings module for site administrators
- Rich-Text Save option removed from all reports
- The Insurer Phone number is now displayed under patient's Alternate Resource
- The Preferred Communication and Send Generic Info fields have been moved to the Internet Access page
- Added Marital Status to the Personal Detail section
- Insurance Sequencing in Patient Registration has been improved
- Medicare Part D entries can now be made without Part A/B entries
- Advanced Directives can now be edited
- Legal Documents can now be edited
- Insurance Enrollment Report can be generated for patients without alternate resources
- Added the ability to edit the Alias and Legal Name fields
- Improvements have been made to Slot search on scheduling
- Routing Slip functionality has been added to Scheduling module and Patient Workspace
- User can now search the preferred clinic search by Clinic Name instead of Resource Name
- Added site-specific holidays
- HRNs are now included on Appointment and Cancelation reports
- EHR link – Users can now select the patient context in EHR from Scheduling
- Display HRN and Date on scheduling letters

- Admission, Discharge, and Transfer editing can now be done on the Inpatient Admission Detail screen
- Added readmit prompt on discharge if readmissions are excluded from Delayed Order release events (***Needs EHR v1.1 patch 14 installed***)

2.0 Installation Notes

Prefix: BPRM

Current Version: 3.0

2.1 Contents of Distribution

File	Description
bprm0300.msi	BPRM Application Installer
bprm0300.xml	BPRM data description file
cqm_mongo_db_0101.msi	MongoDB object database system and the Measures and Value Sets database installer
bprm030i.pdf	Version 3.0 Installation Guide and Release Notes
bprm030u_overview.pdf	User Manual – Overview
bprm030u_registration.pdf	User Manual – Patient Registration Module
bprm030u_scheduling.pdf	User Manual – Scheduling Module
bprm030u_adt.pdf	User Manual – ADT Module
bprm030u_cqm.pdf	User Manual – CQM Module
bprm030t.pdf	Technical Manual

2.2 Required Resources

As described in Section 3.2, the BPRM suite can be deployed in several different manners. This section lists the computer resources required for each deployment strategy.

2.2.1 Standalone Application Server Resources

The following resources are required for a standalone application server:

- Microsoft® Windows® 2008 Server x64 bit (or later)
- Microsoft IIS® 7.0 (available with Windows 2008 server by default)
- Microsoft .NET Framework 4.5
- Four processor cores running at 2.0 GHz or faster (for site)
- Eight processor cores running at 2.4 GHz or faster (for area office)
- 4 GB RAM running at 1333 MHz (for site)
- 12 GB RAM running at 1333 MHz (for area office)

- 50 GB minimum free disk space (disk drives should be 10K RPM or faster)

See Appendix D: for a listing of specifications for a typical BPRM application server.

2.2.2 Shared Application/MongoDB Server Resources

The following resources are required if the MongoDB is installed on the application server:

- Microsoft® Windows® 2008 Server x64 bit and up
- Microsoft IIS® 7.0 (available with Windows 2008 server by default)
- Microsoft .NET Framework 4.5
- Four processor cores running at 2.0 GHz or faster (for site)
- Eight processor cores running at 2.4 GHz or faster (for area office)
- 8 GB RAM running at 1333 MHz (for site)
- 12-16 GB RAM running at 1333 MHz (for area office)
- 80 GB minimum free disk space (disk drives should be 10K RPM or faster)

See Appendix D: for a listing of specifications for a typical BPRM application server.

2.2.3 Standalone MongoDB Server Resources

The following resources are required if the MongoDB server is a standalone system:

- Microsoft® Windows® 2008 Server x64 bit and up
- Minimum two processor cores running at 2.0 GHz or faster (for site)
- Minimum four processor cores running at 2.4 GHz or faster (for area office)
- 4 GB RAM running at 1333 MHz (for site)
- 12 GB RAM running at 1333 MHz (for area office)
- 50 GB minimum free disk space (disk drives should be 10K RPM or faster)

See Appendix D: for a listing of specifications for a typical BPRM application server.

2.2.4 Database Server Resources

Database servers running the BPRM application require a minimum 5 GB of free disk space.

2.2.5 Workstation Resources

The following resources are recommended for any workstations accessing the BPRM application:

- Dual-core processor running at 1.8 GHz or faster
- 4 GB of RAM
- 20 GB free disk space
- Screen resolution of 1024 x 768 or higher
- Windows 7 (highly recommended) or Windows XP
- Internet Explorer® 9 (highly recommended) or Internet Explorer 8
- Microsoft Silverlight® 5.0 plugin for Internet Explorer (required)

  The Silverlight plugin can be rolled out on an enterprise basis using Group Policies or another enterprise deployment tool, or it can be installed individually on the workstation. Silverlight is available from Microsoft at this location: http://www.microsoft.com/getsilverlight/get-started/install/default.aspx

2.3 Before You Begin: Installation Issues

Internet connectivity on the application server is necessary to download the required installation items.

2.4 Prerequisites

2.4.1 Ensemble Prerequisites

- BPRM v3.0 currently supports only Ensemble version 2012.2.*x*. Be aware the examples in this Installation Manual reflect Ensemble 2012.2.5. If running a different version, some of the screens may differ slightly from those shown here.
- A BMW-specific CACHE.DAT file must be loaded into the Ensemble server BMW namespace. Acquire this file from OIT SQA; it is not delivered as part of the installation package. Refer to the *BMW CACHE.DAT Installation Guide and Release Notes* for more information.

2.4.2 BPRM Prerequisites

The following KIDS must be installed:

- PIMS v5.3 p1017
- AG v7.1 p11
- AUT v98.1 p26

- XU v8.0
- BJPC v2.0 p10
- AVA v93.2 p22
- AUPN v99.1 p23
- BSDX v3.0
- EHR v1.1 patch 14 (OPTIONAL; For ADT readmit functionality only)

2.4.3 Other Prerequisites

7-Zip software is required to extract the installation files from the BPRM installation package. It is available at http://www.7-zip.org.

3.0 Installation Overview

The BPRM v3.0 installation requires four files. The **bprm0300.xml** data description file and the **bprm0300.msi** application installation file are specific to the BPRM suite. The **cqm_mongo_db_0101.msi** installation file installs the MongoDB object database system and the Measures and Value Sets database used by the Clinical Quality Measures module of the BPRM application suite. These three files are included in the BPRM distribution package.

Additionally, a **CACHE.DAT** file (contained in a zipped file) specific to the Ensemble version is also necessary. This **CACHE.DAT** file is used by BPRM as well as other Meaningful Use Stage 2-compliant IHS applications, and is not included as part of the distribution package. It must be acquired separately from OIT SQA.

Save the **bprm0300.xml** data description file and the zipped file containing the CACHE.DAT file to a folder that is accessible to your database server. Similarly, save the **bprm0300.msi** and **cqm_mongo_db_0101.msi** files to a folder that is accessible to your application server(s). As shown in Section 3.2, the CQM MongoDB system can be installed on a server separate from the BPRM application (recommended) or on the same server. In either case, the **cqm_mongo_db_0101.msi** file should be accessible from the server on which you intend to install it.

Follow the instructions in Chapters 4.0 through 8.0 to install BPRM for the first time at your site. (Refer to Chapter 9.0 if an earlier version of BPRM is installed at your site.)

3.1 BMW Database Deployment Strategy

To minimize changes to the RPMS database, BPRM adopts a strategy where a separate database is mounted or attached on a current Ensemble/Cache server. This mounted database contains already generated Cache classes against FileMan files.

The classes in the BMW database are generated in a specific package called BMW. The BMW package can be mapped onto the RPMS database, thus enabling the RPMS database to consume the mapped classes. The Cache-generated Classes will reside in the BMW database, yet remain available to the RPMS database, thus achieving the goal of minimizing steps for the BMW database setup when it is scaled onto several sites.

3.2 Application Deployment Strategies

BPRM can be deployed in several different configurations. The configuration you use will vary depending on your site's needs and available resources. This section presents three of the most common configurations. In all cases, it is recommended that BPRM be installed on an application server separate from the database server where your RPMS database resides. This helps avoid load balancing issues. The MongoDB is ideally installed on a server separate from the BPRM application server, but in the event no other servers are available, it can be installed on the same server as BPRM.

3.2.1 Separate BPRM Application Server and MongoDB Database Server – Single RPMS Instance

In the example shown in Figure 3-1, the MongoDB is installed on a server separate from the BPRM server. In this example, there is a single instance of RPMS on the RPMS database server

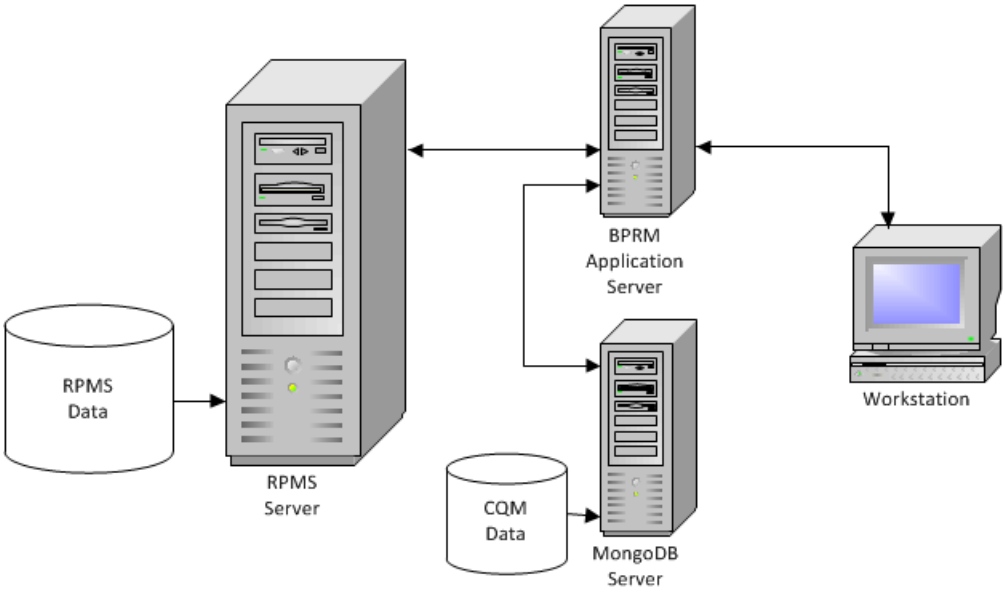

Figure 3-1: Separate BPRM Application Server and MongoDB Database Server – Single RPMS Instance

3.2.2 Separate BPRM Application Server and MongoDB Database Server – Multiple RPMS Instances

In the example shown in Figure 3-2, the RPMS database server contains multiple instances of RPMS. This scenario is not common, but it is used at some larger sites.

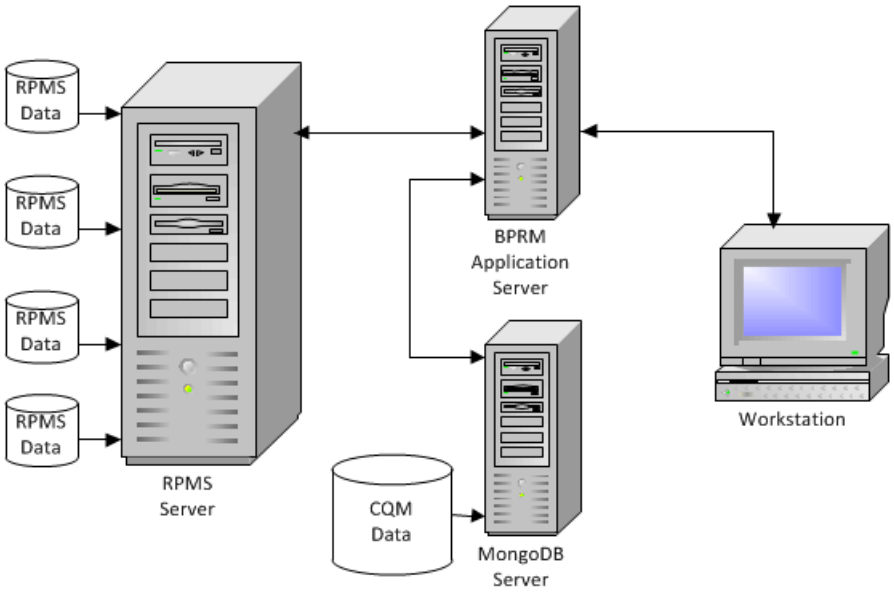

Figure 3-2: Separate BPRM Application Server and MongoDB Database Server – Multiple RPMS Instances

3.2.3 Combined BPRM Application/MongoDB Database Server

In the example shown in Figure 3-3, the MongoDB system has been installed on the same server as the BPRM application. This strategy is not ideal, but it can be used for smaller sites or those with limited server resources.

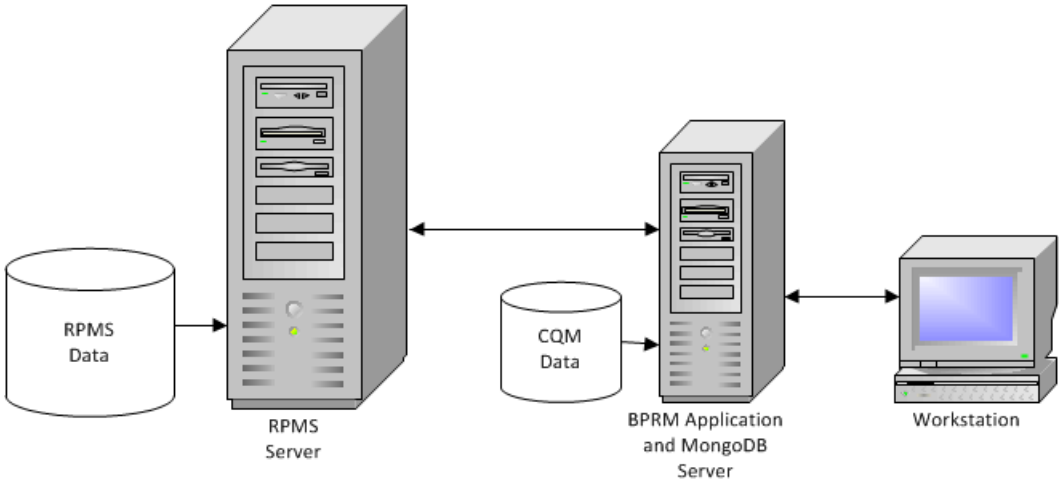

Figure 3-3: Combined BPRM Application/MongoDB Database Server

4.0 Installation Instructions: First-Time Install

BPRM contains components that run on both the RPMS server and the client personal computer. As a result, the installation instructions are separated into these actions:

- Application Server Installation (Section 5.0)
- Database Server Installation (Section 6.0)
- CQM MongoDB Object Database System Installation (Section 7.0)
- Application Installation (Section 8.0)

The application operates in a web-based environment; there is no separate installation necessary on workstations other than the items listed in Section 2.2.5.

4.1 Acquire the SSL Certificate

BPRM utilizes the Secure Sockets Layer (SSL) protocol to ensure secure communications between its components. If your site is not on a secure domain, you must acquire an SSL certificate. If your site is on a secure domain, an SSL certificate is not necessary and you can skip all of this section (4.0), and Sections 5.8 and 5.9.

> **Note:** Since the SSL certificate acquisition may take up to 24 hours, it is recommended that you acquire the SSL certificate before beginning the BPRM installation.

The process for acquiring this certificate for sites on the IHS domain is different than that used by sites that are not on the IHS domain.

4.1.1 SSL Certificate Acquisition – IHS Domain

If your site is on the IHS domain, to acquire your SSL certificate:

1. Click **Start**, **Administrative Tools**, and **Internet Information Services (IIS) Manager**.
2. Click the server name. The **IIS Manager** dialog box (Figure 4-1) displays.

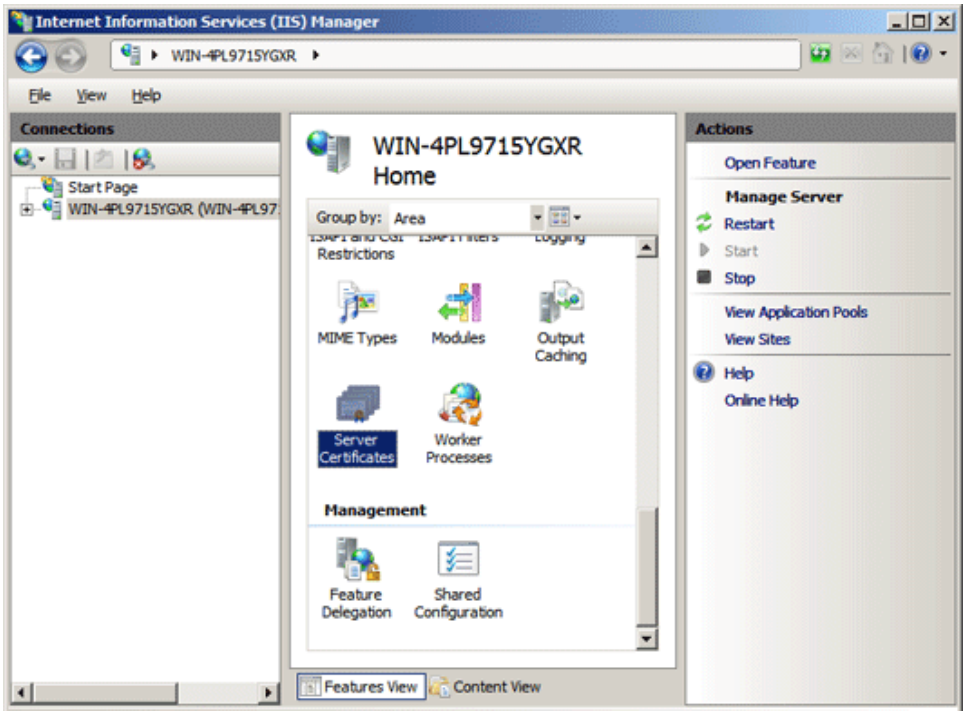

Figure 4-1: **Internet Information Services (IIS) Manager**

3. In the center panel, double-click **Server Certificates** in the **Security** section (near the bottom of the panel).

Figure 4-2: **Internet Information Services (IIS) manager** - Server Certificates

4. In the **Actions** panel (on the right), click **Create Certificate Request**. The **Request Certificate Wizard** (Figure 4-3).

5. In the **Distinguished Name Properties** dialog box, enter the information as follows:

   - **Common Name**. The name through which the certificate will be accessed (usually the fully-qualified domain name, e.g., "NPACSMTBMW.d1.na.ihs.gov").
   - **Organization**. The legally registered name of your organization or company.
   - **Organizational unit**. The name of your department within the organization (e.g., IHS).
   - **City/locality**. The city in which your organization is located.
   - **State/province**. The state in which your organization is located.
   - **Country/region**. The two-character Country code.

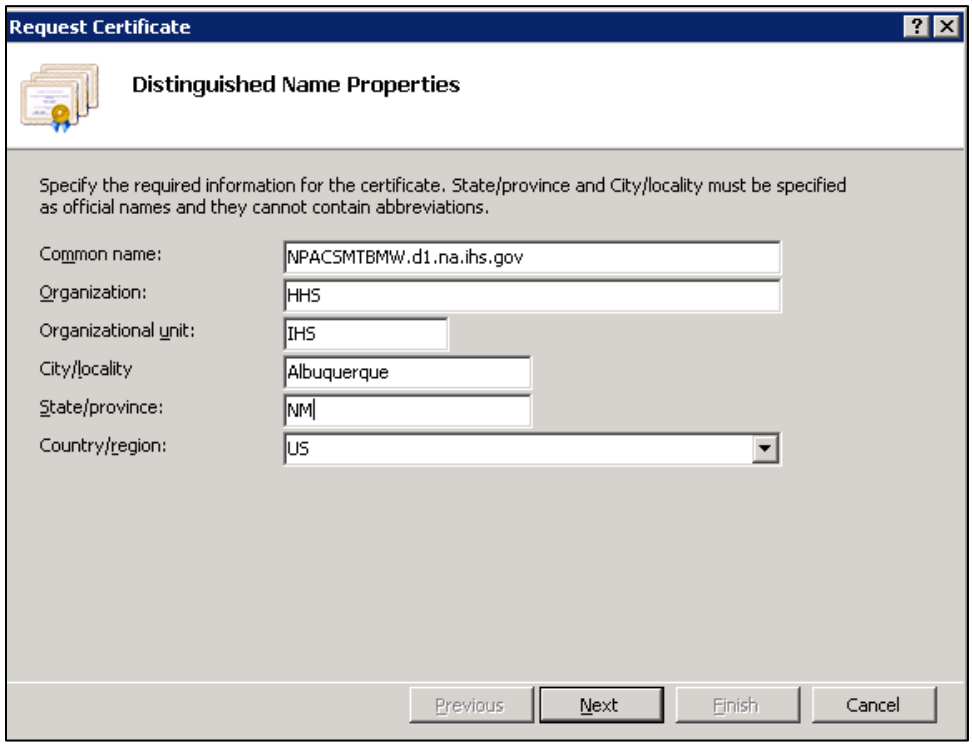

Figure 4-3: **Request Certificate Wizard** - **Distinguished Name Properties**

6. Click **Next**. The **Cryptographic Service Provider Properties** dialog box (Figure 4-4) displays.

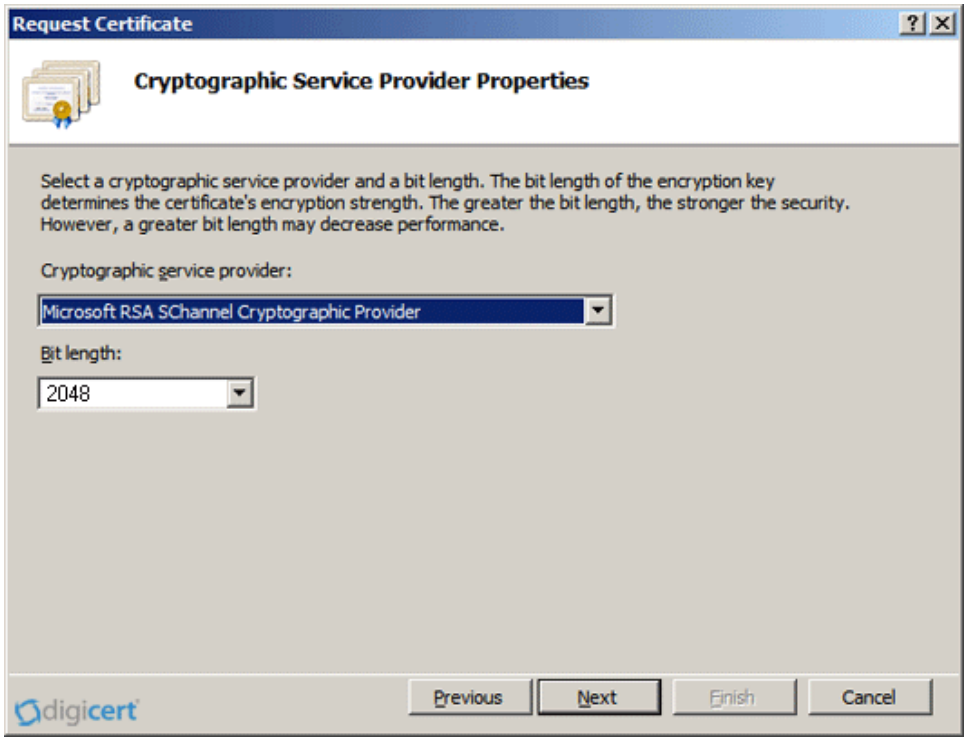

Figure 4-4: **Request Certificate Wizard** - **Cryptographic Service Provider Properties**

7. Leave both settings at their defaults:
   - **Cryptographic service provider**: **Microsoft RSA SChannel Cryptographic Provider**.
   - **Bit length**: **2048**.
8. Click **Next**. The File Name dialog box (Figure 4-5) displays.

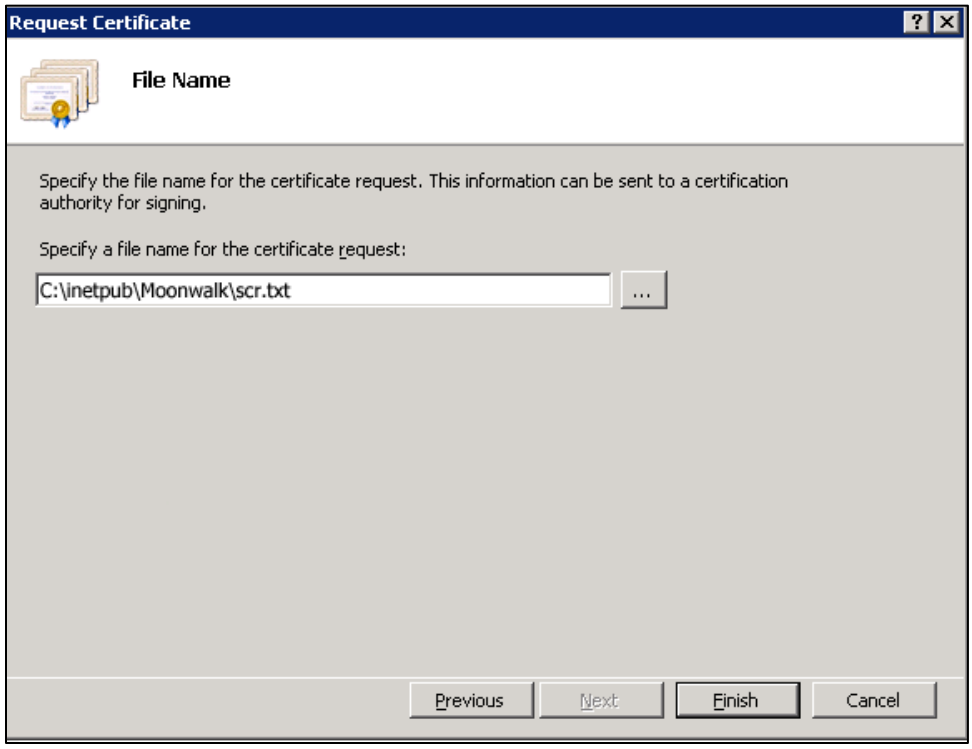

Figure 4-5: **Request Certificate** - **File Name** dialog box

9. Type a path and file name for the certificate request file. Make note of the filename chosen and the save location. You will need to open this file as a text file and copy the entire body of it (including the Begin Certificate Request and End Certificate Request tags) into the online order process when prompted.

10. Click **Finish** to save the SSL certificate request file.

11. E-mail the file to IHSServerCertificateRequest@ihs.gov. Request the SSL Certificate in PFX format for the BPRM Application. A certificate will be issued within 24 hours and e-mailed to the originator of the request. Once the certificate is received, proceed with the BPRM installation as described in Sections 5.0 through 9.0.

4.1.2 SSL Certificate Acquisition – Non-IHS Domain

If the site is not on the IHS domain, the steps for acquiring an SSL certificate will vary, depending on the certificate provider. Several vendors (e.g., GoDaddy, Thawte, and Verisign) provide SSL certificates, and the process for acquiring the certificate is different for each.

Follow the steps provided by the SSL certificate vendor to acquire an SSL certificate, and proceed to the BPRM installation instructions in Sections 5.0 through 9.0.

5.0 BPRM Application Server Installation and Configuration

5.1 Microsoft .NET Framework Verification

As mentioned in Section 2.2.1, Microsoft .NET Framework 4.5 is required on the BPRM application server. To determine if it is already installed:

1. From the Windows **Start** menu, select **Control Panel**.
2. Click **Programs and Features**. A listing similar to that shown in Figure 5-1 displays.

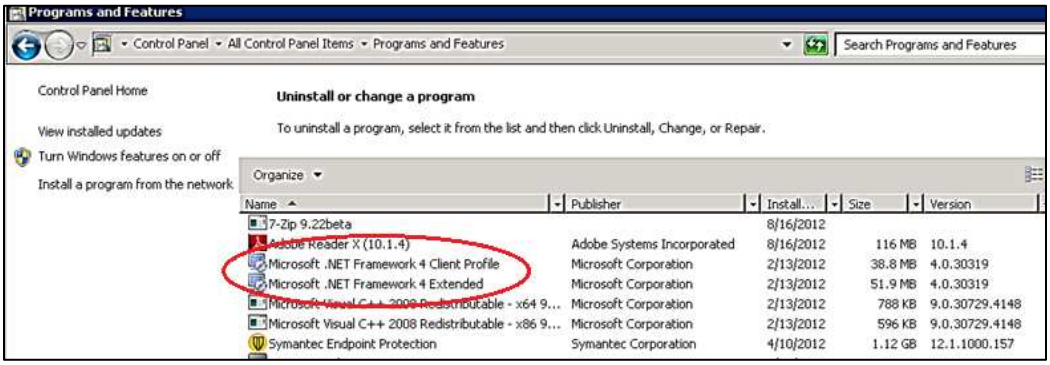

Figure 5-1: **Programs and Features** listing

3. Review the listing, looking for any **Microsoft .NET Framework 4.***x* entries. If none are found, install the .NET Framework 4.5 by following the instructions in Section 5.2. If Microsoft .NET Framework 4.5 is listed, skip to Section 5.3.

> **Note:** There can be more than one version of the .NET Framework on the server at the same time.

5.2 Microsoft .NET Framework 4.5 Installation

To install the .NET Framework:

1. Download .Net Framework 4.5 from the Microsoft download center at: http://www.microsoft.com/en-us/download/details.aspx?id=30653
2. Double-click the downloaded file to run the **.Net Framework 4.5 setup**. The **License Terms** dialog box (Figure 5-2) displays:

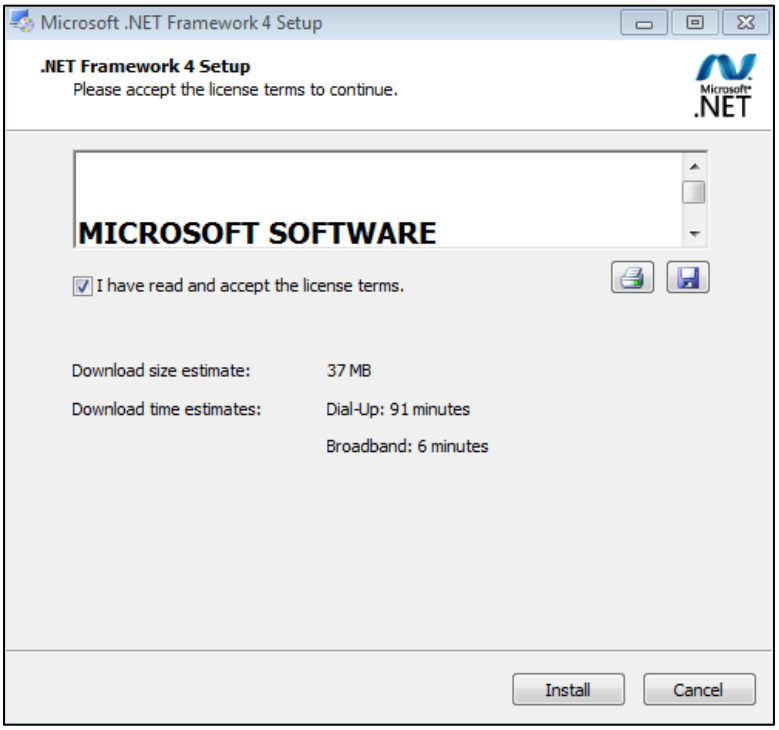

Figure 5-2: .NET Framework **License Terms** dialog box

3. Select **I have read and accept the license terms** to accept the license agreement.
4. Click **Install**. Respond to any prompts presented as the installation proceeds. When completed, the **Installation is Complete** dialog box (Figure 5-3) displays:

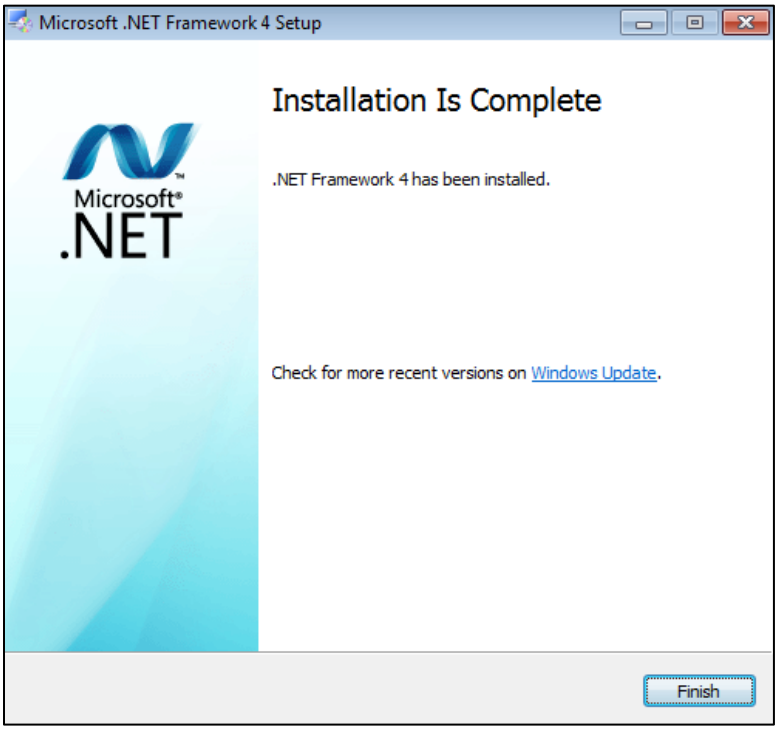

Figure 5-3: .NET Framework **Installation is Complete** dialog box

5. Click **Finish** to complete the installation. If necessary, restart the server.
6. As a final step, run the Windows Updates utility to check for and install any .NET Framework updates that may be available.

> It is very important to check for and install any .NET Framework updates. These updates can be critical to the stability and security of BPRM operation.

5.3 Internet Information Services 7.0 Installation

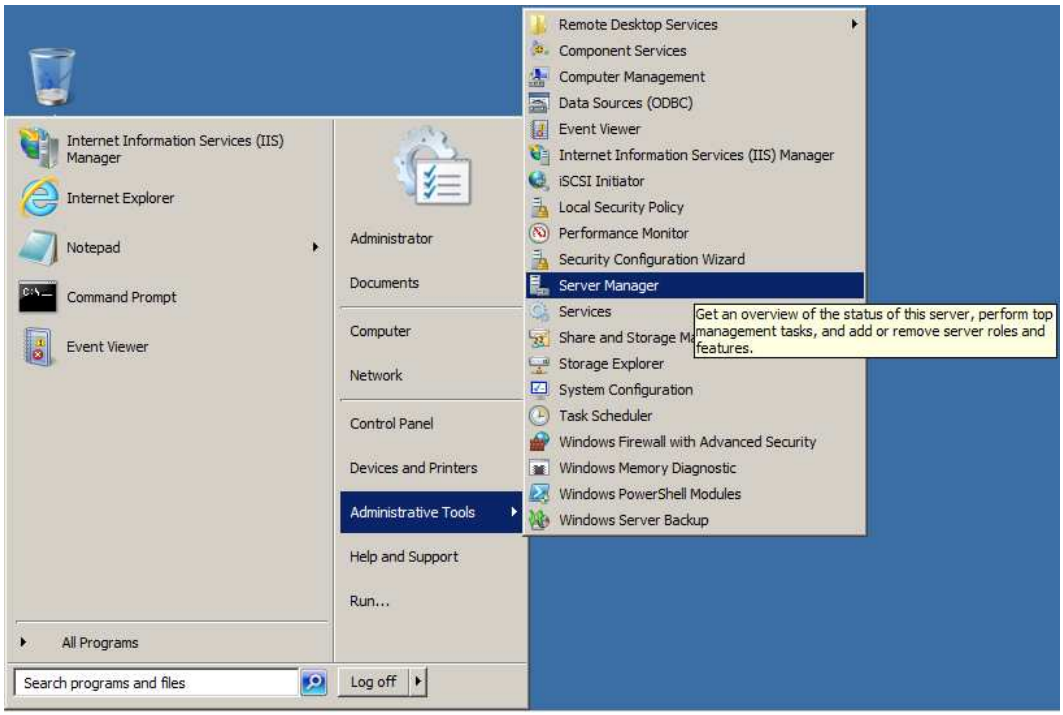

Figure 5-4: Open **Server Manager** applet

To install the Microsoft IIS:

1. From the Windows **Start** menu, select **Administrative Tools**.
2. Select **Server Manager** to display the **Server Manager** dialog box.
3. Click **Roles** in the left pane. The **Roles** pane (Figure 5-5) displays.

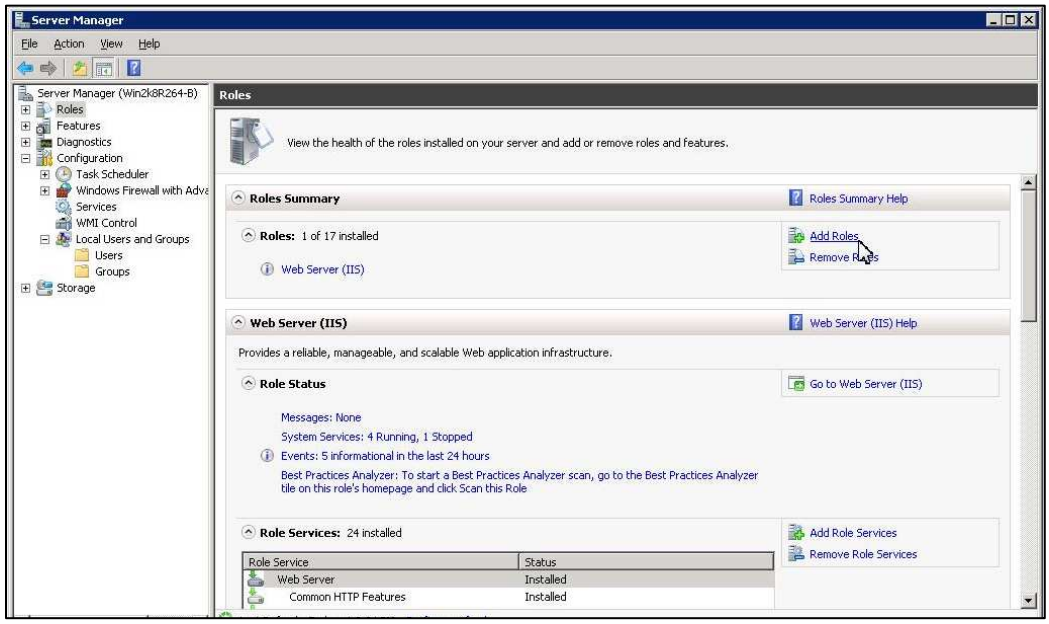

Figure 5-5: **Add Roles**

4. If you already set up a web server, click **Select Roles** and skip to Step 6.

5. If you have not yet set up a web server, click **Add Roles** on the right pane. Review the **Before You Begin** dialog box, and then click **Next**.

6. The **Select Server Roles** dialog box (Figure 5-6) displays:

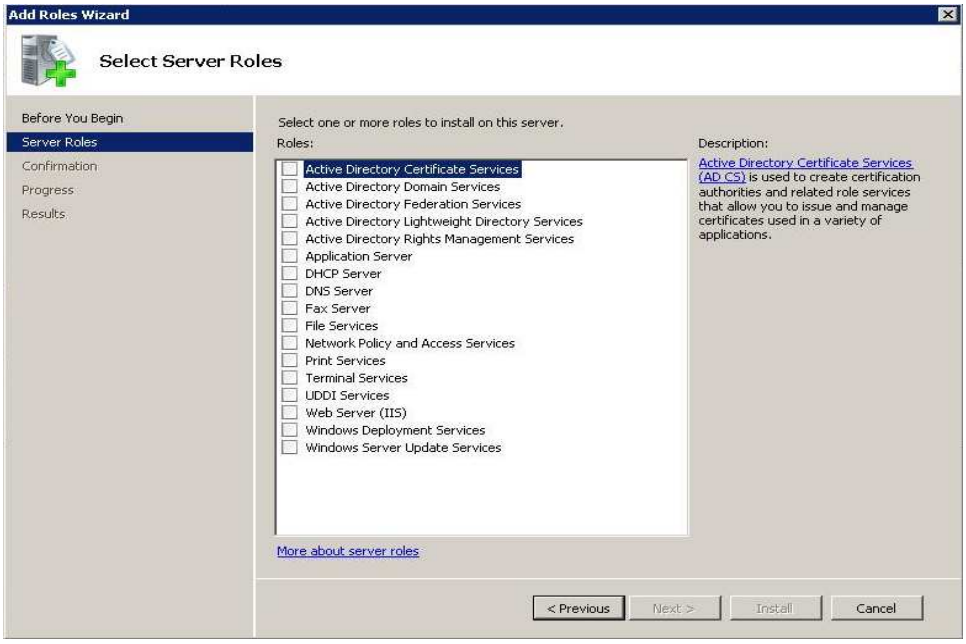

Figure 5-6: **Select Server Roles** dialog box

7. Select **Web Server (IIS)**. The **Add Roles Wizard** (Figure 5-7) displays:

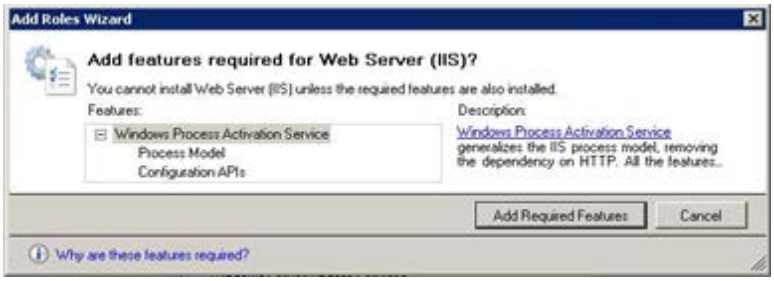

Figure 5-7: **Add Roles Wizard**

8. Click **Add Required Features**. The **Web Server (IIS)** dialog box (Figure 5-8) displays:

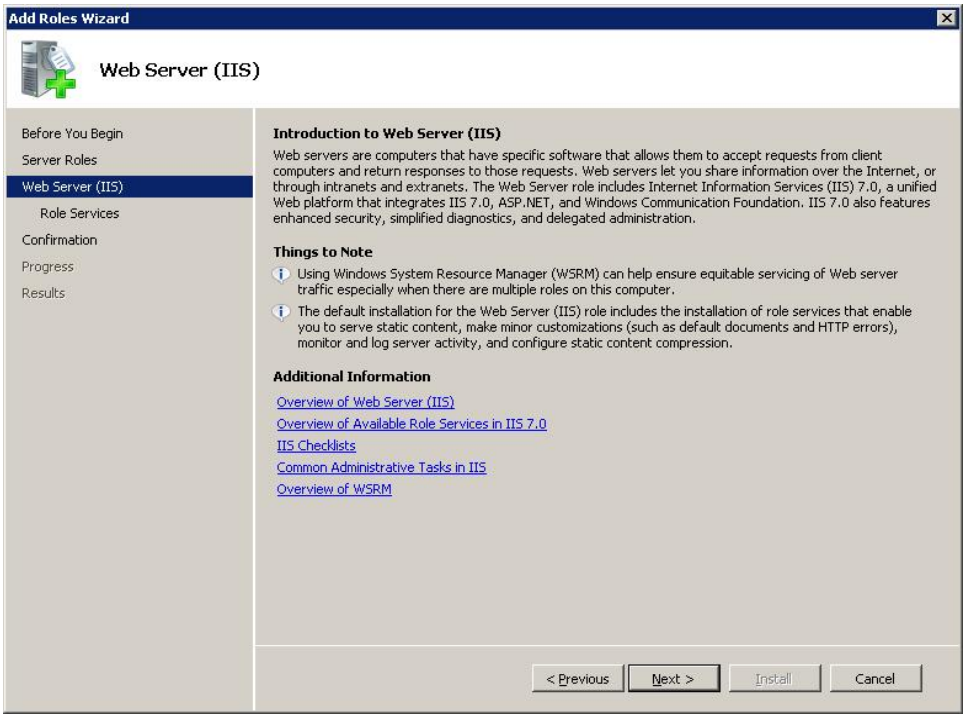

Figure 5-8: **Add Roles Wizard Web Server (IIS)** dialog box

9. Click **Next**. The **Select Role Services** dialog box (Figure 5-9) displays:

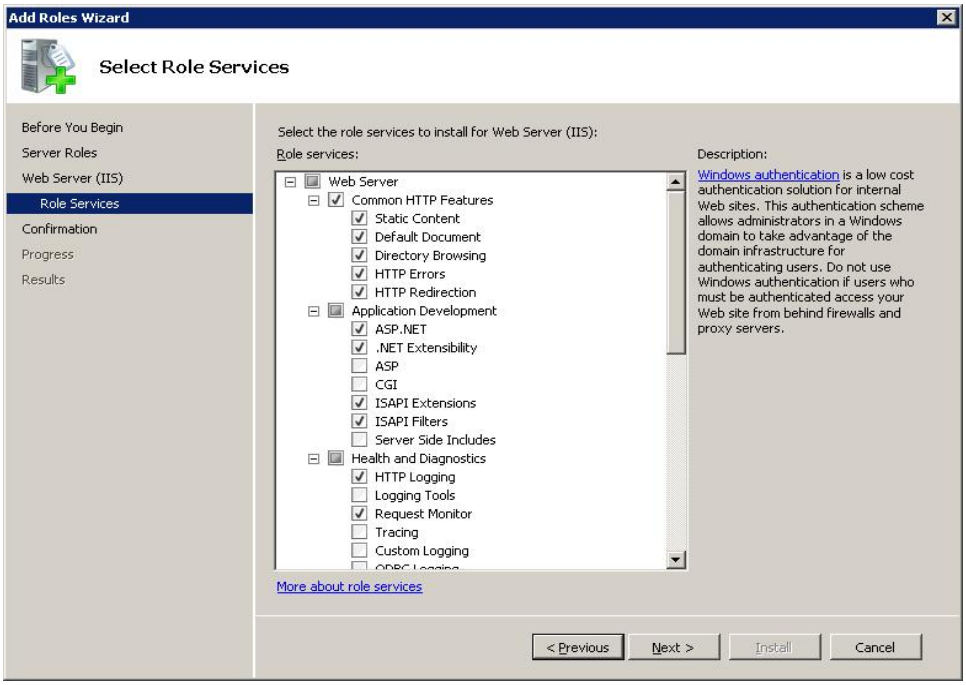

Figure 5-9: **Add Roles Wizard Select Role Services** dialog box

10. Clear any checked boxes and enable the following role services:

- **Common HTTP Features**
  - Static Content
  - Default Document
  - Directory Browsing
  - HTTP Errors
  - HTTP Redirection
- **Application Development**
  - ASP.NET
  - .NET Extensibility
  - ISAPI Extensions
  - ISAPI Filters
- **Health and Diagnostics** (optional)
  - HTTP Logging
  - Request Monitor
- **Security**
  - Request Filtering
- **Performance**
  - Static Content Compression

  - Dynamic Content Compression
- **Management Tools**
  - IIS Management Console
  - IIS 6 Metabase Compatibility

11. Click **Next** to display the **Confirm Installation Selections** dialog box (Figure 5-10).

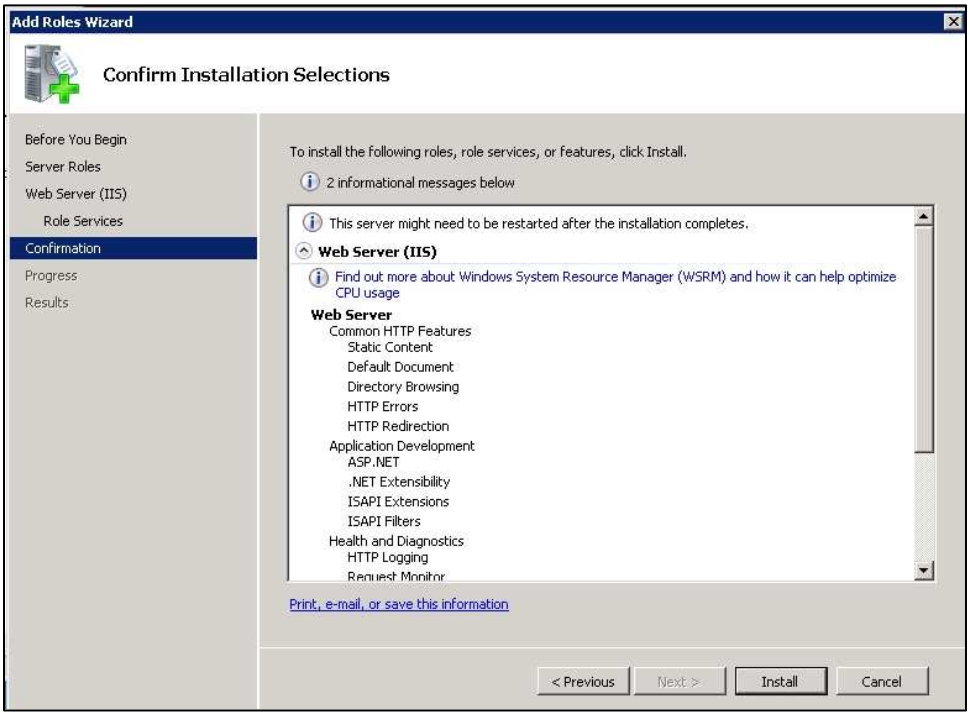

Figure 5-10: **Add Roles Wizard Confirm Installation Selections** dialog box

12. Click **Install**. The **Installation Results** dialog box (Figure 5-11) displays:

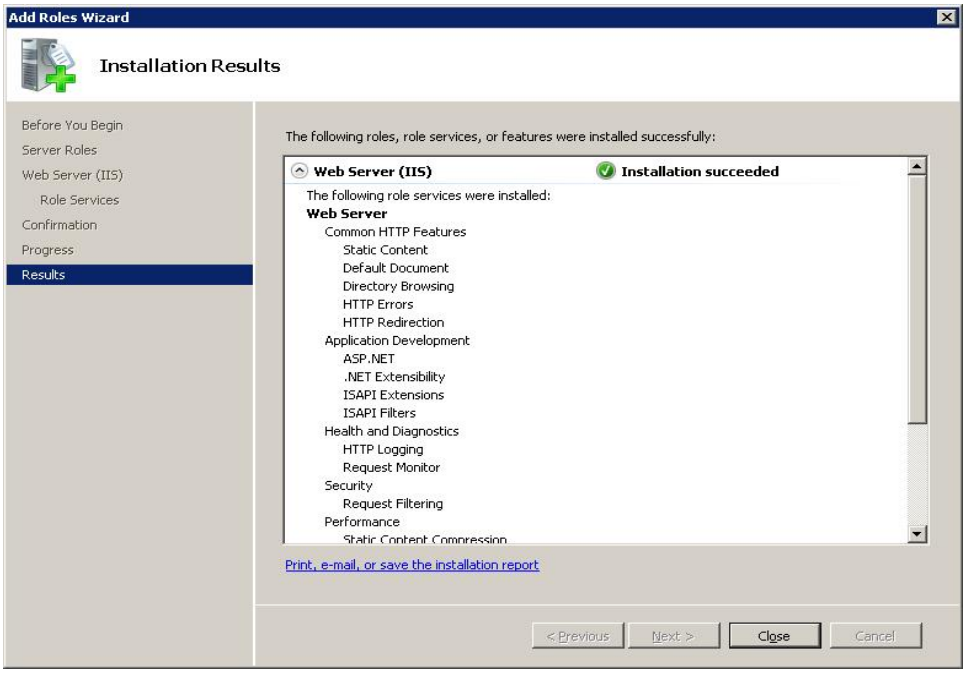

Figure 5-11: **Add Roles Wizard Installation Results** dialog box

13. Click **Close** to complete the installation and end the process.

Note:	Please review the additional steps for disabling the IIS Manager Logging feature in the **Appendix E: Disable Logging in IIS Manager** section.

5.4 Windows Communication Foundation Activation

To activate the Windows Communication Foundation (WCF):

1. From the Windows **Start** menu, select **Administrative Tools**.
2. Select **Server Manager** to display the **Server Manager** dialog box.
3. Click **Features** in the left pane. The **Features** pane (Figure 5-12) displays.

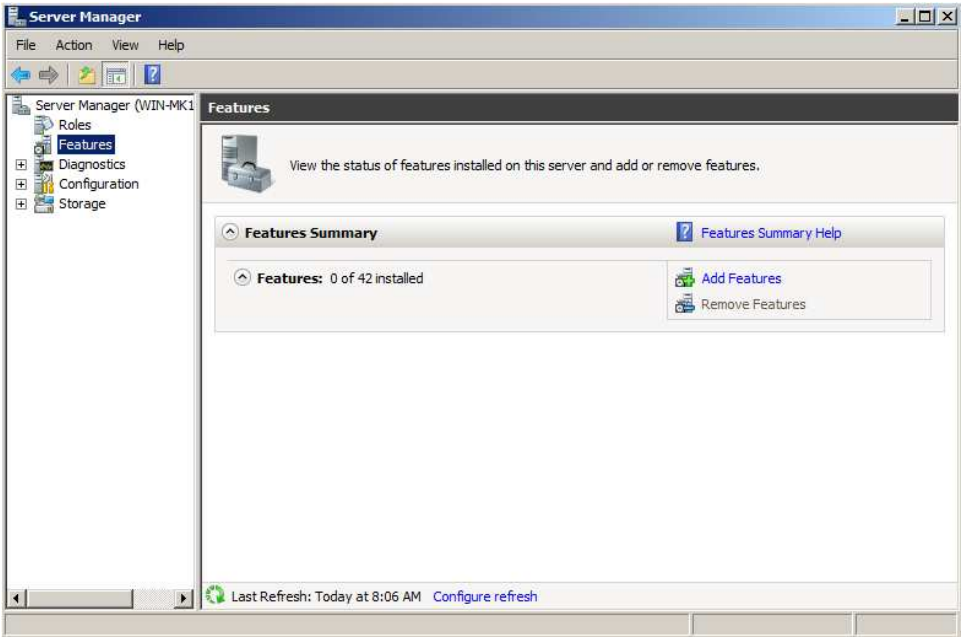

Figure 5-12: **Server Manager Features** applet selected

4. Select **Add Features**. The **Add Features Wizard** (Figure 5-13) displays.

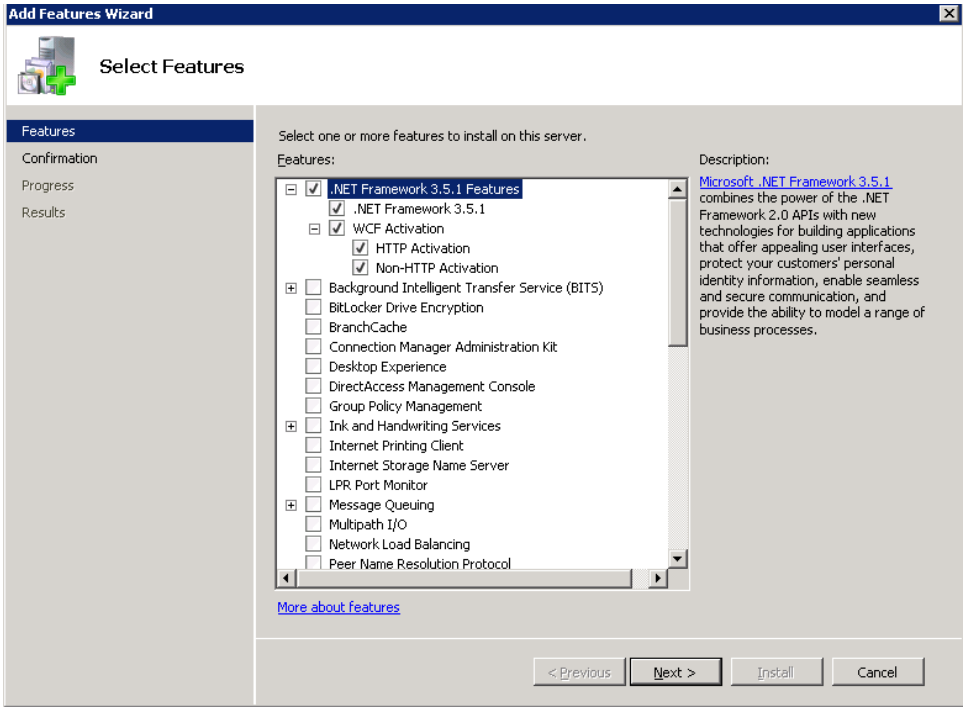

Figure 5-13: **Add Features Wizard** - **Select Feature**s dialog box

5. Select the **.NET Framework 3.*x* Features**, including the WFC Activation options:

> **Note:** The example in Figure 5-13 shows .NET Framework 3.0. You may see a different .NET Framework version on the server.

6. Click **Next**. The **Confirm Installation Selections** dialog box (Figure 5-14) displays.

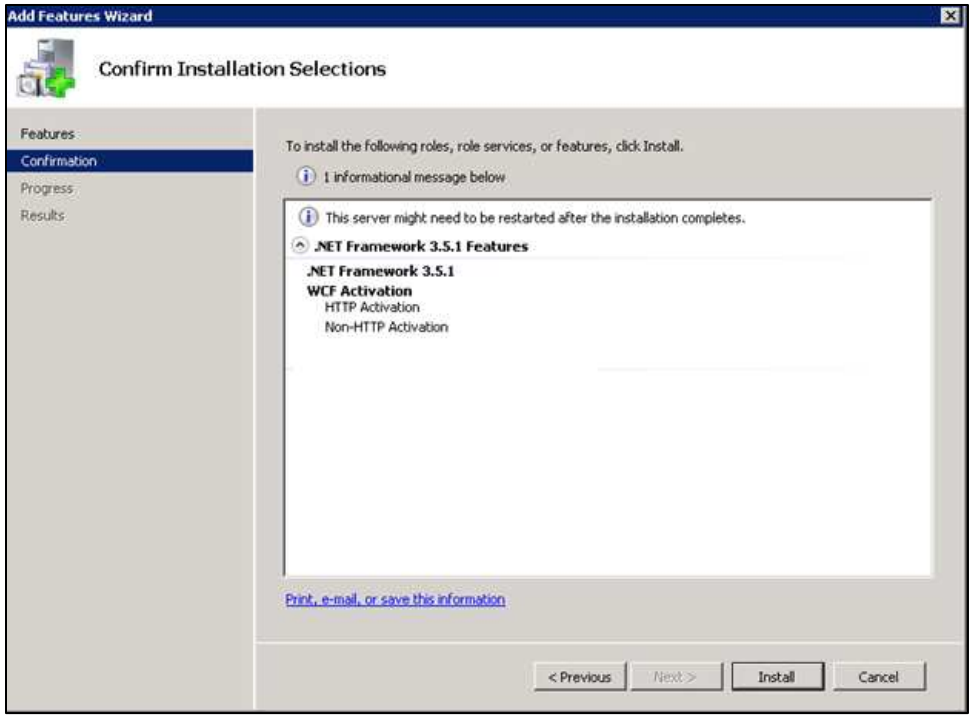

Figure 5-14: **Add Features Wizard** - **Confirm Installation Selections** dialog box

7. Click **Install** to complete the process.

8. Click **Next** to view the **Installation Results** (Figure 5-15).

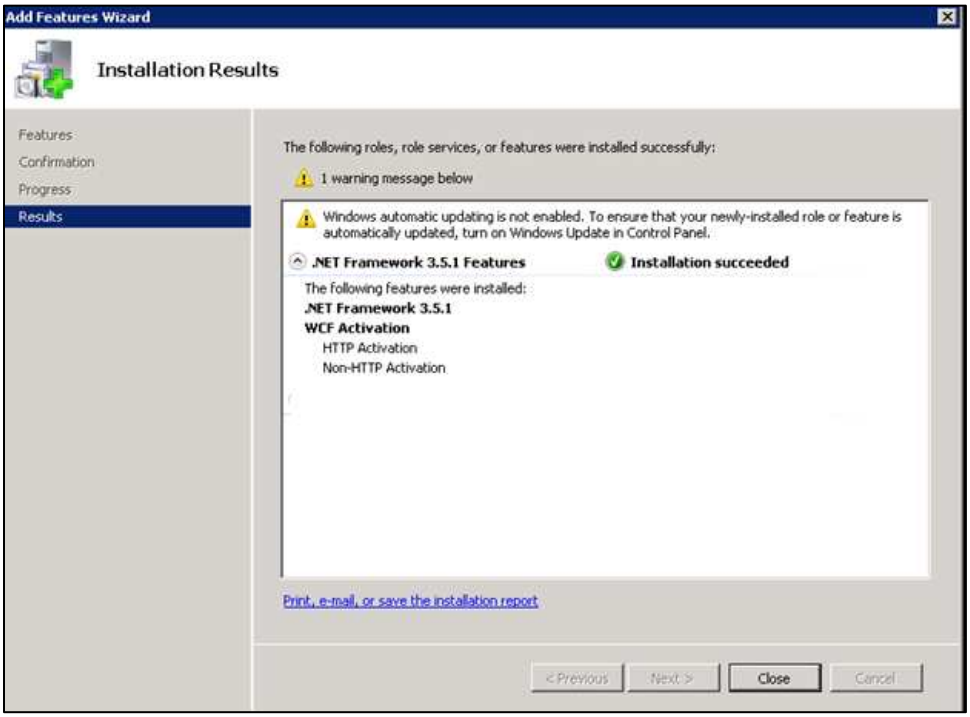

Figure 5-15: **Add Features Wizard** - **WCF Installation results**

9. Click **Close** to complete the **WCF installation**.

5.5 Adding MIME Types

To add MIME types:

1. From the Windows **Start** menu, select **Administrative Tools**.

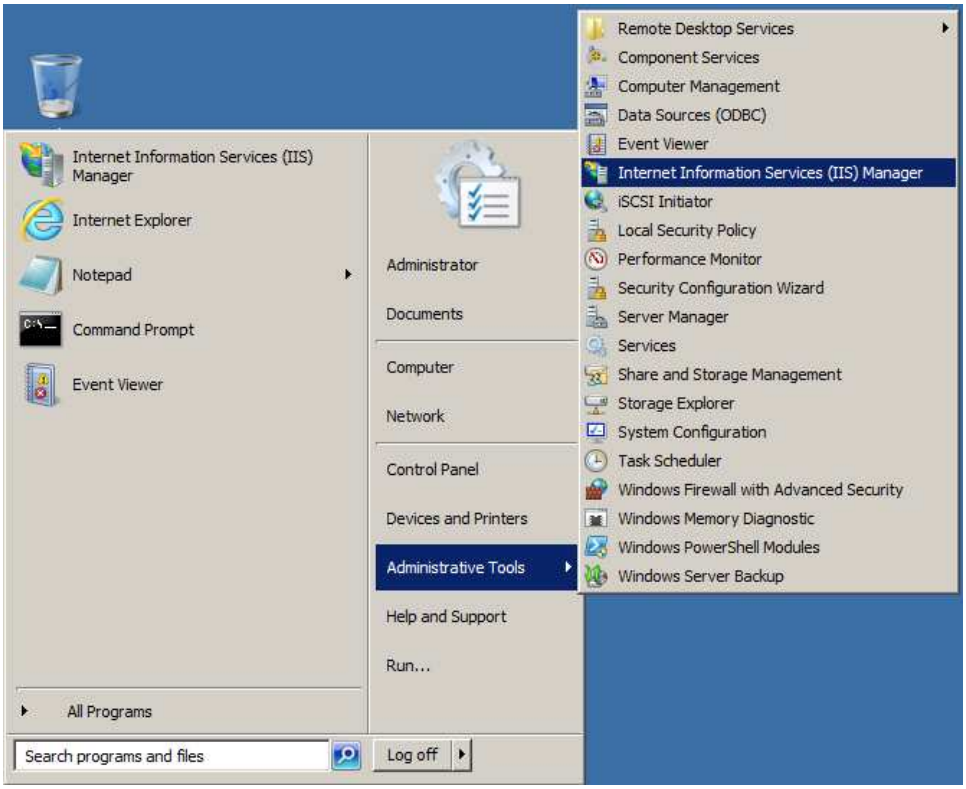

Figure 5-16: Opening **Internet Information Services (IIS) Manager**

2. Select **Internet Information Services (IIS) Manager** to display the IIS Management Console (Figure 5-17).

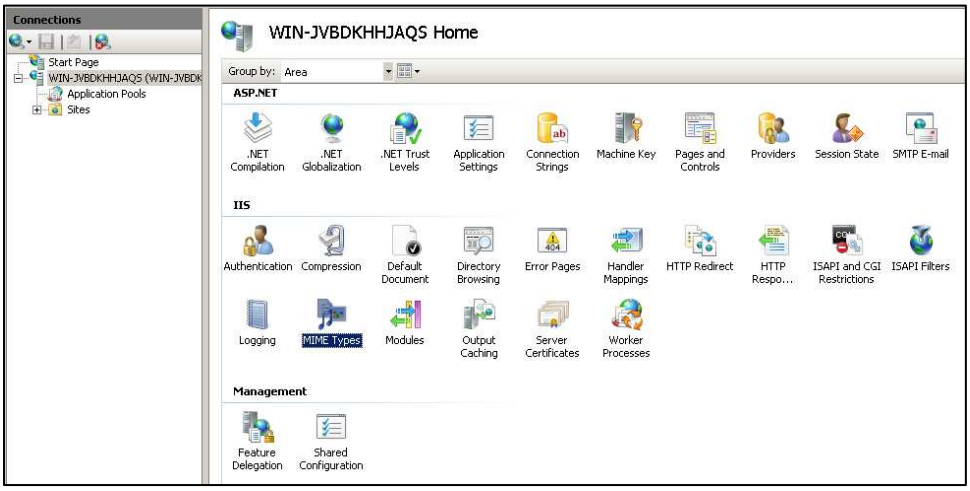

Figure 5-17: **IIS Management** Console

3. Select the application server in the left pane.

4. Double-click **MIME Types** to display the **MIME Types** dialog box Figure 5-18.

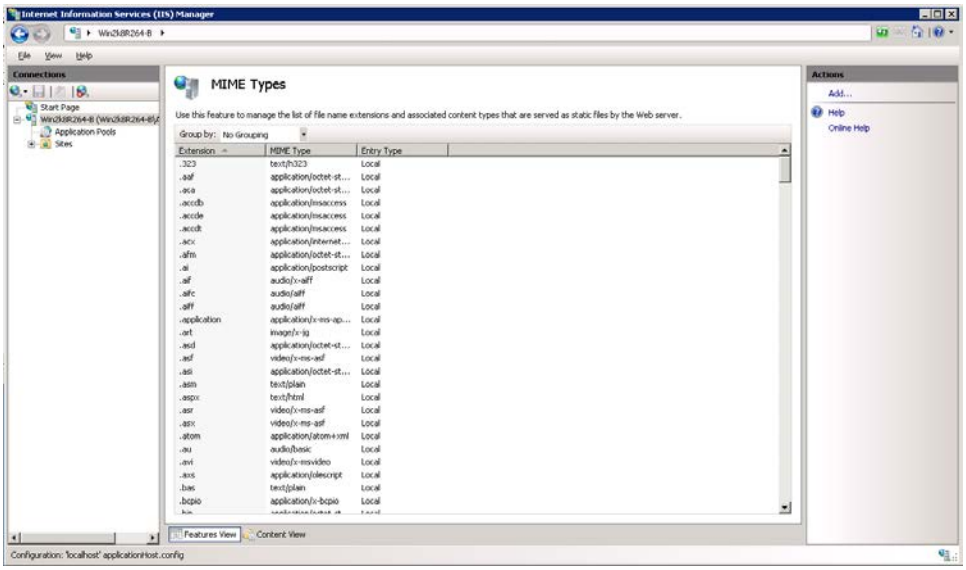

Figure 5-18: **MIME Types** window

5. Click **Add** in the **Actions** pane. The **Add MIME Type** dialog box (Figure 5-19) displays:

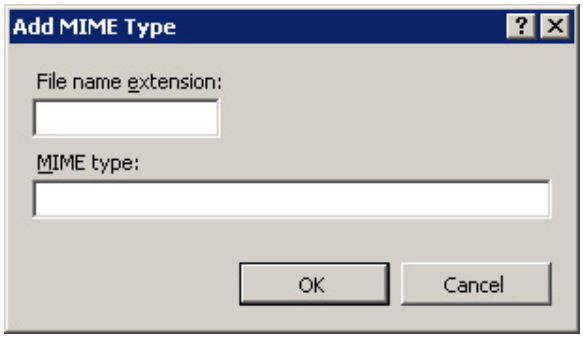

Figure 5-19: Blank **Add MIME Type** dialog box

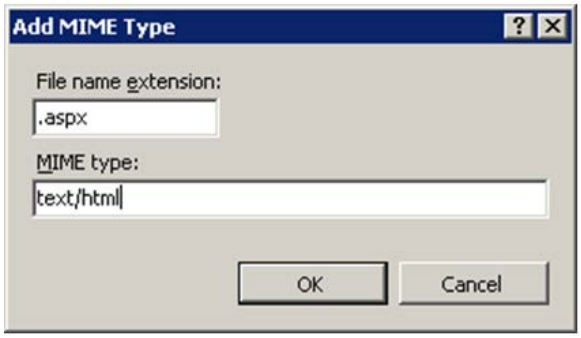

Figure 5-20: **Add MIME Type** .aspx Extension

6. Type **.aspx** in the **File name extension** field.
7. Type **text/html** in the **MIME type** field.
8. Click **OK**.
9. In the **MIME Types** dialog box (Figure 5-18), click **Add** in the **Actions** pane on the right of the screen.

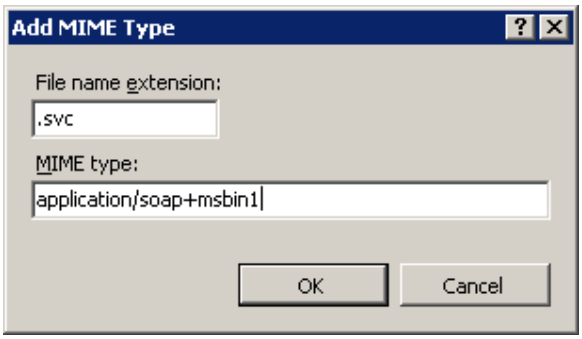

Figure 5-21: **Add MIME Type** .svc Extension

10. Type**.svc** in the **File name extension** field.
11. Type **application/soap+msbin1** in the **MIME type** field.
12. Click **OK**.
13. Click the back arrow in the upper left corner of the IIS Management Console (Figure 5-18) to return to the **IIS Manager Start** window.

5.6 HTTP Compression Configuration

To configure HTTP compression:

1. Using **Windows Explorer**, browse to **C:\Windows\System32\inetsrv\config** as shown in Figure 5-22.

Note:	This folder is typically hidden; you may need to manually type the folder path in the Windows Explorer address bar.

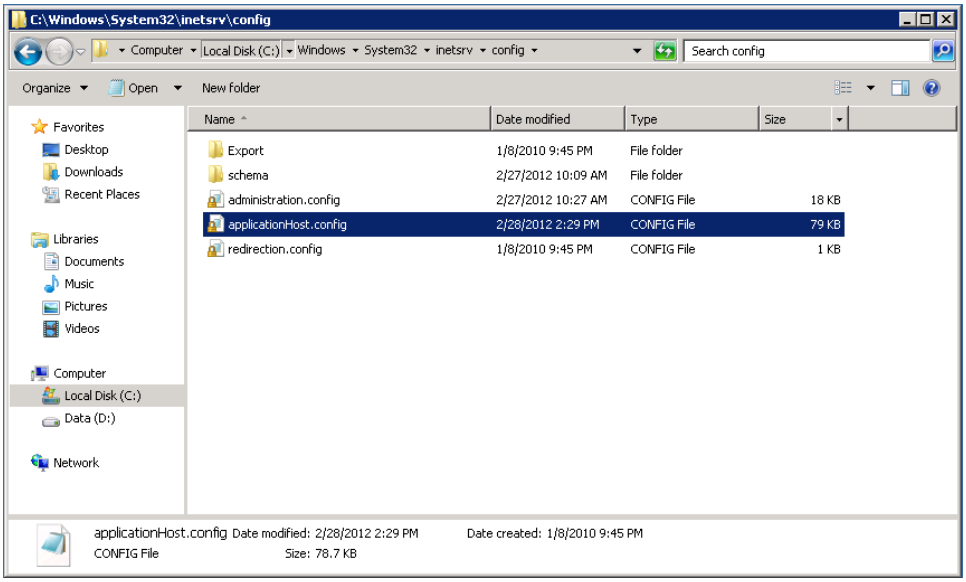

Figure 5-22: Location of **applicationHost.config** file

2. Open the **applicationHost.config** file with a text editor such as Notepad and find the **httpCompression** tag. Figure 5-23 shows a typical applicationHost.config file after scrolling down to the **httpCompression** tag.

> **Note**: The statements following the tag in the file on the system might not match those in this example.

```
<httpCompression directory=
"%SystemDrive%\inetpub\temp\IIS Temporary Compressed Files">
<scheme name="gzip" dll="%Windir%\system32\inetsrv\gzip.dll" />
            <dynamicTypes>
                <add mimeType="text/*" enabled="true" />
                <add mimeType="message/*" enabled="true" />
                <add mimeType="application/x-javascript" enabled="true" />
                <add mimeType="*/*" enabled="false" />
            </dynamicTypes>
            <staticTypes>
                <add mimeType="text/*" enabled="true" />
                <add mimeType="message/*" enabled="true" />
                <add mimeType="application/javascript" enabled="true" />
                <add mimeType="*/*" enabled="false" />
            </staticTypes>
        </httpCompression>
```

Figure 5-23: Section of a typical applicationHost.config file

3. If not already present in your applicationHost.config file, ensure the dynamic compression level and dynamic type statements are added to the file as shown in Figure 5-24:

```
<httpCompression directory=
   "%SystemDrive%\inetpub\temp\IIS Temporary Compressed Files">
```

```
<scheme name="gzip" dll="%Windir%\system32\inetsrv\gzip.dll"
dynamicCompressionLevel="5" />
            <dynamicTypes>
                <add mimeType="text/*" enabled="true" />
                <add mimeType="message/*" enabled="true" />
                <add mimeType="application/x-javascript" enabled="true" />
                <add mimeType="application/soap+msbin1" enabled="true" />
                <add mimeType="*/*" enabled="false" />
            </dynamicTypes>
            <staticTypes>
                <add mimeType="text/*" enabled="true" />
                <add mimeType="message/*" enabled="true" />
                <add mimeType="application/javascript" enabled="true" />
                <add mimeType="*/*" enabled="false" />
            </staticTypes>
        </httpCompression>
```

Figure 5-24: Typical applicationHost.config file after changes

4. When finished editing the applicationHost.config file, save it and exit from the text editor.

5.7 Moonwalk Web Site Setup

5.7.1 Add the Application Pool

To add the Application Pool:

1. Return to the **IIS Manager** opened in Section 5.5 and browse to **Application Pools** in the tree structure below your IIS node as shown in Figure 5-25.

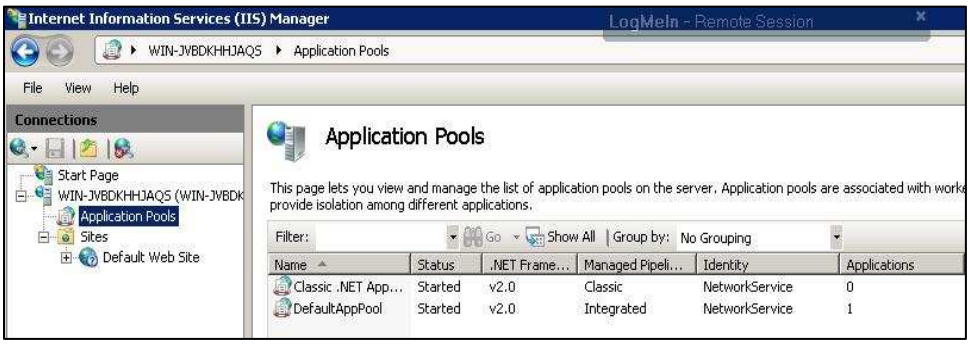

Figure 5-25: **IIS Manager** browsed to **Application Pools**

2. Right-click **Application Pools** and select **Add Application Pool**. The **Add Application Pool** dialog box (Figure 5-26) displays.

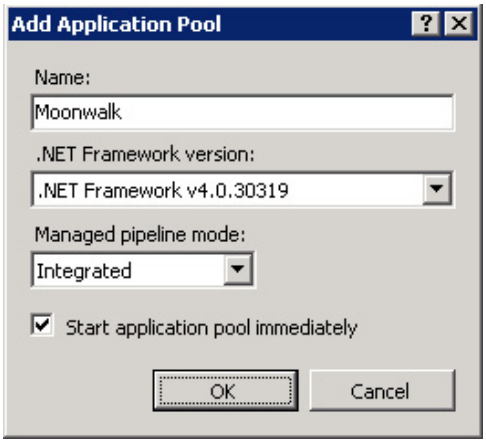

Figure 5-26: **Add Application Pool** dialog box

3. In the **Name** field, type the name of the application pool (**Moonwalk**).
4. In the .NET Framework version field, select version 4.x of the .NET Framework.
5. Click **OK**.
6. Right-click the newly-created application pool in **IIS Manager** and click **Advanced Settings**. A dialog box similar to Figure 5-27 displays:

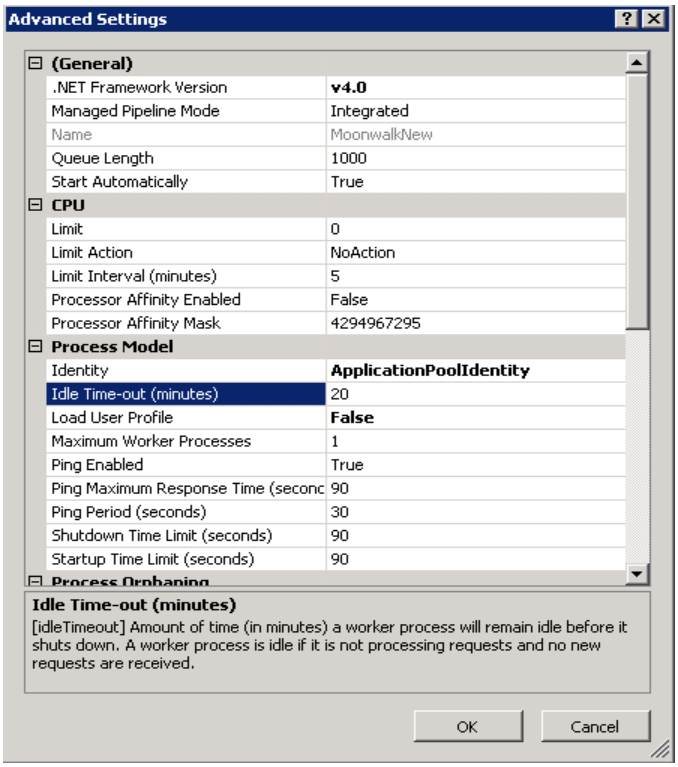

Figure 5-27: Application Pool **Advanced Settings**

7. Change the **Idle Time-out** value to **120** minutes.
8. Click **OK** to save the changes and close the dialog box.

5.7.2 Create a Moonwalk Folder

To aid in setting up the Moonwalk web site, create a C:\inetpub\Moonwalk folder:

1. Using **Windows Explorer**, navigate to **C:\inetpub** on your Windows application server.
2. Click **Organize**, and then select **New Folder**. (Alternatively, click **New Folder** in the Windows Explorer toolbar if it is present.)
3. Type **Moonwalk**, and then press **Enter** to create the C:\inetpub\Moonwalk folder.

5.7.3 Add the New Site

To add the new web site:

1. Right-click **Sites** in the **Connections** pane of the IIS Manager and select **Add Web Site**. The **Add Web Site** dialog box (Figure 5-28) displays.

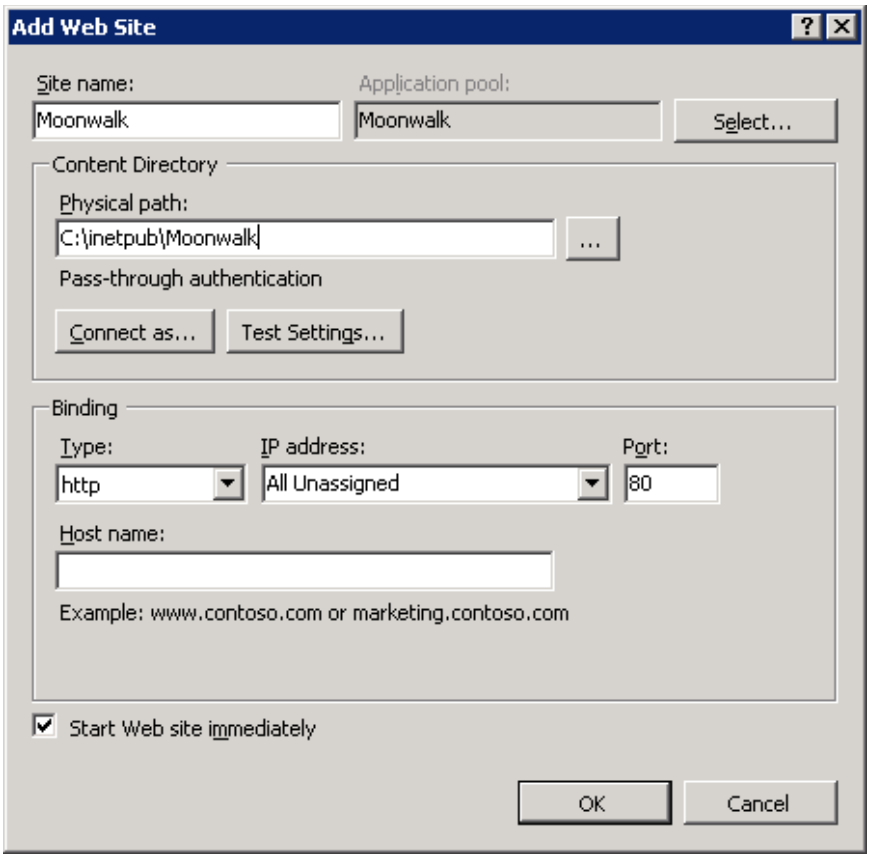

Figure 5-28: **Add Web Site** dialog box

2. In the **Site name** field, type **Moonwalk**.
3. Click **Select** and select the Moonwalk application pool created in the previous steps.
4. In the **Physical Path** field, browse to the C:\inetpub\Moonwalk folder created in Section 5.7.2. Be aware that the location will be different if the folder was created on a different drive.
5. Set the port number in the **Binding** section to the range of 80 through 83 unless you have a specific reason not to do so. If you use a port other than the default Port 80, ensure that port is open on your firewall.
6. Click **OK** to save the changes and close the **Add Web Site** dialog box.

5.8 Install the SSL Certificate

To install the SSL server certificate acquired in Section 4.1:

1. From the Windows **Start** menu, select **Administrative Tools**.
2. Select **Internet Information Services (IIS) Manager**.

Figure 5-29: **Internet Information Services (IIS) Manager**

3. Click the server name in the left panel.

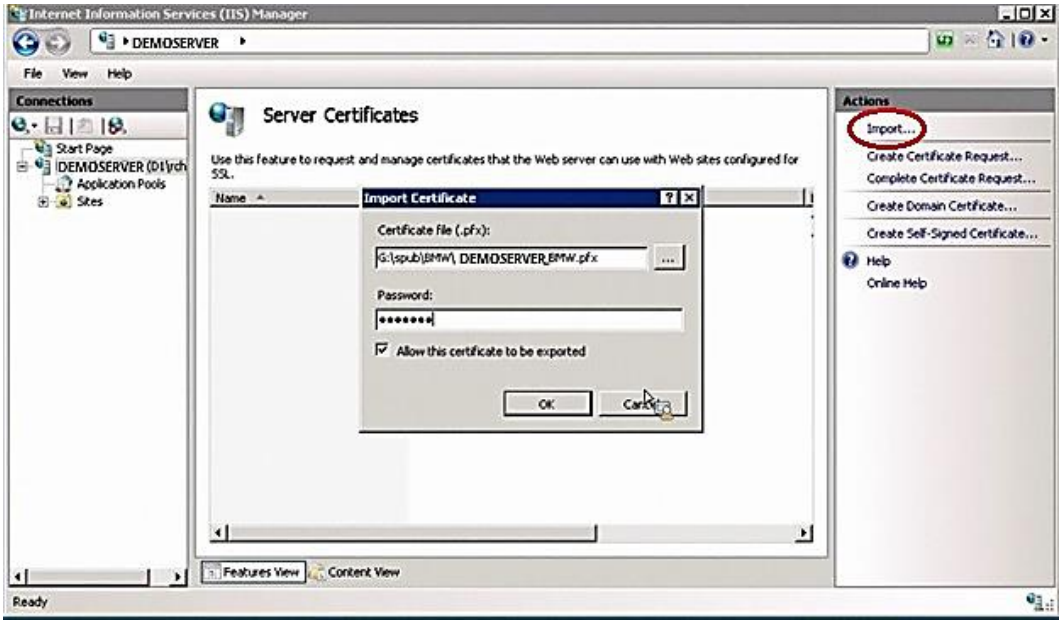

Figure 5-30: **Import Server Certificate** dialog box

4. Double-click **Server Certificates** in the **Security** section (near the bottom of the panel).

5. In the **Actions** panel (on the right), click **Import**. The **Import Certificate** dialog box displays.

6. Click the ellipses button (**…**) to browse to the location where the server certificate file acquired in Section 4.1 was saved.

7. In the **Password** field, type the password provided by the IHS Server Certificate Request team (or in the case of non-tribal sites, by the issuing authority from which the server certificate was acquired). If the server certificate was acquired from another issuing authority, you may or may not have received a password. Enter the password if applicable; otherwise leave this field blank.

8. Click **OK** to complete the import procedure.

5.9 Configure the SSL Certificate

> **Note:** If you configure the SSL certificate *after* installing the BPRM application, you must uninstall BPRM before configuring the SSL certificate. See Section 9.2 for information about uninstalling BPRM.

To configure the SSL certificate:

1. In the **IIS Manager** window, select the name of the server where the certificate was installed.
2. Under **Sites**, select the site to be secured with the SSL certificate.
3. In the **Actions** pane, click **Bindings**.
4. Click **Add**.
5. In **Add Site Binding**:
   a. For **Type**, select **https**.
   b. For **IP address**, select **All Unassigned**, or the IP address of the site.
   c. For **Port**, specify a port number ranging from **440** through **443**.

> **Note:** When installing SSL with https (port 440 through 443), first remove any previous site bindings for http (port 80 through 83). The **Site Bindings** dialog box shown in will indicate whether there any http site bindings and allow their removal.

   d. Select the **SSL certificate** just installed. Click **OK**.

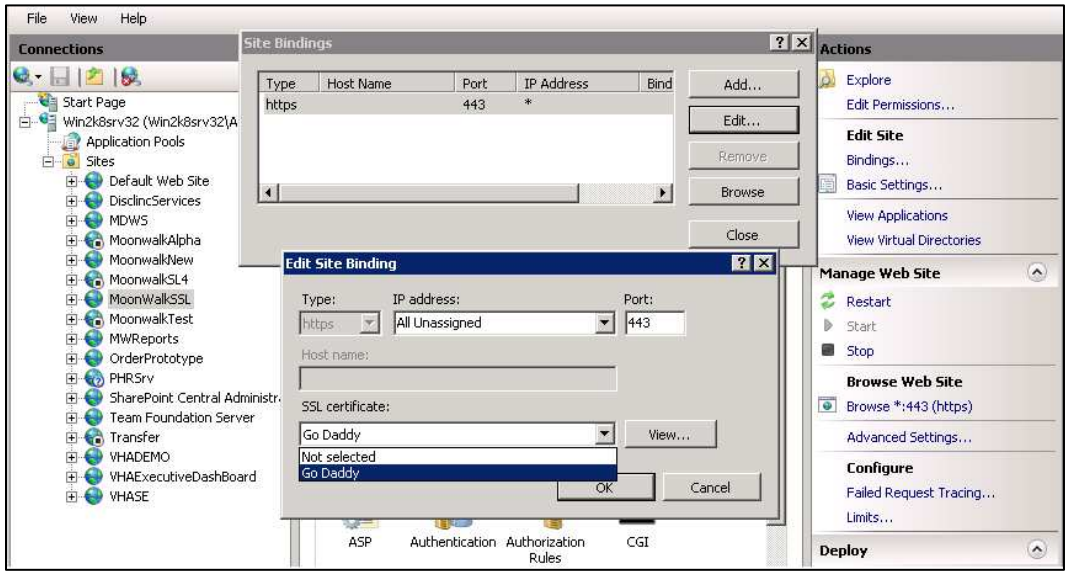

Figure 5-31: **Edit Site Binding** dialog box

6. Click **Close**.
7. Close **Internet Information Services (IIS) Manager**.

The SSL Certificate is now configured. Visit the website via an HTTPS connection, using the domain name, not the IP address, to verify the installation.

6.0 BPRM Database Server Installation and Configuration

This section outlines the steps essential for setting up and configuring an IHS RPMS database server in order for the BPRM application to be executed against the RPMS database. It also provides steps to set up such an environment.

6.1 Assumptions

This section assumes the following:

- Ensemble/Cache server (running one of the supported versions as described in Section 2.4.1) has already been set up.
- An RPMS database is already set up on the Ensemble/Cache server.
- The person performing the installation and configuration has the appropriate rights to mount databases, create a namespace, and edit namespace settings for the RPMS database.
- The BMW CACHE.DAT file provided by OIT SQA as described in the *BMW CACHE.DAT Installation Guide and Release Notes* document is installed.

6.2 Importing a New BPRM XML File

A separate XML file is included with the release; follow the steps in Sections 6.2.1 through 6.2.2 to import a new BPRM XML file.

6.2.1 Disable Read Only

In order to import the **bprm0300.xml** file, you must set the BMW database to allow write access. If the database is set to **Read Only**:

1. Browse to the **Local Databases** window of the Ensemble Management Portal following this path:

   Home > System Administration > Configuration > System Configuration > Local Databases.

2. Click **Edit** in the row corresponding to the **BMW** database.
3. In the window displayed, set the **Read Only?** field to **No**.

Once the patch is installed, you can re-enable Read Only mode by repeating these steps and setting the **Read Only?** field to **Yes**.

6.2.2 Import the BPRM XML File

To import the **bprm0300.xml** file:

1. From the **Ensemble/Cache System Management Portal Home** window, click **System Explorer**, and then click **Classes**. The Classes dialog box (Figure 6-1) displays.

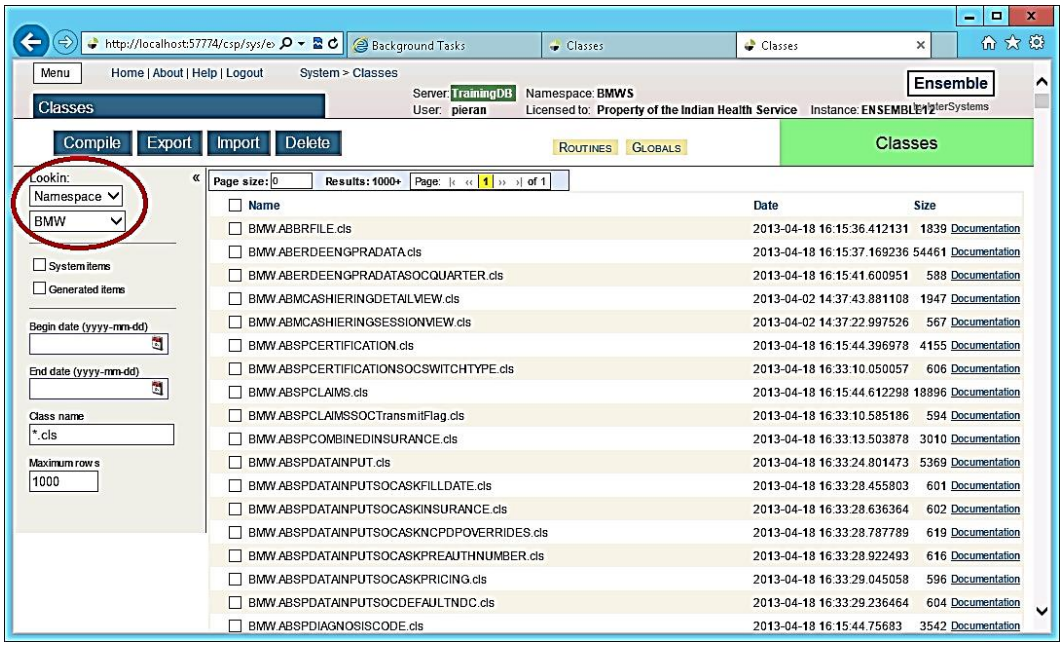

Figure 6-1: **Classes** window

2. Select the **BMW** namespace in the **LookIn:** pane on the left side of the dialog box.

3. Click **Import**. The **Import Classes** dialog box (Figure 6-2) displays.

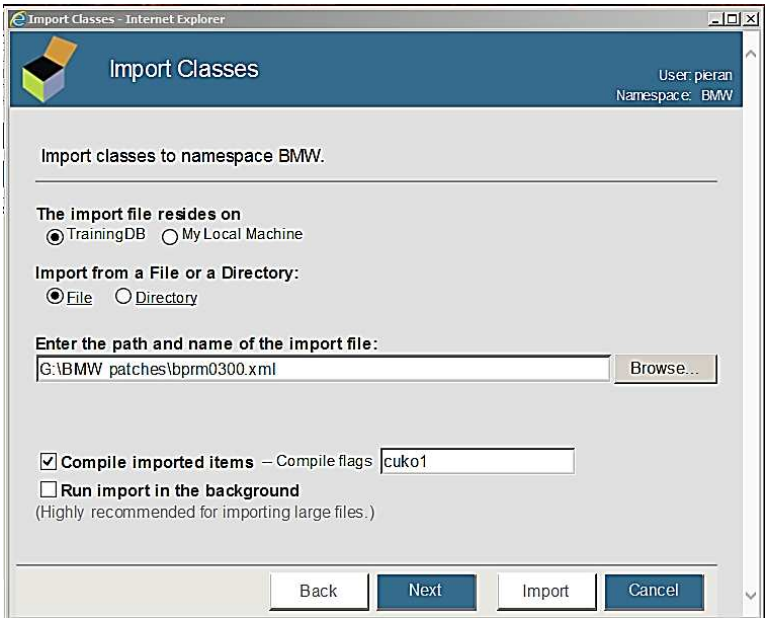

Figure 6-2: **Import Classes** dialog box

4. Click **Browse** and navigate to the **bprm0300.xml** file in the folder where it was saved as described in Section 3.0.

5. Select the **bprm0300.xml** file and click **Next**.

6. A listing (Figure 6-3) displays showing the contents of the XML file.

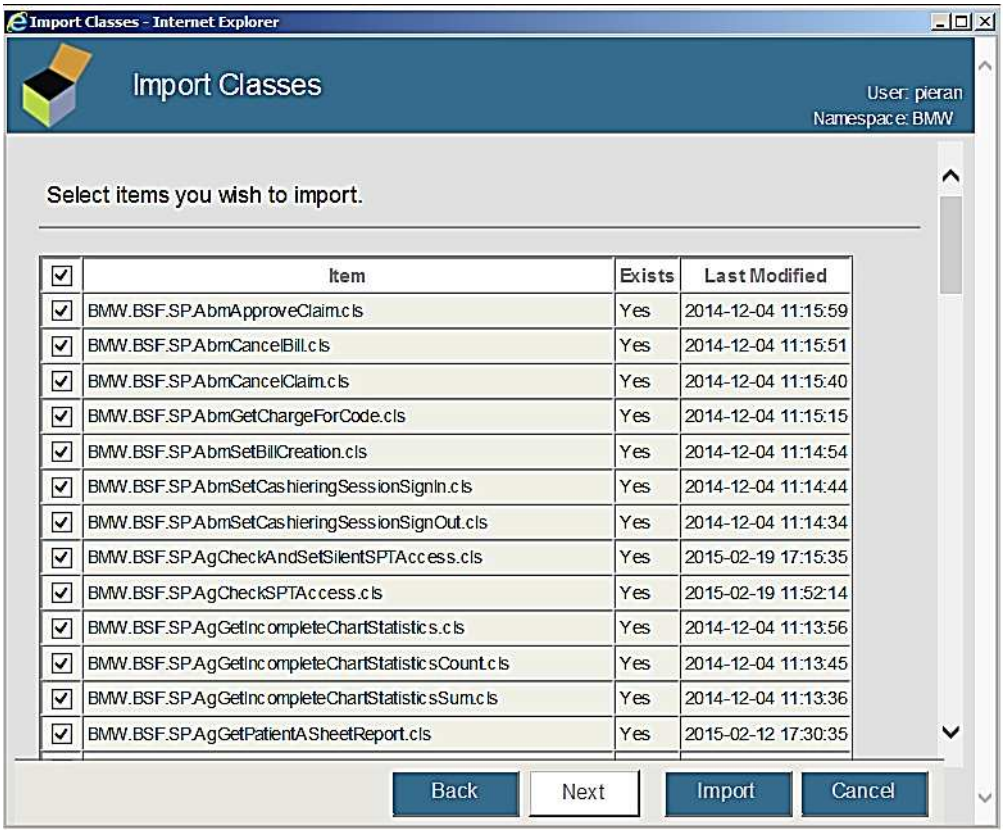

Figure 6-3: **Import Classes** window - Content listing

7. Click **Import**. After a few moments of processing, a listing of the imported classes (Figure 6-4) displays.

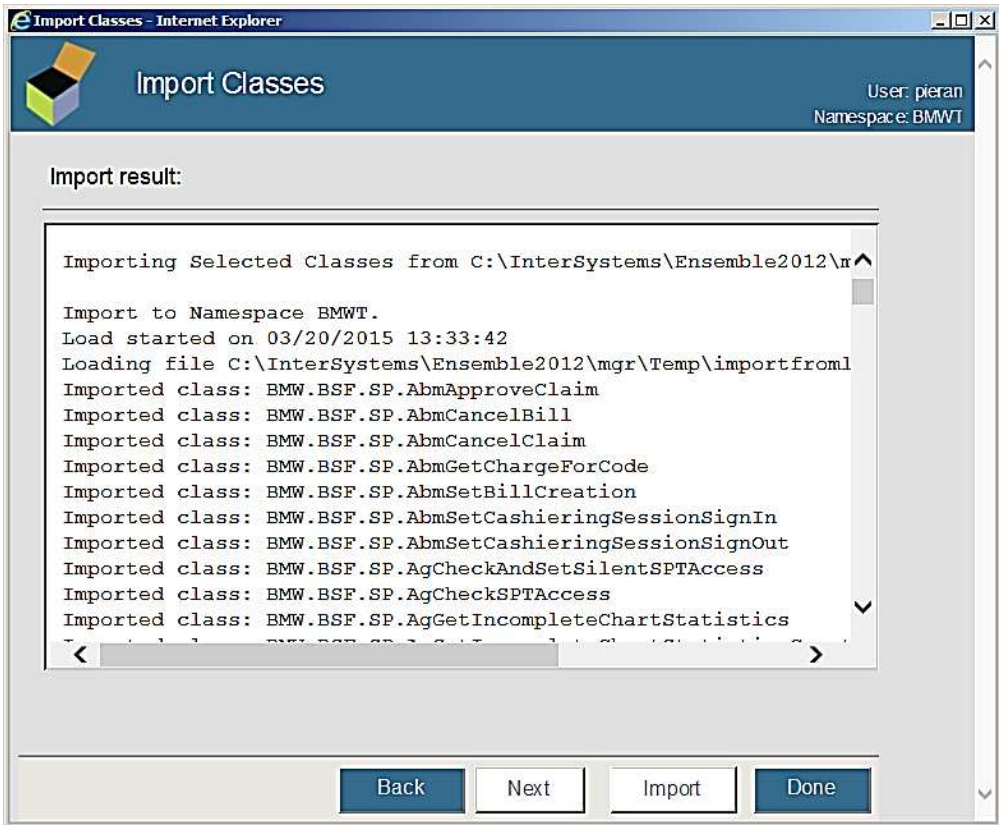

Figure 6-4: **Import Classes** window - Import listing

8. Scroll to the bottom of the listing to confirm the **Load finished successfully** message displays (Figure 6-5).

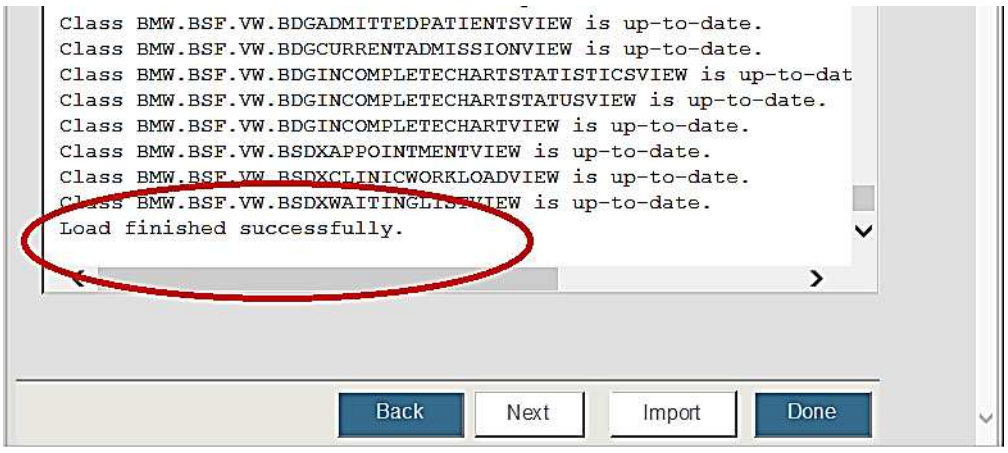

Figure 6-5: **Import Classes** window - Load finished successfully

At this point, the BMW database configuration is complete.

6.3 Cache User Creation

BPRM performs CRUD operations over the RPMS DB using the BMW tables that were mapped over the RPMS database, as described in Section 6.2.

BPRM requires a Cache user privileged to execute CRUD on the RPMS database. Table 6-1 shows the privileges needed:

Table 6-1: User Permissions Needed

Item	Permissions Needed
SQL Tables	Update/Read/Delete privilege on all tables of the BMW package in the RPMS database
SQL Views	Read permission all views of the BMW package in the RPMS database
SQL Procedures	Execute permission on all procedures of the BMW package in the RPMS database

6.3.1 Create the Moonwalk User

To create a new Moonwalk user:

1. Navigate to the **Users** window of the Ensemble System Management Portal following this path:

Home > System Administration > Security > Users

2. Click **Create New User** to display the **Edit User** window (Figure 6-6).

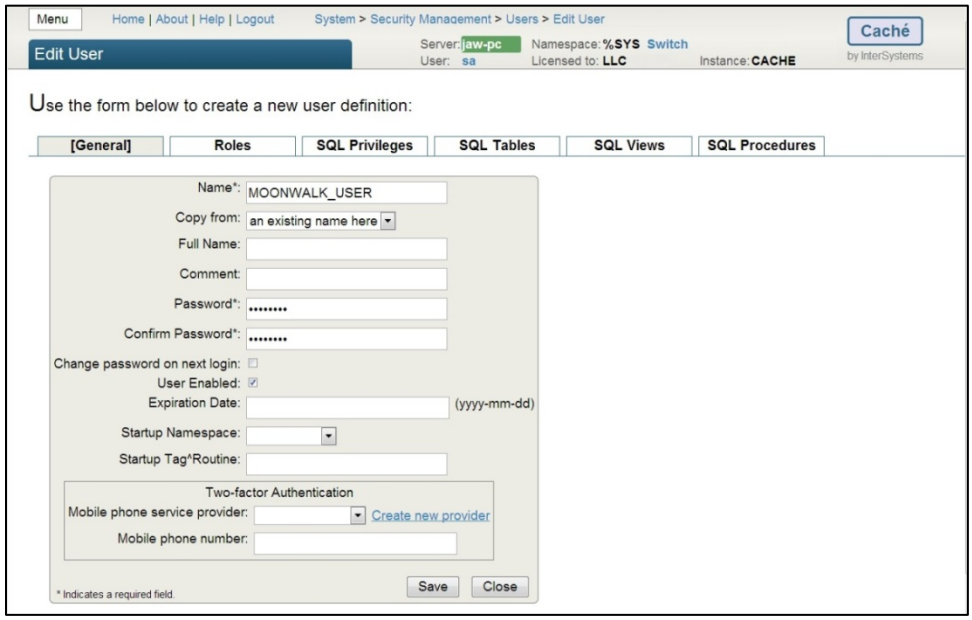

Figure 6-6: **Edit User** window

3. Type **MOONWALK_USER** in the **Name** field.
4. Type a password that complies with your site-specific password rules in the **Password** and **Password Confirmation** fields.
5. Click **Save** to save the new user
6. Click **Close** to exit the **Edit User** window.

6.3.2 Assign User Roles

To assign user roles for the required tables:

1. Navigate to the **Users** window (Figure 6-7) in the **Ensemble System Management Portal** following this path:

Home > System Administration > Security > Users

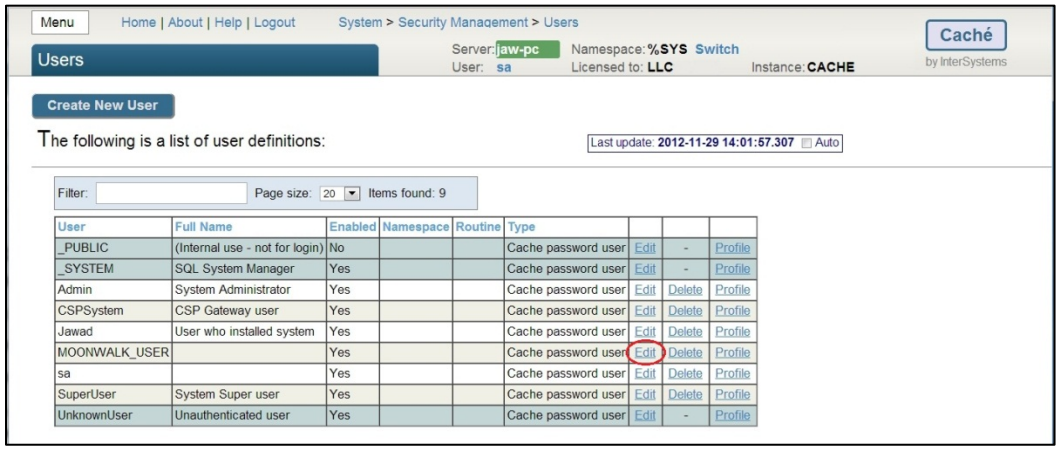

Figure 6-7: **Users** window

2. Click **Edit** in the row corresponding to the new MOONWALK_USER user created in Section 6.3.1. The Edit User Window (Figure 6-8) displays.

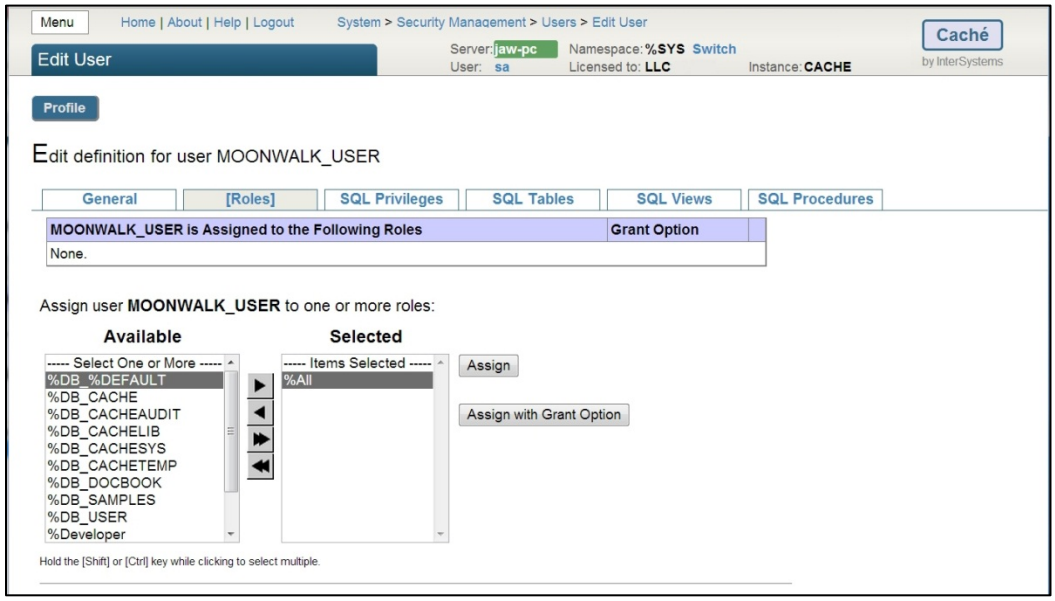

Figure 6-8: **Roles** tab in **Edit User** window – before changes

3. Click the **Roles** tab.

4. Select **%ALL** from the **Available** column and move it to the **Selected** column by clicking the right arrow.

5. Click **Assign** to assign the **%ALL** role to the MOONWALK_USER account. When done, the **Edit User** window will look similar to that shown in Figure 6-9.

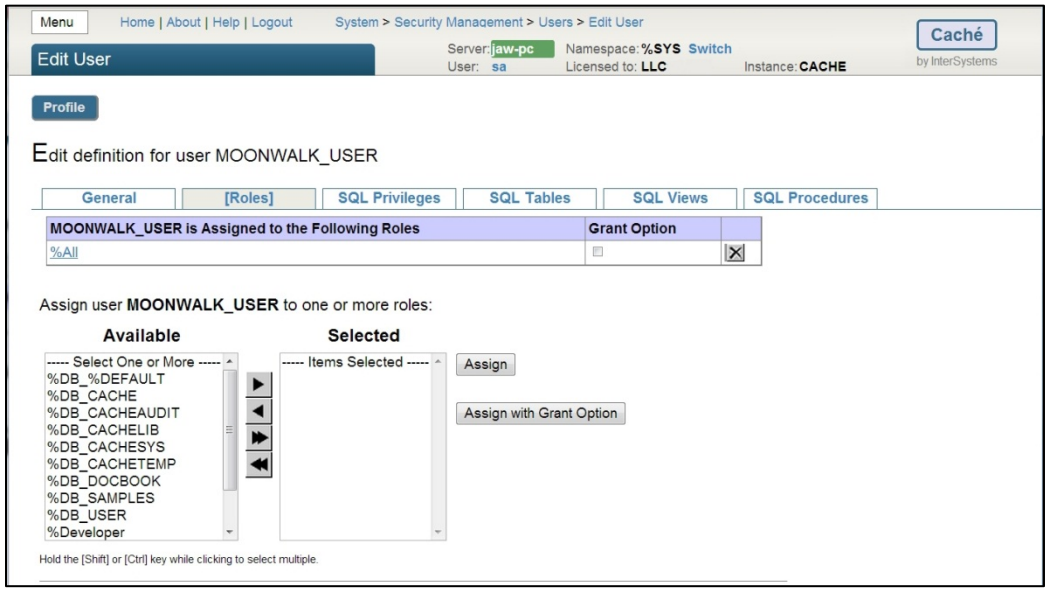

Figure 6-9: **Roles** tab in **Edit User** window – after changes

7.0 CQM MongoDB Database Installation

This section outlines the steps needed to install the CQM MongoDB object database system and the Measures and Value Sets database.

> **Note:** The dialog boxes shown in this section reflect CQM MongoDB v1.0. The dialog boxes displayed when installing later versions will be similar, although the version number displayed will be different.

7.1 Deploying the CQM MongoDB System

To deploy the CQM MongoDB system:

1. Copy or move the CQM MongoDB Installer file (**cqm_mongo_db_0101.msi**) to the application server upon which you intend to install the MongoDB system. See Section 3.2 for information about deployment strategies and possible configurations for the MongoDB system.

2. Log onto the application server and browse to the location where the **cqm_mongo_db_0101.msi** file is stored.

3. Double-click the **cqm_mongo_db_0101.msi** file to run the CQM MongoDB installer.

> **Note:** If an error message displays indicating that you do not have sufficient privileges to run the installer, refer to Appendix A: for instructions on running the installer from the Administrator command prompt.

Once the installer is started, the **CQM MongoDB Setup Wizard** (

Figure 7-1) displays.

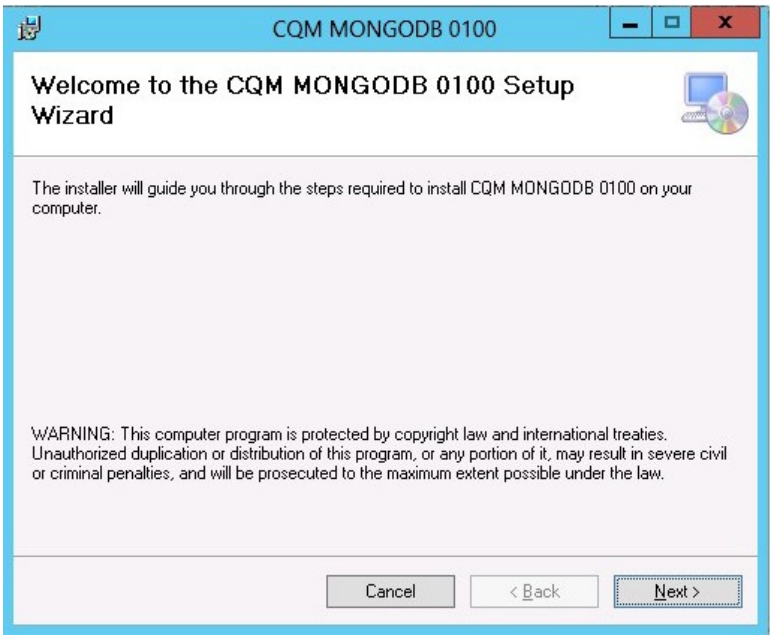

Figure 7-1: **CQM MongoDB Setup Wizard** dialog box

4. Click **Next**. The **Select Installation Folder** dialog box (Figure 7-2) displays. Accept the default folder location or browse to another location on your server, and then click **Next**.

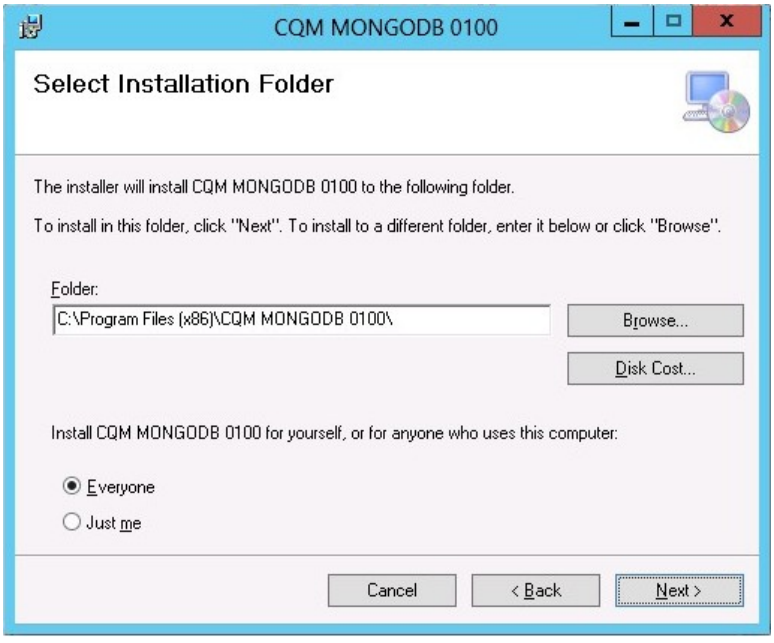

Figure 7-2: CQM MongoDB **Select Installation Folder** dialog box

5. The next dialog box (Figure 7-3) is a confirmation that the installation will start. Click **Next** to continue.

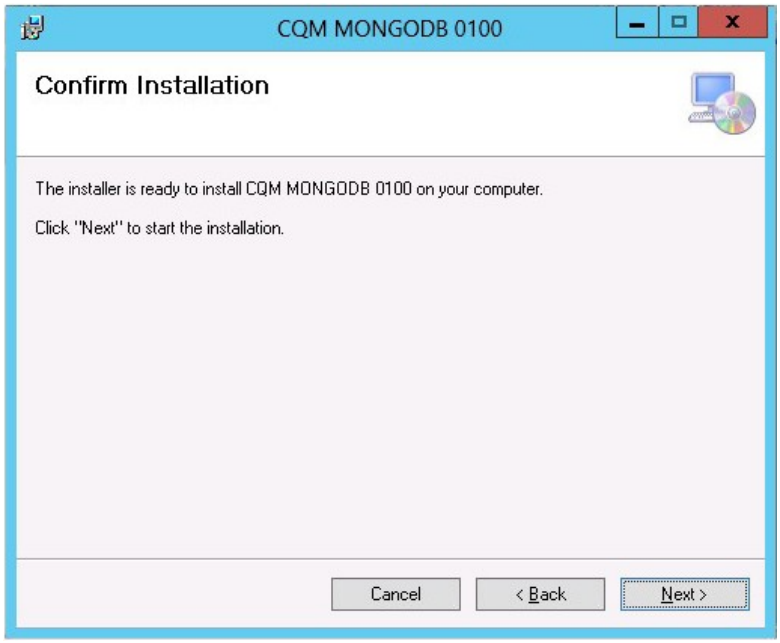

Figure 7-3: CQM MongoDB **Confirm Installation** dialog box

6. The next dialog box (Figure 7-4) shows the installation progress. The installation may take several minutes. Click **Next** when the installation is complete.

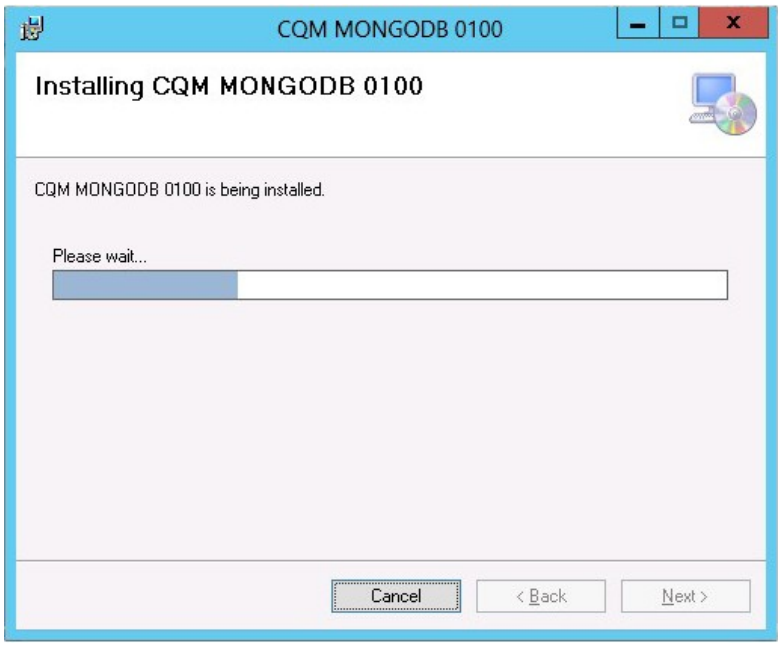

Figure 7-4: **Installing CQM MongoDB** dialog box

7. The final dialog box (Figure 7-5) confirms the installation has completed. Click **Close** to complete the installation of the MongoDB database system and its associated components.

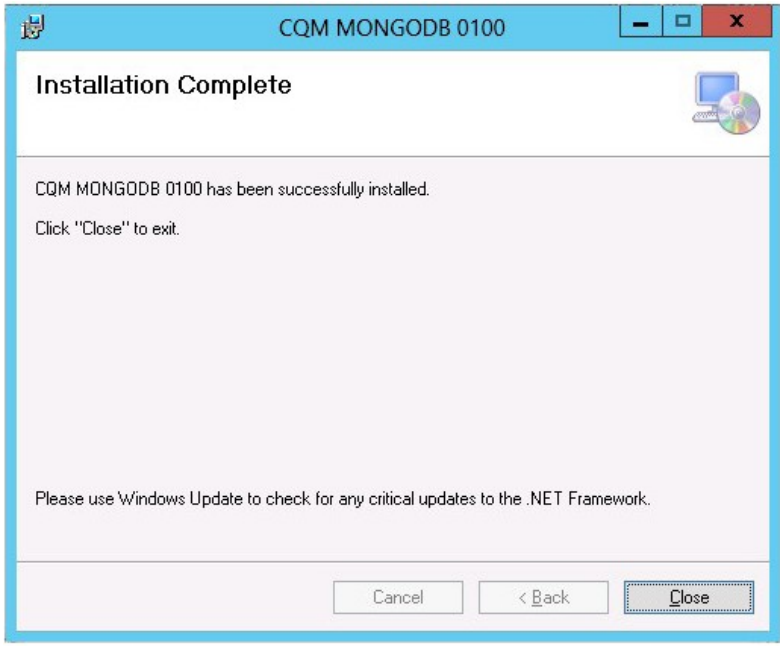

Figure 7-5: CQM MongoDB **Installation Complete** dialog box

8.0 Application Deployment to the Web Server

With the application and database server installations complete, this section describes the steps for installing the BPRM application itself.

> **Note**: If installing an update or patch to an existing BPRM installation, first uninstall the previous version before continuing. See Section 9.0 for instructions.

8.1 Deploy the BPRM Application

To deploy the BPRM application:

1. Log onto the application server and browse to the location where the BPRM Application Installer file (**bprm0300.msi**) is stored.
2. Double-click the **bprm0300.msi** file to run the BPRM application installer.

> **Note:** If an error message displays indicating that you do not have sufficient privileges to run the installer, refer to Appendix A for instructions on running the installer from the Administrator command prompt.

3. Once the installer is started, the **BPRM setup wizard** (Figure 8-1) displays.

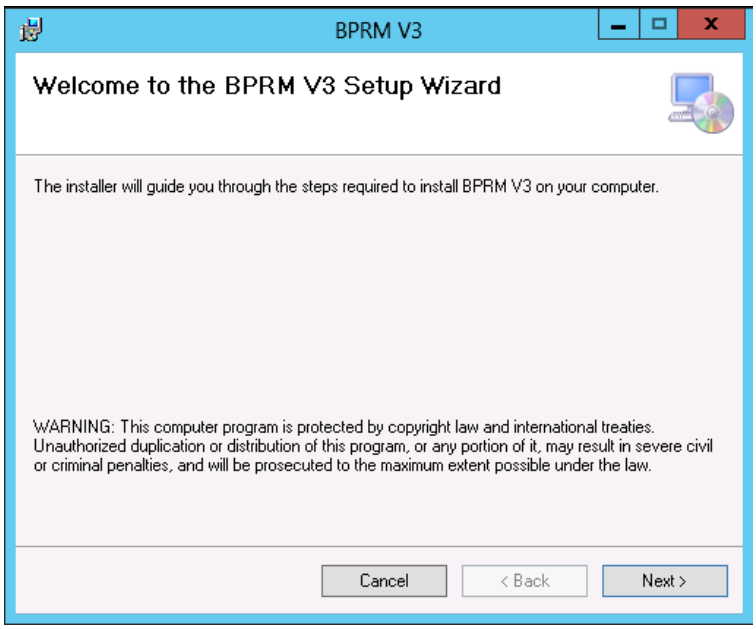

Figure 8-1: **BPRM Setup Wizard** dialog box

4. Click **Next**. The **Select Installation Address** dialog box displays.

5. Select **Moonwalk** from the **Site** list.
6. Type the directory name in the **Virtual directory** field, if necessary.
7. Select **Moonwalk** from the **Application Pool** list. Figure 8-3 shows the results:

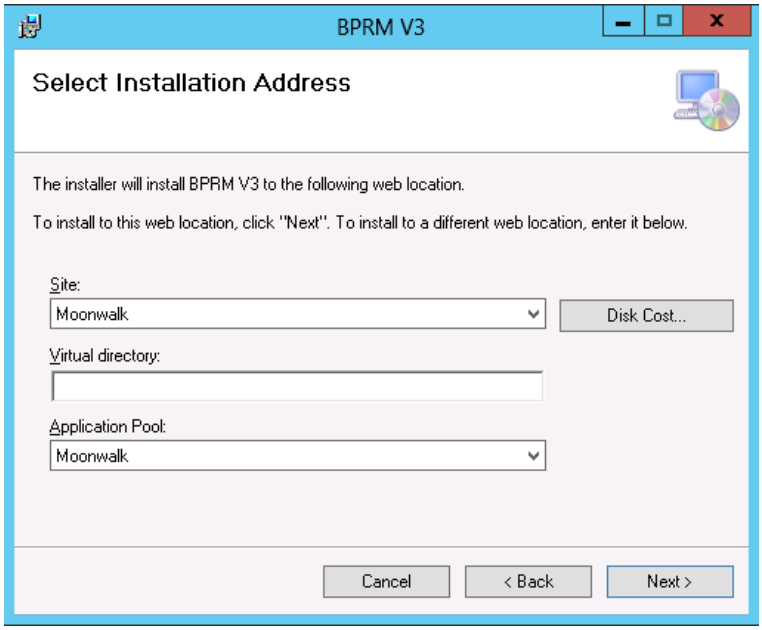

Figure 8-2: **Select Installation Location** dialog box after selection

8. Click **Next**. The **Confirm Installation (**Figure 8-4**)** dialog box displays.

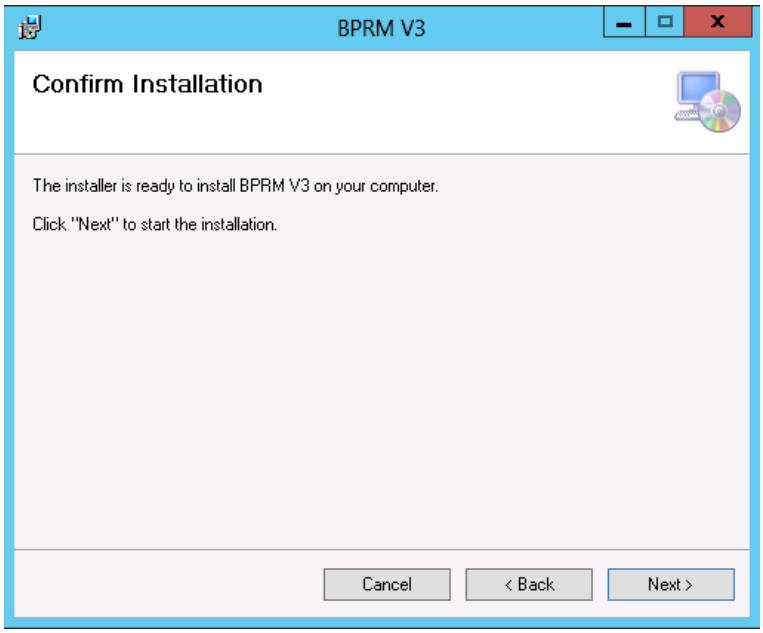

Figure 8-3: **Confirm Installation** dialog box

9. Click **Next**. The **Installing BPRM** dialog box (Figure 8-5) displays and the installation progress is shown.

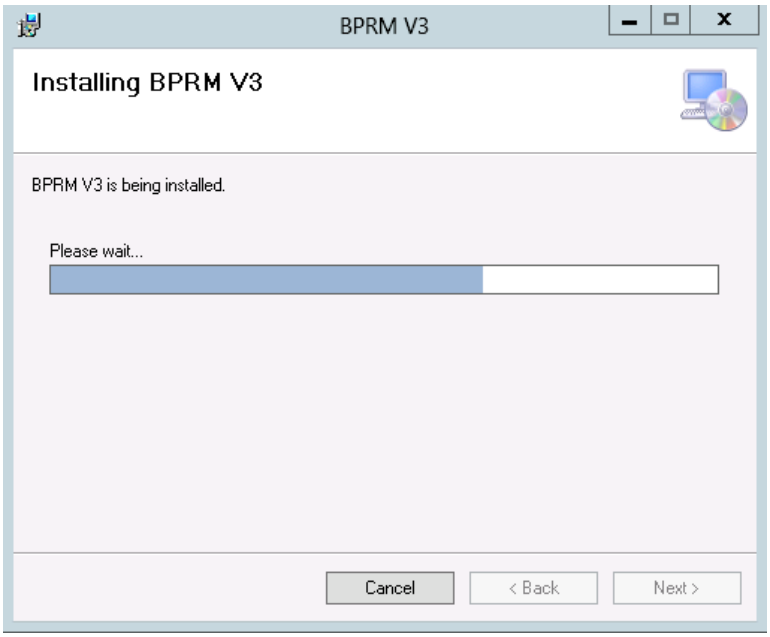

Figure 8-4: **Installing BPRM** dialog box

10. After a few moments of processing, the **Database Configuration** dialog box (Figure 8-6) displays.

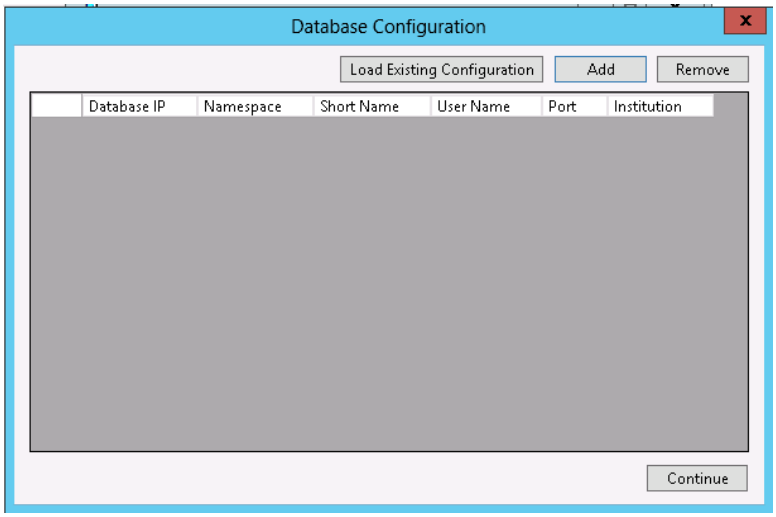

Figure 8-5: **Database Configuration** dialog box

11. The BPRM suite relies on specific information about each RPMS database to which it is connected. Click **Add** in the **Database Configuration** dialog box to display the Configuration dialog box (Figure 8-7) and add this information for each database associated with this installation.

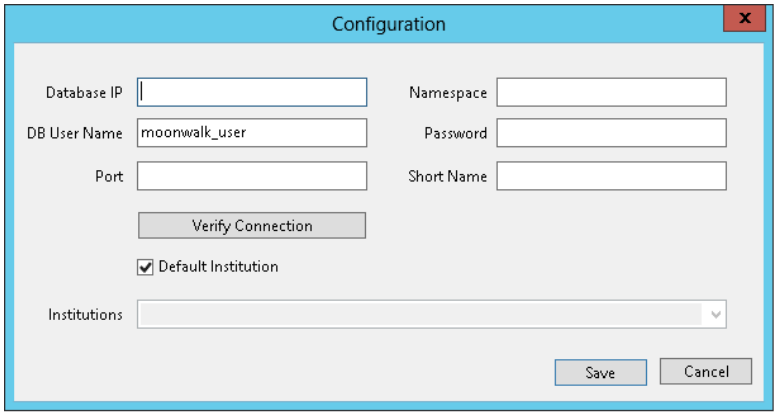

Figure 8-6: **Configuration** dialog box

The **Database Configuration** dialog box contains the following fields:

- **Database IP**. Use this field to enter the IP address of your RPMS database. Note that this is the internal IP address, not an external address.
- **Namespace**.Use this field to enter the namespace of your RPMS database.
- **DB User Name**.This field is automatically populated with the MOONWALK_USER user name.
- **Password**.Use this field to enter the password you set for the MOONWALK_USER account in section 6.3.1.
- **Port**.Use this field to enter the Cache Superserver port used by your RPMS database. By default, this is port 1972, although it will be different on your system if you have changed this Cache setting.

  You can check your Superserver port number from within the Ensemble Management Portal using this path:

Home > Configuration > Memory and Startup

  The Superserver port number displays at the bottom of the page displayed.

- **Short Name**.This field is automatically populated with your institution's short name if it exists in your INSTITUTION file. If it does not exist, type a short name of your choice by which you can identify this institution in the future.
- **Institutions**.Use this list box to choose the institutions associated with your RPMS database. When the **Default** check box is enabled, this list is limited to only the institutions set as your default per your INSTITUTION file. When the check box is cleared, the list will show all available institutions.

12. When the **Configuration** dialog box displays, enter the **Database IP**, **NamespaceDB User Name**, **Password**, and **Port**, then click **Verify Connection**. Once the **Institutions** list is loaded, select your institution from the list and provide a **Short Name** (if not already present).

13. Once the fields are populated, click **Save** to add the information to the BPRM database configuration file. If more than one database is associated with this installation of BPRM, re-populate the form fields with the appropriate information and click **Save** again. Repeat this process for each database.

14. When done, click **Continue** to continue the application installation.

15. Next, the **CQM Configuration** dialog box shown in Figure 8-8 displays. By default, the database IP and Port numbers reflect the server where BPRM is installed. If you have installed the CQM MongoDB system on a separate server as described in Section 3.2, enter the Database IP address and Port number associated with that server.

> **Note:** It may be necessary to change your firewall settings to allow access to the port on your CQM MongoDB database server.

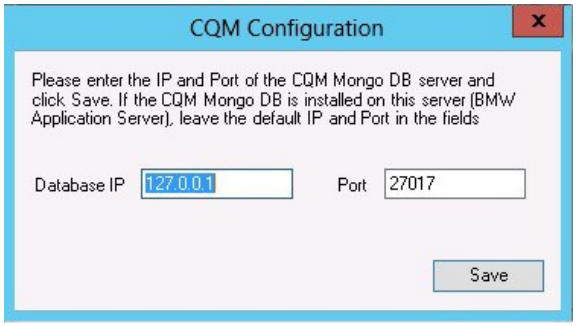

Figure 8-7: **CQM Configuration** dialog box

16. A Moonwalk Setup Status Page (Figure 8-9) will display to perform a setup check. The checks listed should display as complete.

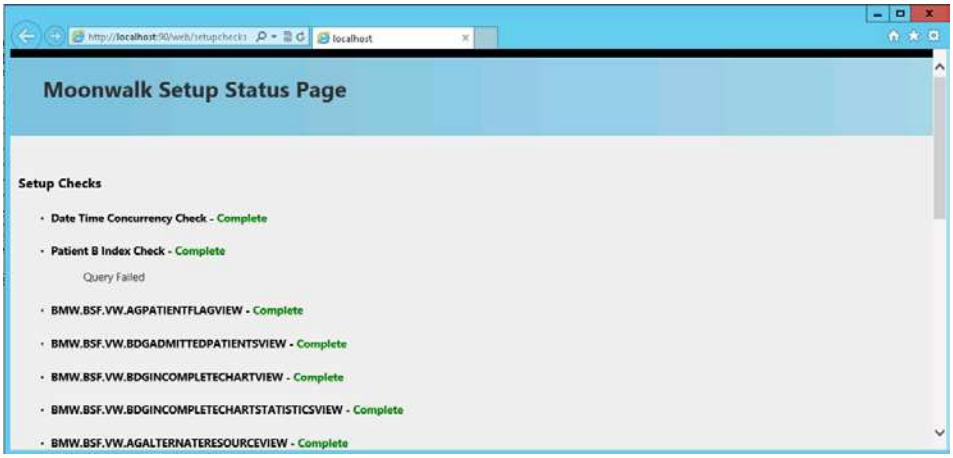

Figure 8-8: Moonwalk Setup Status Page

17. When the installation is complete, click **Next**. The **Installation Complete** dialog box Figure 8-10 displays.

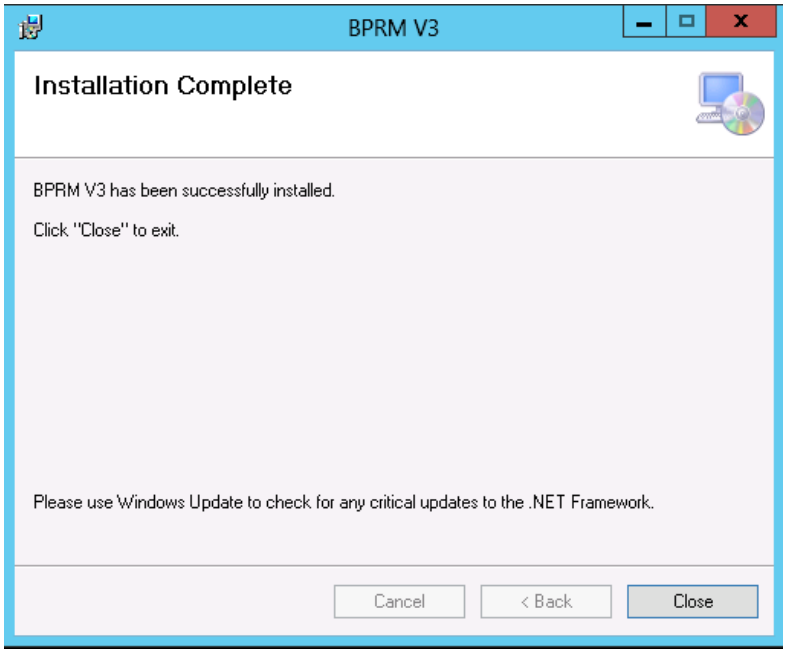

Figure 8-9: **Installation Complete** dialog box

18. Click **Close** to exit the dialog box.

8.2 Adding a Database after the Installation

In some cases and at some sites, it may be necessary or desirable to associate one or more additional databases to the BPRM application suite. To add a database after BPRM has been installed:

1. Log onto the application server where BPRM resides.
2. Browse to the location where the BPRM Application Installer file (**bprm0300.msi**) is stored.
3. Double-click the **bprm0300.msi** file to run the BPRM application installer. The **BPRM setup wizard** (Figure 8-11) displays in repair mode.

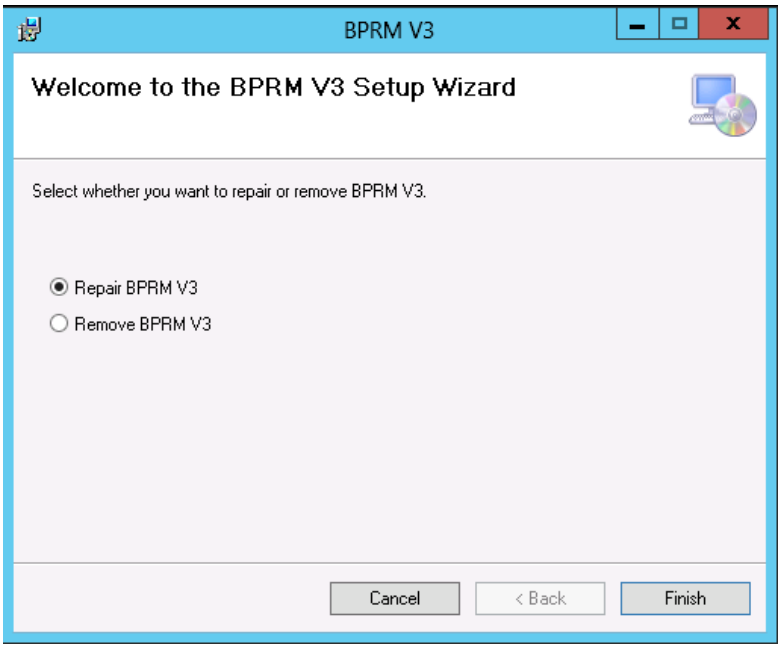

Figure 8-10: **BPRM Setup Wizard** dialog box – Repair Mode

4. Select **Repair**, and then click **Finish**. The **Installing BPRM** dialog box (Figure 8-12) displays.

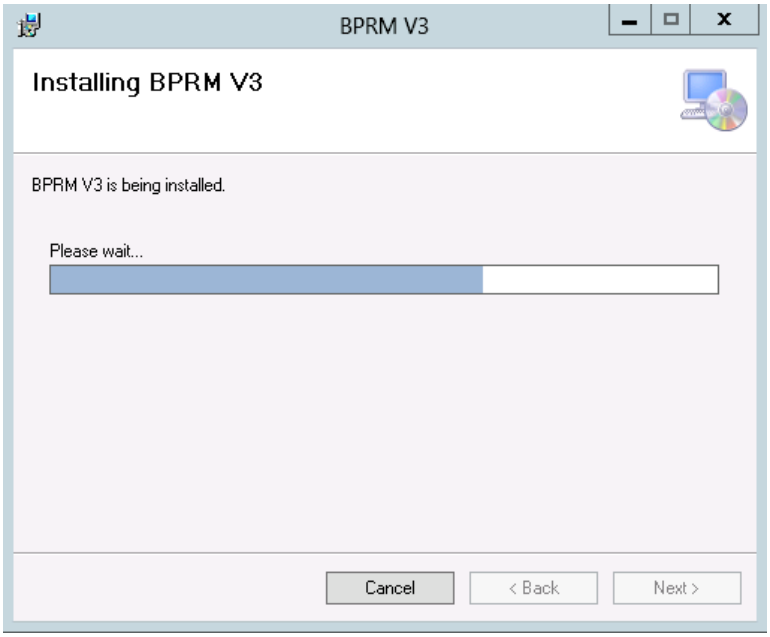

Figure 8-11: **Installing BPRM** dialog box

5. Click **Next** once the processing is complete. The **Database Configuration** dialog box (Figure 8-13) displays.

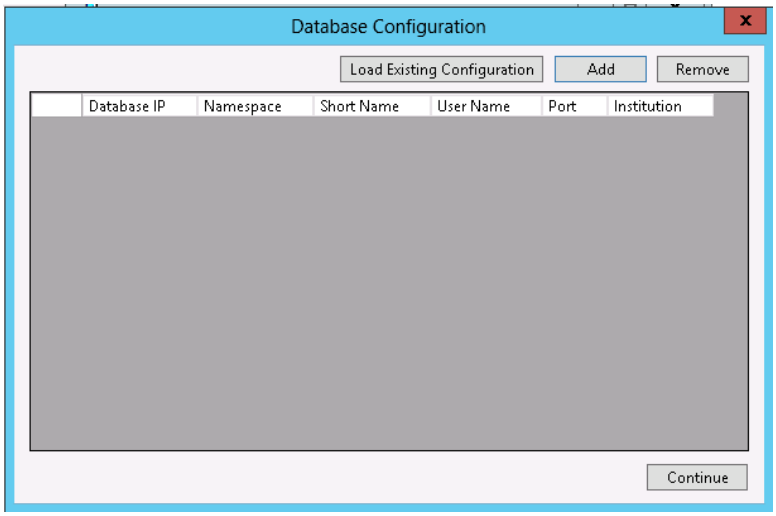

Figure 8-12: **Database Configuration** dialog box

6. In the **Database Configuration** dialog box, click **Load Existing Configuration**. The **Configuration File Selection** dialog box (Figure 8-14) displays.

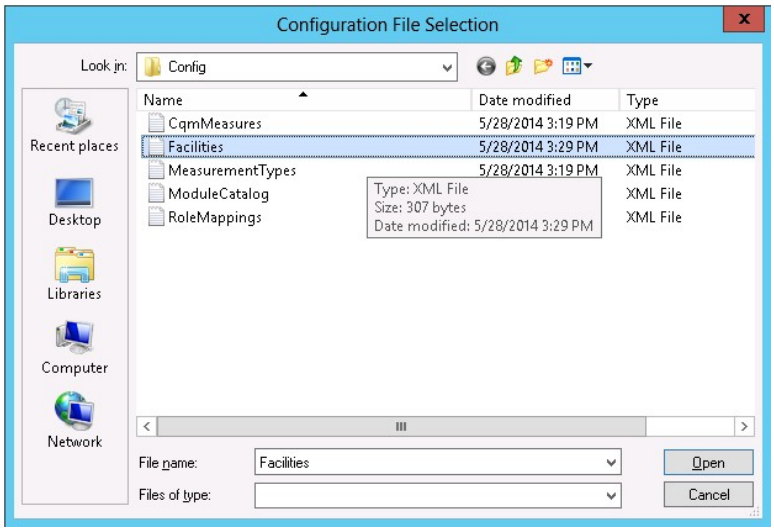

Figure 8-13: **Configuration File Selection** dialog box

7. Select **Facilities**, and then click **Open**. The **Database Configuration** dialog box displays again, with the existing configuration listed, similar to that shown in Figure 8-15.

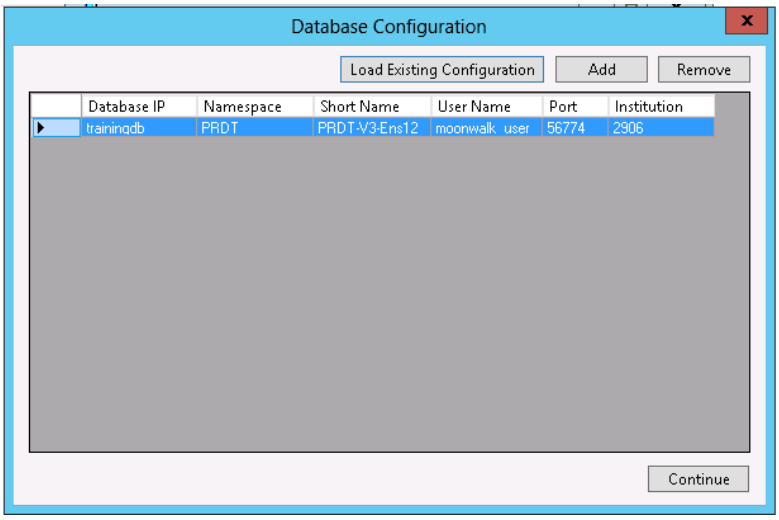

Figure 8-14: **Database Configuration** dialog box - Existing configurations listed

8. Click **Add** in the **Database Configuration** dialog box to display the Configuration dialog box.

9. When the **Configuration** dialog box displays, enter the **Database IP**, **NamespaceDB User Name**, **Password**, and **Port**, then click **Verify Connection**. Once the **Institutions** list is loaded, select your institution from the list and provide a **Short Name** (if not already present).

10. Once the fields are populated, click **Save** to add the information to the BPRM database configuration file. Repeat this process for each database.

11. When done, click **Continue** to continue the application installation.

12. When the installation is complete, the **Installation Complete** dialog box Figure 8-16 displays.

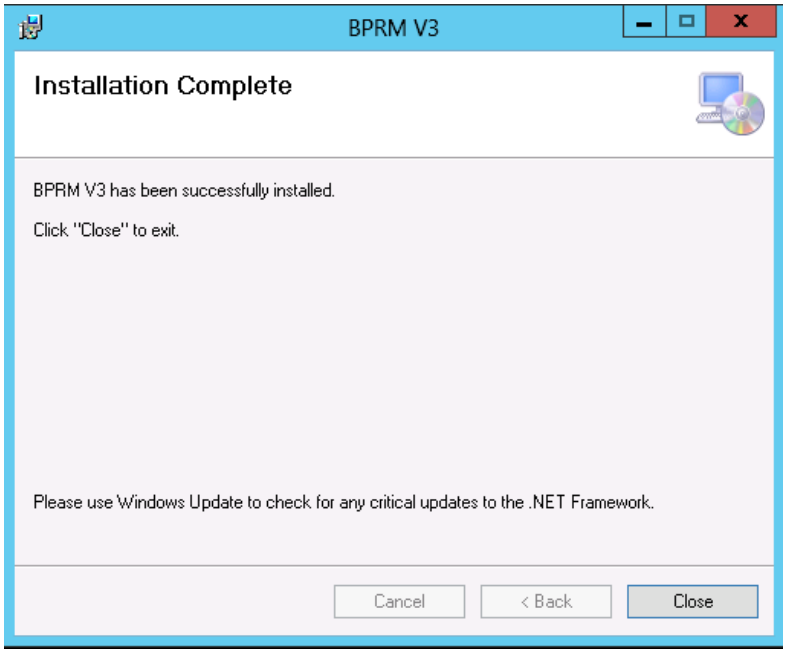

Figure 8-15: **Installation Complete** dialog box

13. Click **Close** to exit the dialog box.

8.3 Menu and Security Keys

There are no package-specific security keys associated with BPRM. The BPRM package operates on existing RPMS security keys.

BPRM security is built upon the RPMS Menus and Security keys. Table 8-1 defines the relationship between BPRM Roles and the RPMS Menu and Security keys.

> **Note**: If a user has AKMOCORE or AKMOEVE as their primary menu option, either of these menu options will override any of the Secondary Menu options shown in Table 8-1. They will, however, need the appropriate Security Keys as shown in the table.

Table 8-1: Security Keys

Role	**Secondary Menu Option**	**Security Keys** (Must include all)
ADT Clerk	BDGMENU	DGZADT DGZNUR DGZMENU
ADT Coder	BDGMENU	DGZPCC DGZMENU
ADT Supervisor	BDGMENU	DGZADT DGZICE DGZNUR DGZSUP DGZSYS DGZMENU
ADT Non-Clinical	BDGMENU	DGZNOCLN DGZMENU
Admin		XUPROG XUPROGMODE
CQM Clerk	APCLMENU	APCLZMENU
CQM Supervisor	APCLMENU	APCLZMENU
Flag Manager		DGPF MANAGER
Flag Assignment		DGPF ASSIGNMENT
Flag Access		DGPF PRF ACCESS
PHR Operate	AGPAT -or- AGVIEWONLY	AGZPHROPT
Registration Clerk	AGPAT -or- AGMENU	AGZMENU
Registration Supervisor	AGMENU	AGZMENU AGZMGR AGZHOME AGZREPORTS AGZDELHRN
Registration View Only	AGPAT -or- AGVIEWONLY	AGZVIEWONLY
Scheduling Clerk	BSDMENU	SDZMENU
Scheduling Supervisor	BSDMENU -or- BSD MENU SUPERVISOR	SDZMENU SDZSUP
SSN Viewer	AGSSNMENU	AGZVIEWSSN

In cases where there is more than one Secondary Menu Option listed in Table 8-1, only one is necessary per user. Conversely, where there is more than one Security Key listed for a specific role, all of the keys shown must be included. For example, a Scheduling Supervisor needs either the BSDMENU or BSD MENU SUPERVISOR added as a Secondary Menu Option, but needs both the SDZMENU and SDZSUM Security Keys.

8.4 Open the BPRM Application

After the installation and configuration steps have been done, to open BPRM:

1. Open Internet Explorer.
2. In the Address bar, enter the IP address of your Windows application server and the port number using this form, where ***domain_name*** represents the IP address of the application server and ***k*** represents the port number you assigned in Section 5.9:

   For sites using SSL:

   https://domain_name:kkk

   For sites not using SSL:

   http:// ip_address:kk
3. If Microsoft Silverlight is not already installed on the computer, a message will be displayed offering to download and install it. Follow the prompts to install Silverlight on the computer.
4. Once Silverlight is installed, the BPRM **Log In** screen (Figure 8-17) displays.

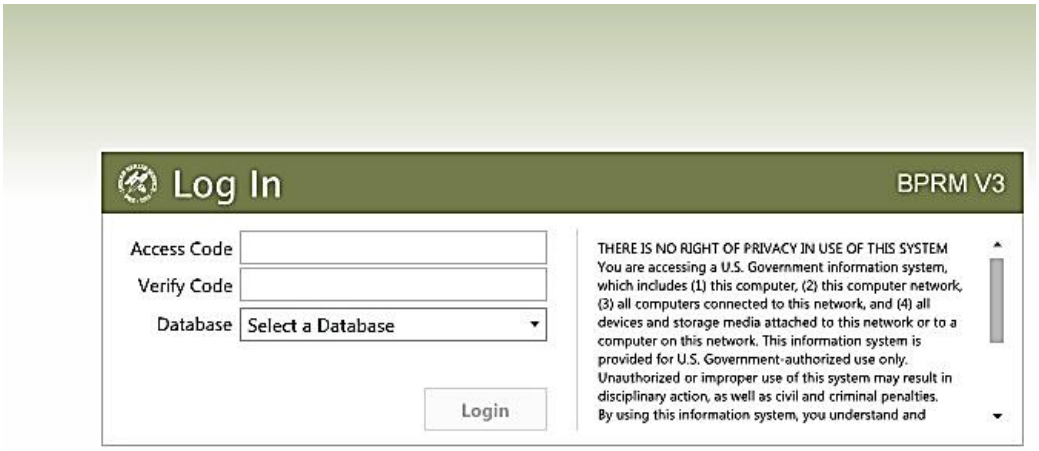

Figure 8-16: BPRM **Log In** screen

5. Type your RPMS Access Code (user name) in the **Access Code** field
6. Type your RPMS Verify Code (password) in the **Verify Code** field.
7. Select your RPMS database from the **Database** list box.

> **Note:** Users must have an RPMS division assigned to them before they can log into the RPMS database selected in this step.

8. Click **Login**. A screen similar to that shown in Figure 8-18 will be displayed, although different modules may be displayed at the bottom of the screen.

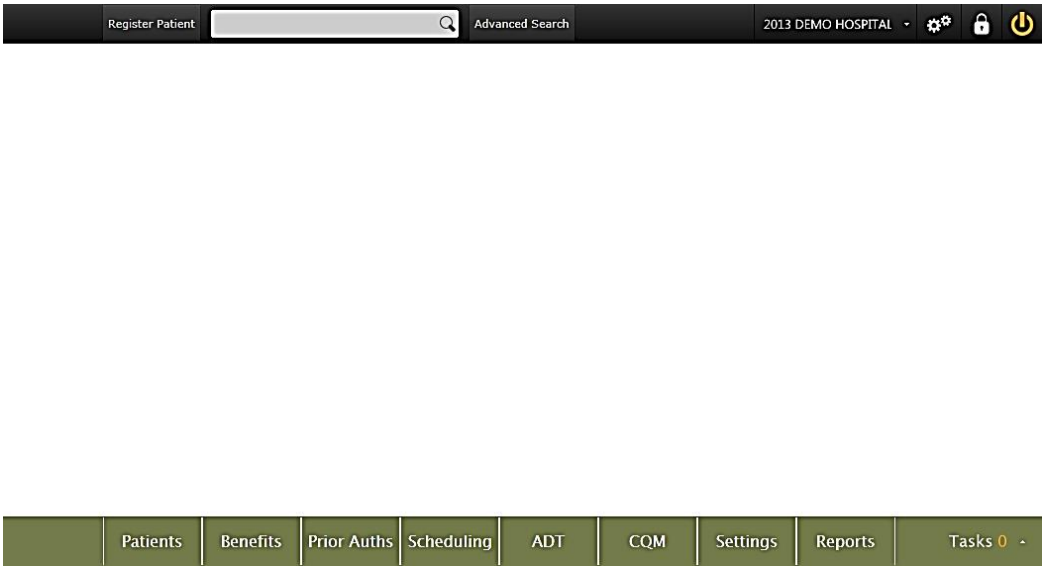

Figure 8-17: BPRM Opening Screen

Note: If you specified a port other than the default in Section 5.7.3 and the opening screen is not displayed, verify that the port you specified is open on the BPRM web server.

Refer to the separate BPRM User Manuals for additional information about using the modules that make up the application suite.

9.0 Installing BPRM Patches and Updates

BPRM patches and updates are released on a periodic basis to address reported issues and to add enhancements. Follow the steps in Sections 9.1 through 9.7 to install an incremental patch or update.

> **Note:** In this chapter, the BPRM installation file name is represented with **bprm*nnnn*.exe**, where ***nnnn*** represents the BPRM patch or update version number you are installing.

9.1 Stop the BPRM Web Site on the Application Server

Before installing a patch or update, stop the BPRM (Moonwalk) web site:

1. From the Windows **Control Panel** menu, open the **System and Security** applet and select **Administrative Tools** as shown in Figure 9-1.

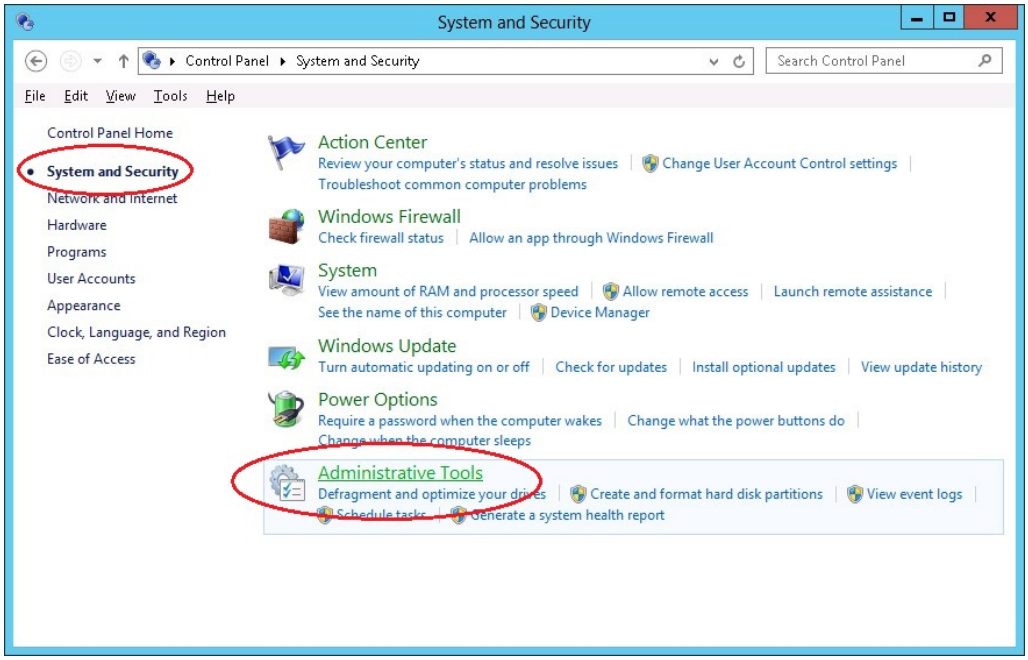

Figure 9-1: Opening **Administrative Tools**

2. Double-click **Internet Information Services (IIS) Manager** (Figure 9-2).

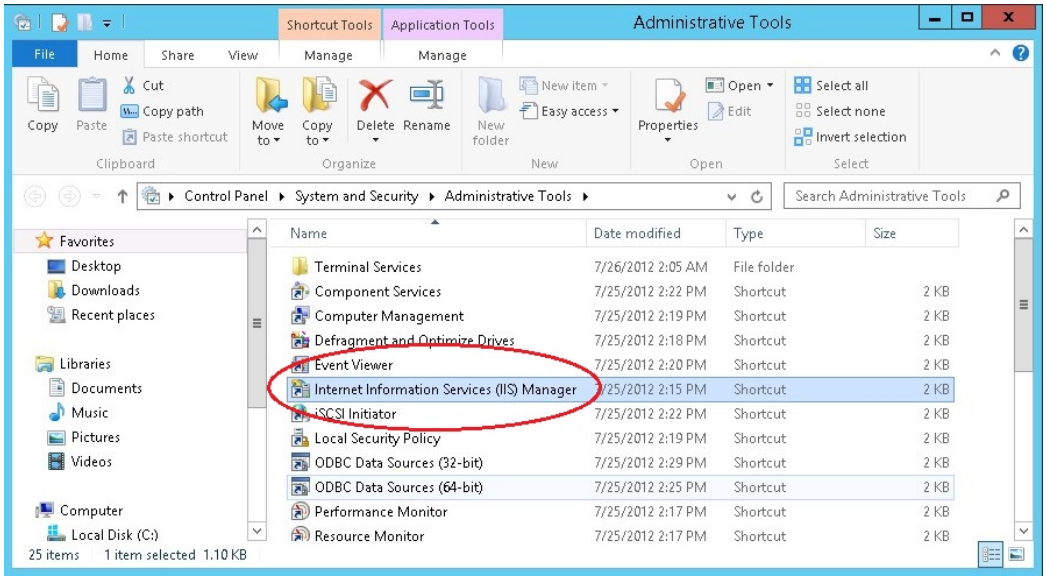

Figure 9-2: Opening **Internet Information Services (IIS) Manager**

3. Expand the tree in the left pane for the appropriate server (**TRAININGAPP** in the example shown in Figure 9-3). Open the **Sites** folder and select the **Moonwalk** site.

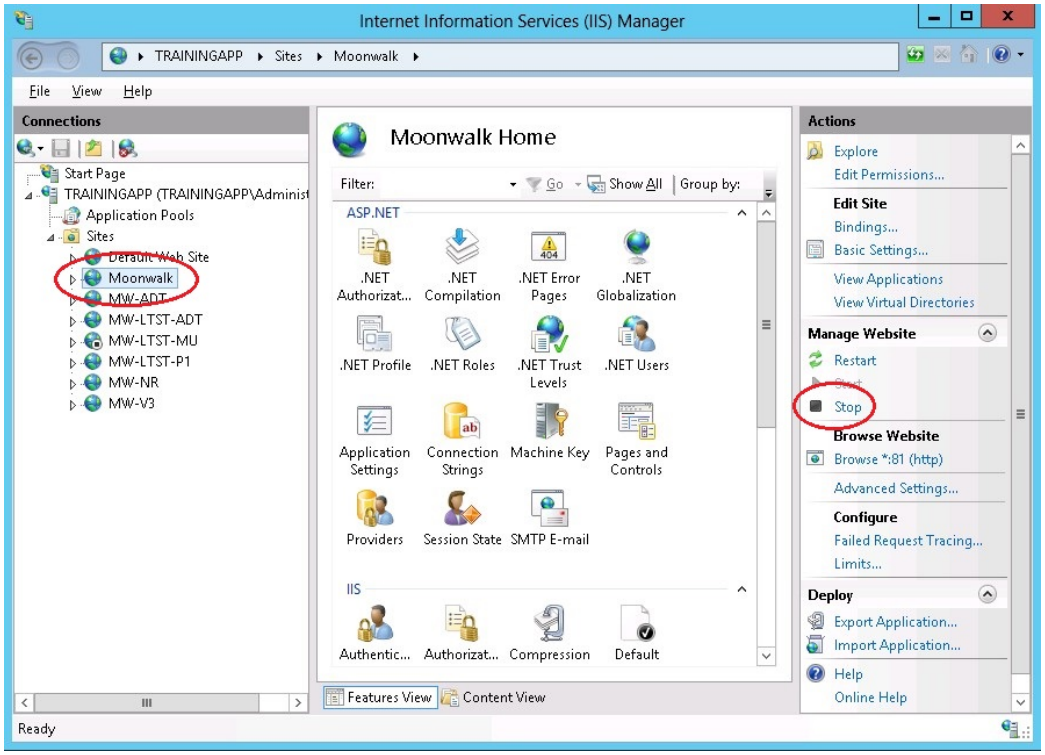

Figure 9-3: Internet Information Services (IIS) - Stopping the Moonwalk (BPRM) web site

4. Click **Stop** in the **Manage Web Site** section on the right side of the window as shown in Figure 9-3.

9.2 Uninstall the BPRM Application

Follow these steps to uninstall BPRM:

1. Open the **Windows Control Panel** and select the Programs and Features applet.
2. Select the BPRM application as shown in Figure 9-4 and click **Uninstall**. Be aware that in some cases, the previous namespace (BMW) may be displayed instead of BPRM:

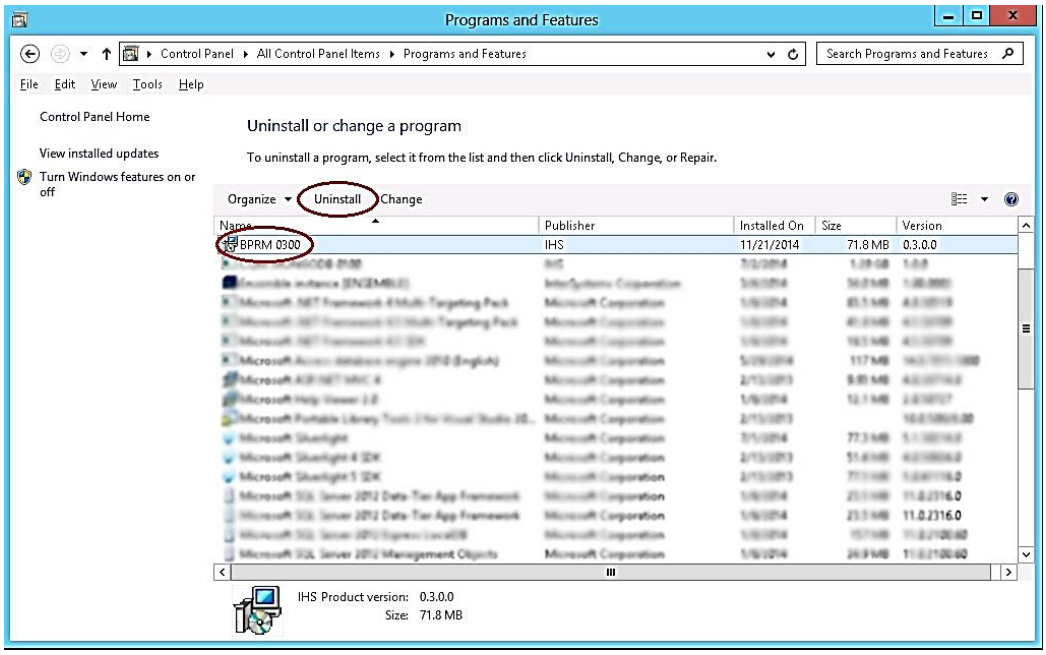

Figure 9-4: Uninstalling BPRM

9.3 Install the BPRM Application

To deploy the BPRM application:

3. Log onto the application server and browse to the location where the BPRM Application Installer file (**bprm*nnnn*.msi**) is stored.
4. Double-click the **bprm*nnnn*.msi** file to run the BPRM application installer.

> **Note:** If an error message displays indicating that you do not have sufficient privileges to run the installer, refer to Appendix A for instructions on running the installer from the Administrator command prompt.

5. Once the installer is started, the **BPRM setup wizard** (Figure 9-5) displays.

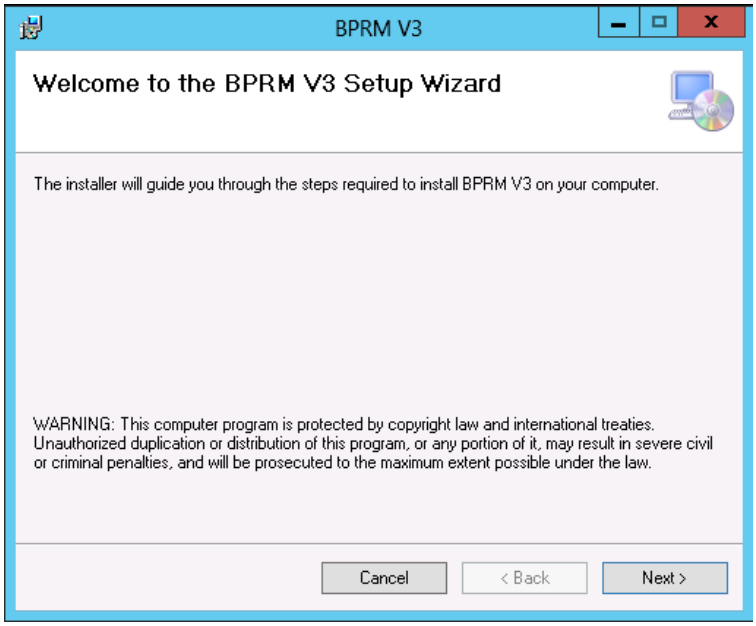

Figure 9-5: **BPRM Setup Wizard** dialog box

6. Click **Next**. The **Select Installation Address** dialog box displays.
7. Select **Moonwalk** from the **Site** list.
8. Type the directory name in the **Virtual directory** field, if necessary.
9. Select **Moonwalk** from the **Application Pool** list. Figure 9-7 shows the results:

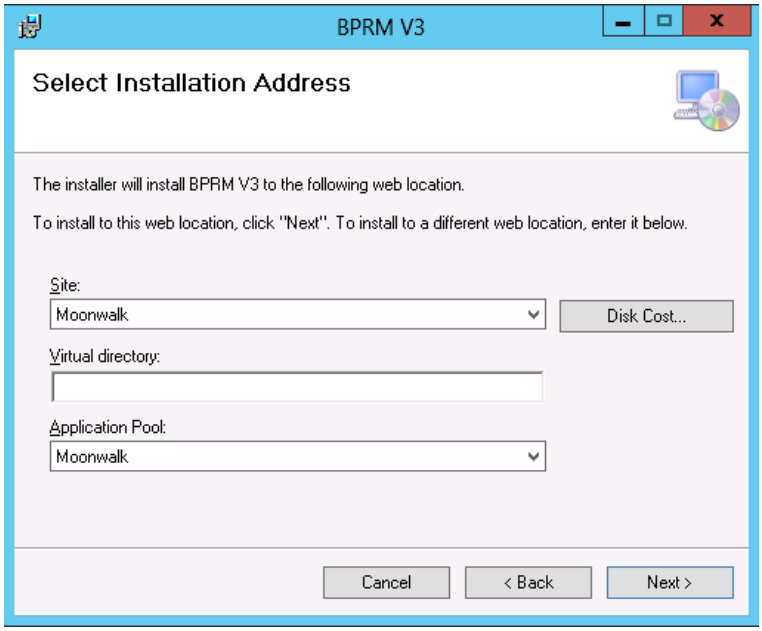

Figure 9-6: **Select Installation Location** dialog box after selection

10. Click **Next**. The **Confirm Installation (**Figure 9-8**)** dialog box displays.

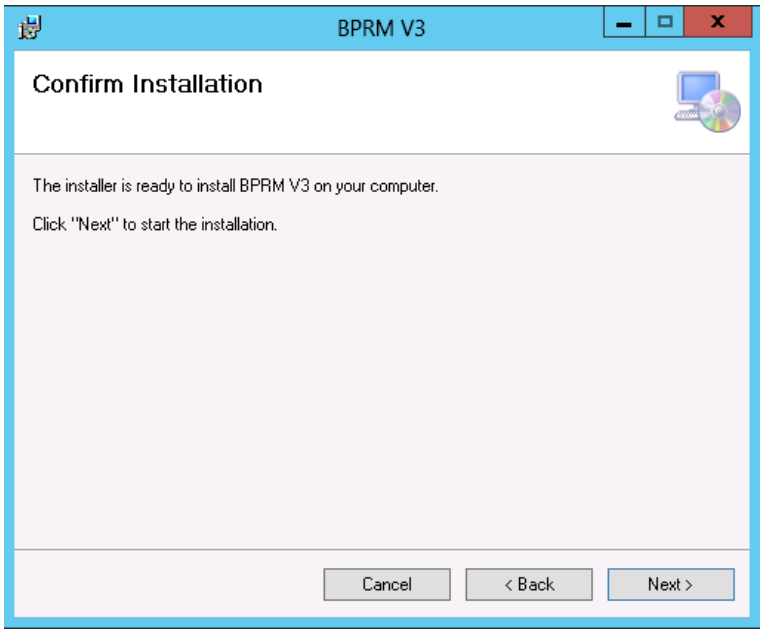

Figure 9-7: **Confirm Installation** dialog box

11. Click **Next**. The **Installing BPRM** dialog box (Figure 9-9) displays and the installation progress is shown.

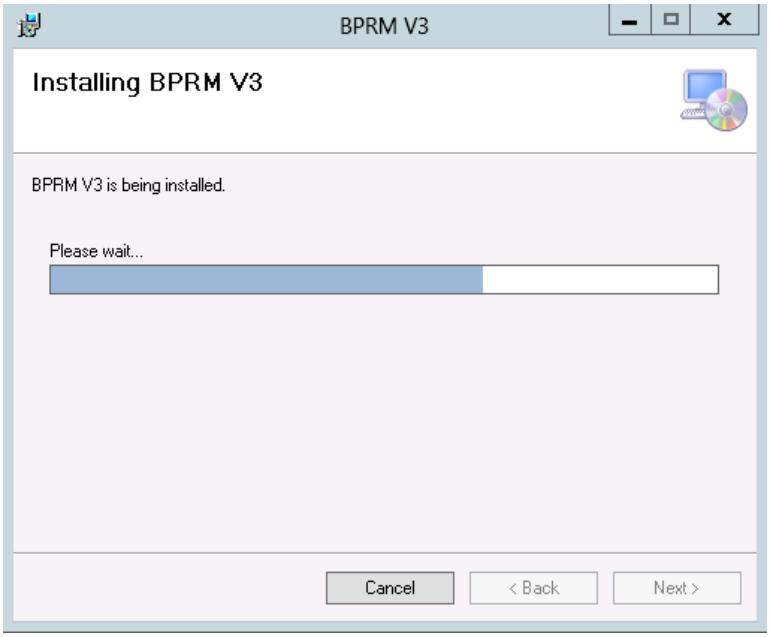

Figure 9-8: **Installing BPRM** dialog box

12. After a few moments of processing, the **Database Configuration** dialog box (Figure 9-10) displays.

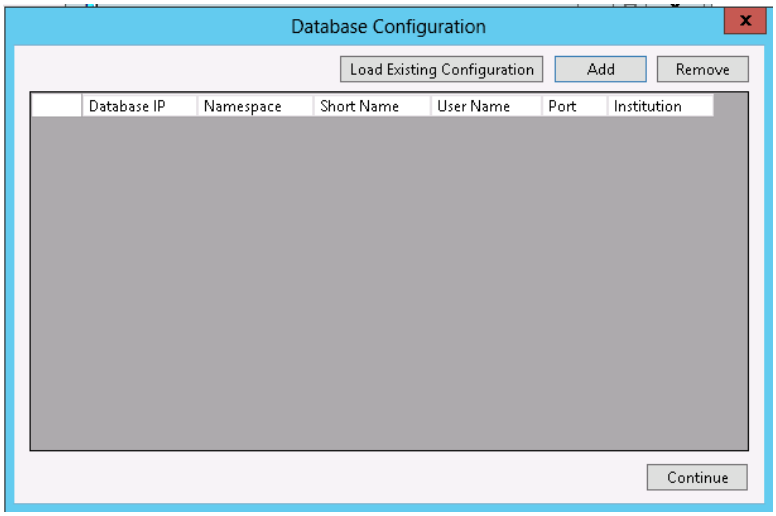

Figure 9-9: **Database Configuration** dialog box

13. In the **Database Configuration** dialog box, click **Load Existing Configuration**. The **Configuration File Selection** dialog box (Figure 9-11) displays.

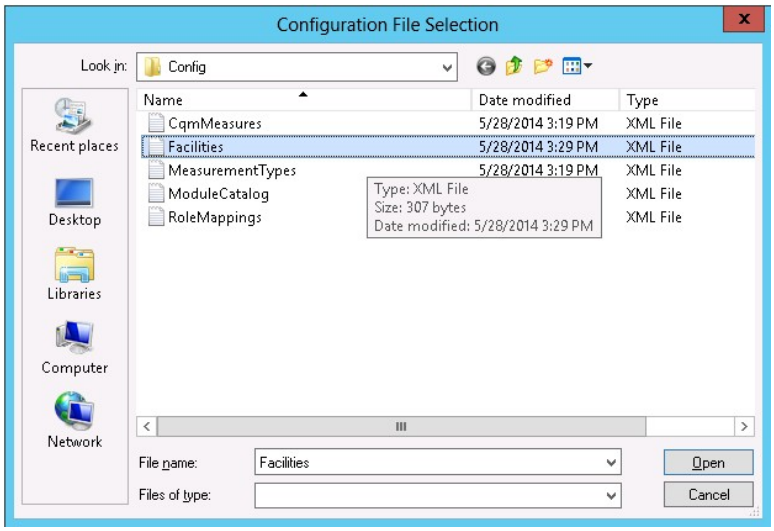

Figure 9-10: **Configuration File Selection** dialog box

14. Select **Facilities**, and then click **Open**. The **Database Configuration** dialog box displays again, with the existing configuration listed, similar to that shown in Figure 9-12.

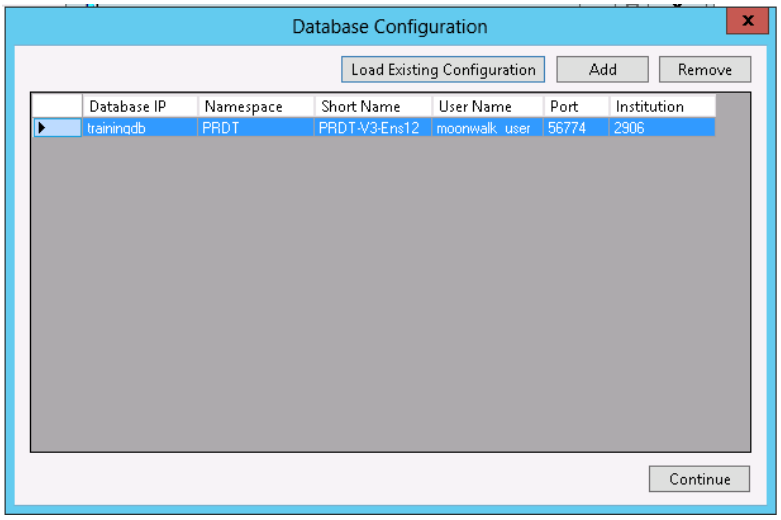

Figure 9-11: **Database Configuration** dialog box - Existing configurations listed

15. After you have specified all of the required information in the BPRM Release Manager dialog box, click **Continue** to complete the installation.

16. Next, the **CQM Configuration** dialog box shown in Figure 9-13 displays. By default, the database IP and Port numbers reflect the server where BPRM is installed. If you have installed the CQM MongoDB system on a separate server as described in Section 3.2, enter the Database IP address and Port number associated with that server.

Note: It may be necessary to change your firewall settings to allow access to the port on your CQM MongoDB database server.

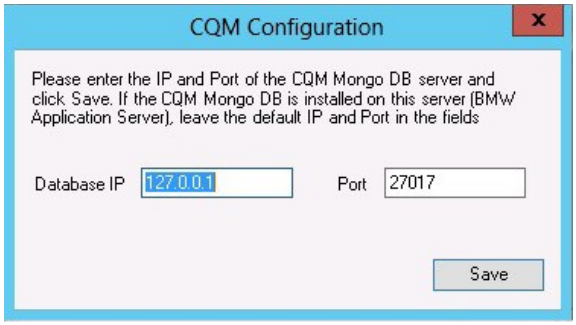

Figure 9-12: **CQM Configuration** dialog box

17. A Moonwalk Setup Status Page (Figure 9-14) will display to perform a setup check. The checks listed should display as complete. This page can only display results white the Moonwalk website and application pool are started.

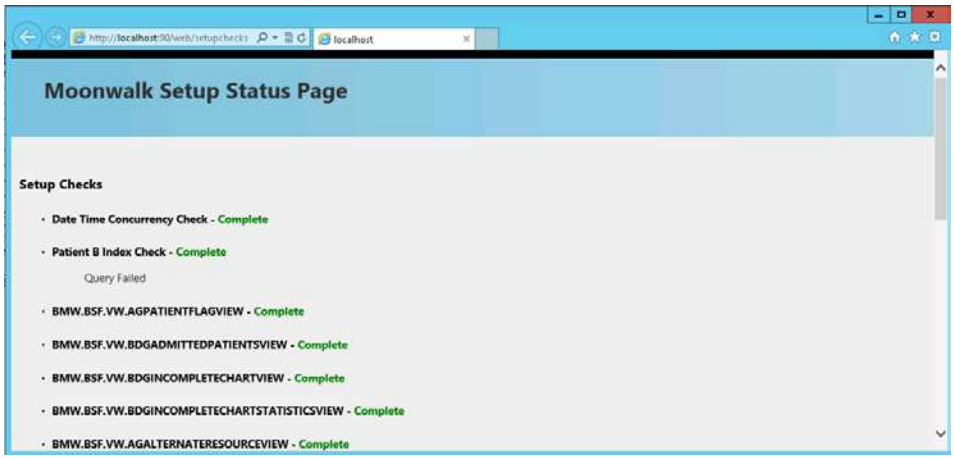

Figure 9-13: Moonwalk Setup Status Page

18. When the installation is complete, click **Next**. The **Installation Complete** dialog box Figure 9-15 displays.

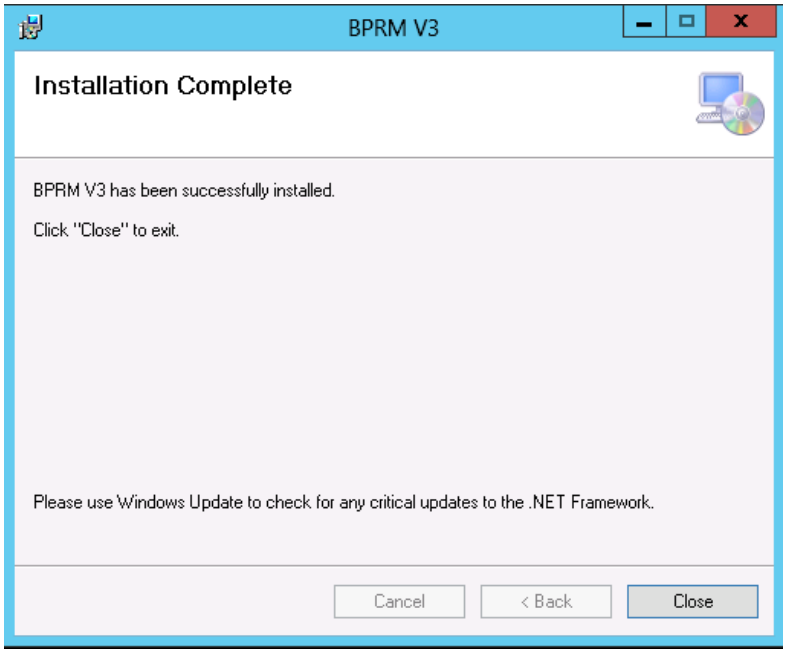

Figure 9-14: **Installation Complete** dialog box

19. Click **Close** to exit the dialog box.

9.4 Importing a New BMW CACHE.DAT File

Follow the steps outlined in Section 5 of the *BMW CACHE.DAT Installation Guide and Release Notes* to import a new BMW CACHE.DAT file.

9.5 Importing a New BPRM XML File

A BPRM patch or update is contained within a single XML file. Follow the steps in Sections 9.5.1 through 9.5.2 to import a new BPRM XML file.

9.5.1 Disable Read Only

In order to import the **bprm*nnnn*.xml** file, set the BMW database to allow write access. If the database is set to **Read Only**:

1. Browse to the **Local Databases** window of the Ensemble Management Portal following this path:

Home > System Administration > Configuration > System Configuration > Local Databases

2. Click **Edit** in the row corresponding to the **BMW** database.
3. In the window displayed, set the **Read Only?** field to **No**.

Once the patch is installed, re-enable Read Only mode by repeating these steps and setting the **Read Only?** field to **Yes**.

9.5.2 Import the BPRM XML File

To import the **bprm*nnnn*.xml** file:

1. From the **Ensemble/Cache System Management Portal Home** window, click **System Explorer**, and then click **Classes**.

2. In the **Classes** window displayed (Figure 9-16), select the **BMW** namespace in the **LookIn:** section on the left side of the window.

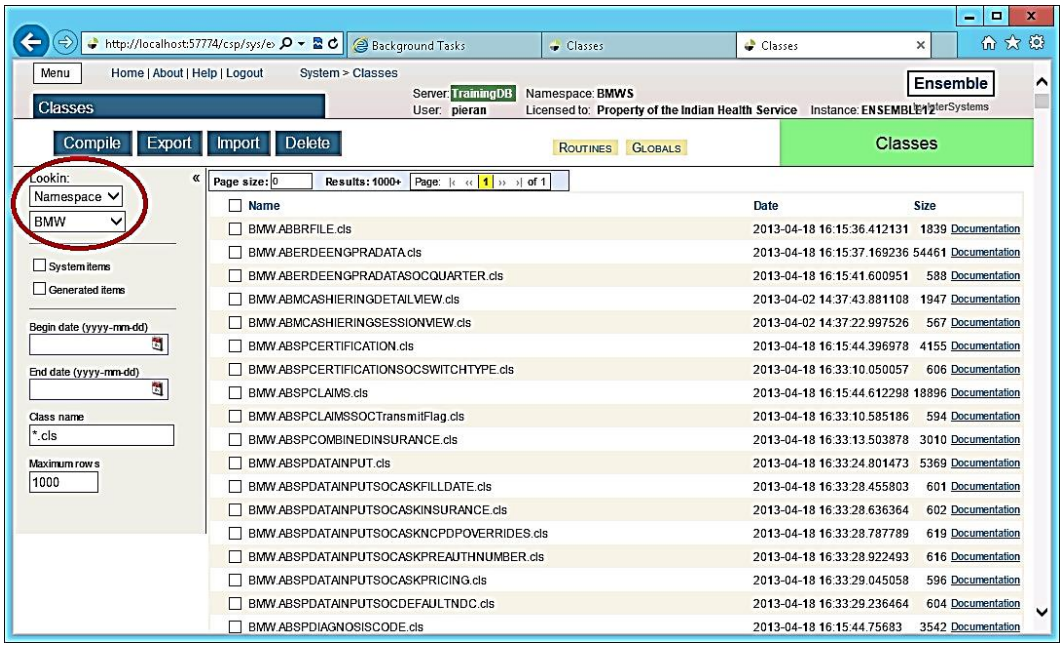

Figure 9-15: **Classes** window

3. Click **Import**. This causes the **Import Classes** dialog box shown in Figure 9-17 to be displayed.

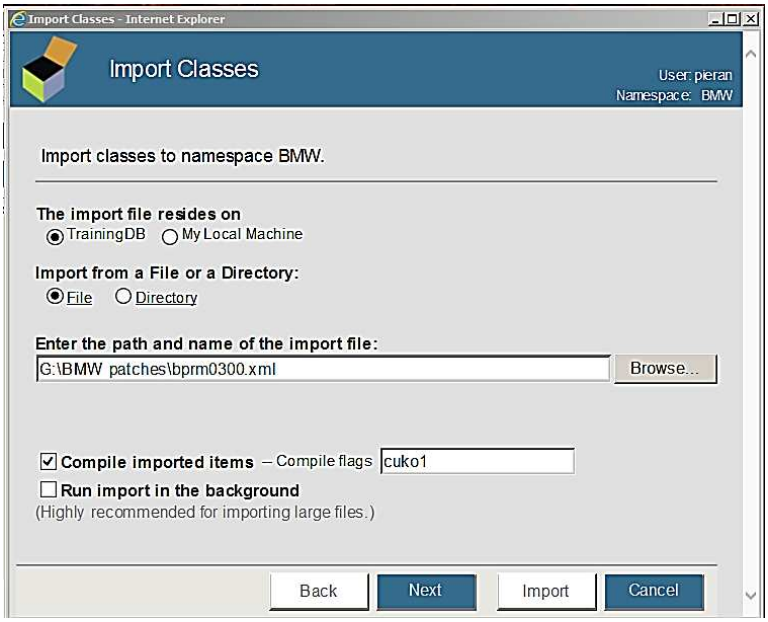

Figure 9-16: **Import Classes** window

4. Click **Browse** and navigate to the **bprm*nnnn*.xml** file in the folder where it was saved as described in Section 3.0. Select the **bprm*nnnn*.xml** file and click **Next**.

5. Next, a listing (Figure 9-18) will be displayed showing the contents of the XML file.

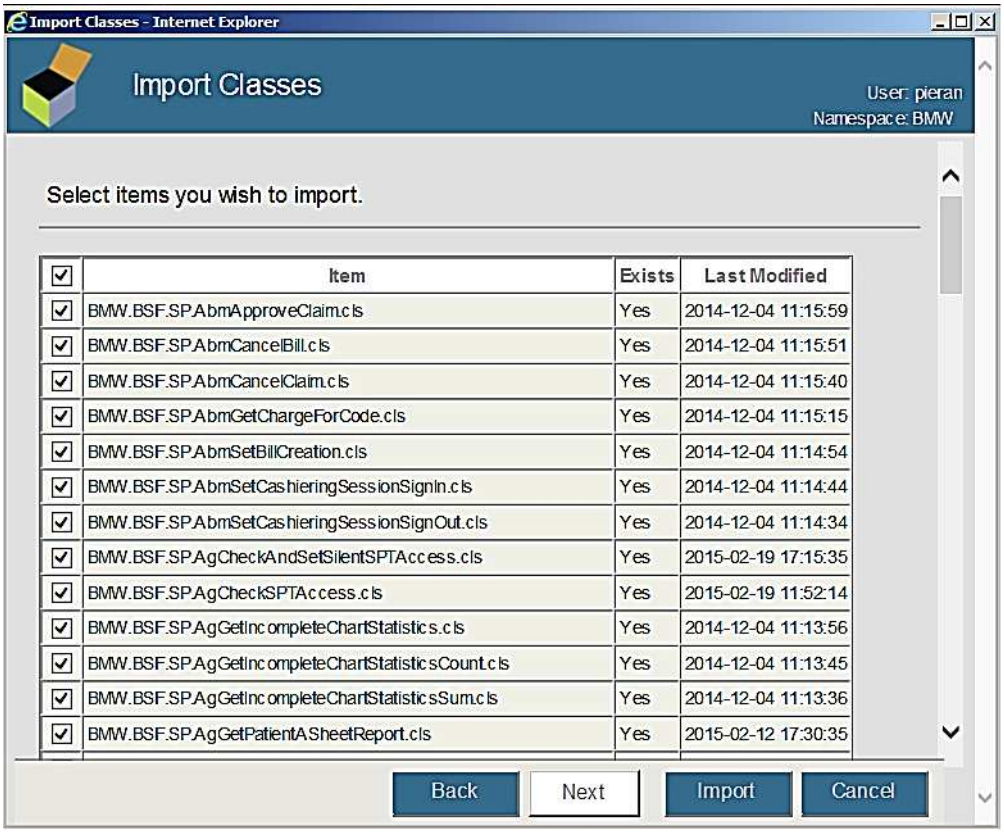

Figure 9-17: **Import Classes** window - Content listing

6. Click **Import**. After a few moments of processing, a listing of the imported classes will be displayed. Figure 9-19 shows an example of a typical listing.

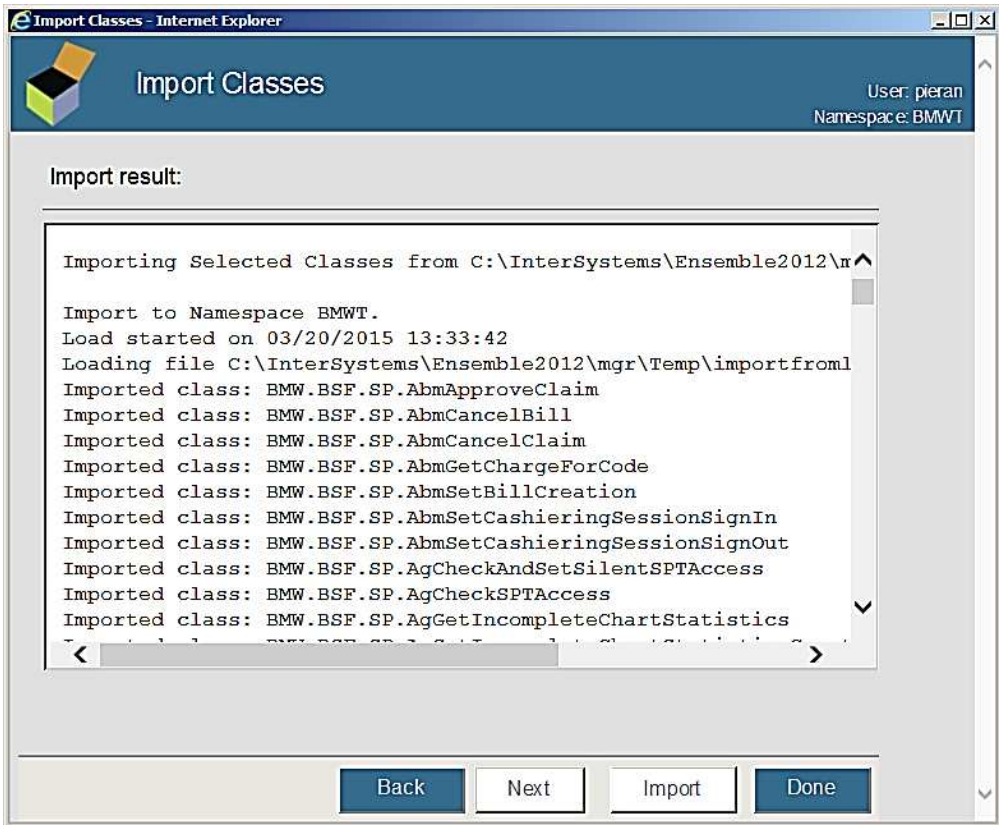

Figure 9-18: **Import Classes** window - Import listing

7. Scroll to the bottom of the listing to confirm the **Load finished successfully** message displays (Figure 9-20).

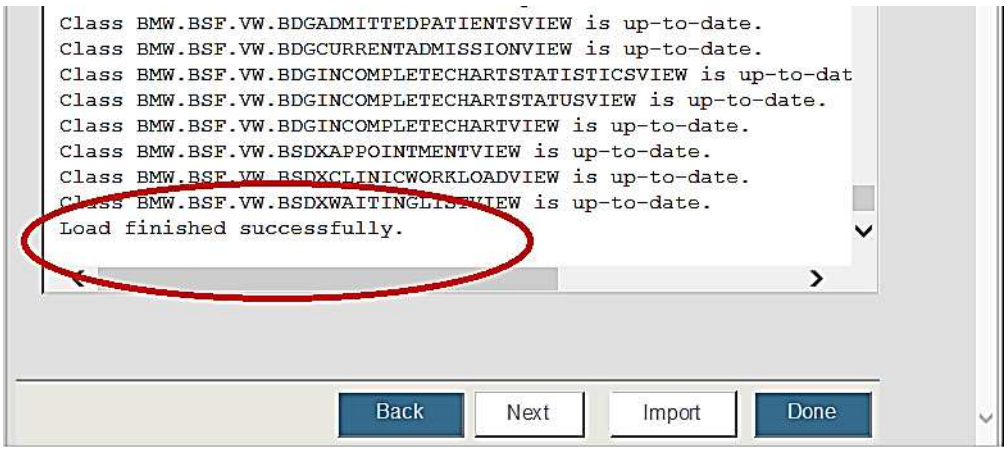

Figure 9-19: **Import Classes** window - Load finished successfully

The importation of the BPRM XML file is now complete.

9.6 Purge the Previous SQL Queries

To purge any previous SQL queries:

1. From the Ensemble/Cache **System Management Portal Home** window, click **System Explorer** > **SQL** > **Browse SQL Schemas**.

2. On the left side of the window displayed select your RPMS database. In the example shown in Figure 9-21, **EBCI** is selected. Your database will likely have a different name.

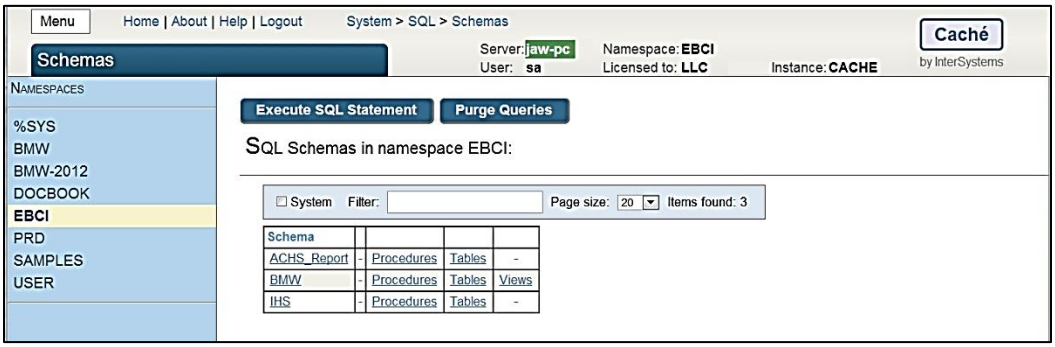

Figure 9-20: Purge Queries - Ensemble 2012 systems

3. Click **Purge Queries**.

9.7 Start the BPRM Web Site on the Application Server

As a final action, re-start the BPRM (Moonwalk) web site. Follow the steps outlined in Section 9.1, but select the **Start** option in Step 3.

The installation of the BPRM patch or update is now complete.

Note:	Please review the additional steps for disabling the IIS Manager Logging feature in the **Appendix E: Disable Logging in IIS Manager** section.

Appendix A: Running the Application Installer from the Command Prompt

In cases where you do not have sufficient privileges to install the BPRM application, an error message similar to the one shown in Figure A-1 displays.

Figure A-1: Insufficient privileges error message

If this happens, it will be necessary to install the application as an Administrator:

1. Navigate to **C:\Windows\system32** on your application server.
2. Locate the cmd.exe file, right-click, and select **Run as Administrator**.
3. In the Command Prompt window displayed, type this command to change to the disk and directory where the BPRM application installer file is located. In this example, the file is located on drive **D:** in the **EnsembleDatabases\bprm** folder. On your system, this location will likely be different.

```
C:\Windows\system32>D:

D:\>

D:\>cd EnsembleDatabases\bprm

D:\EnsembleDatabases\bprm>
```

4. At the resulting prompt, type the name of the installation file (**bprm0300.msi** in this example) and press Enter:

```
D:\EnsembleDatabases\bprm>bprm0300.msi
```

This will launch the **BPRM setup Wizard** and at that point you can follow the steps described in Section 8.1.

Appendix B: Running Multiple Instances of BPRM

For testing purposes, it may be desirable to run multiple instances of BPRM. To set up multiple instances of BPRM:

1. Create a new application pool as described in Section 5.7.1, using a unique name for your test site (i.e., BetaMoonwalk or TestMoonwalk).

2. Create a new folder (also with a unique name for your test site) as described in Section 5.7.2.

3. Add a new website as described in Section 5.7.3, using the newly created application pool and folder. Also change the port number in order to avoid conflict with the original Moonwalk website.

4. Deploy the new instance of the BPRM application by following the steps shown in Section 8.1, but select the test website and application pool during the installation process.

Appendix C: Global Mappings

In addition to the BPRM suite, it is possible for other RPMS applications to use Cache classes and global data stored in the BMW database (CACHE.DAT). In these cases, global mapping must be established between the BMW database and RPMS database.

> **Note:** These steps are not required for using BPRM, but may be needed for other RPMS applications. There is no need to perform the global mapping unless directed to do so in the documentation provided with the application.

To perform global mapping:

1. Browse to the **Namespaces** window of the **Ensemble Management Portal** following this path:

Home > System Administration > Configuration > System Configuration > Namespaces

1. A **Namespaces** window similar to Figure C-1 displays. Click **Global Mappings** in the row corresponding to your RPMS *production* database. This example shows the ECBI database, an RPMS production database. Your database will have a different name, and potentially a different name for each site. To reiterate, this will be your RPMS *production* database, not the BMW database you created when you installed BPRM.

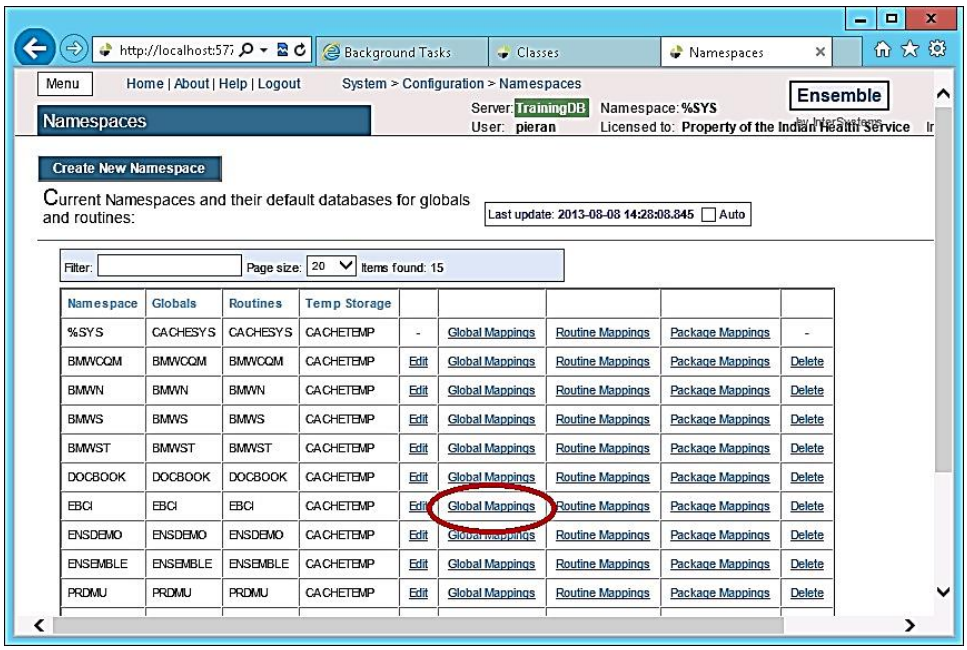

Figure C-1: **Namespaces** window with **Global Mappings**

2. In the **Global Mappings** window shown (Figure C-2), click **New Global Mapping** to display the **Global Mappings** dialog box.

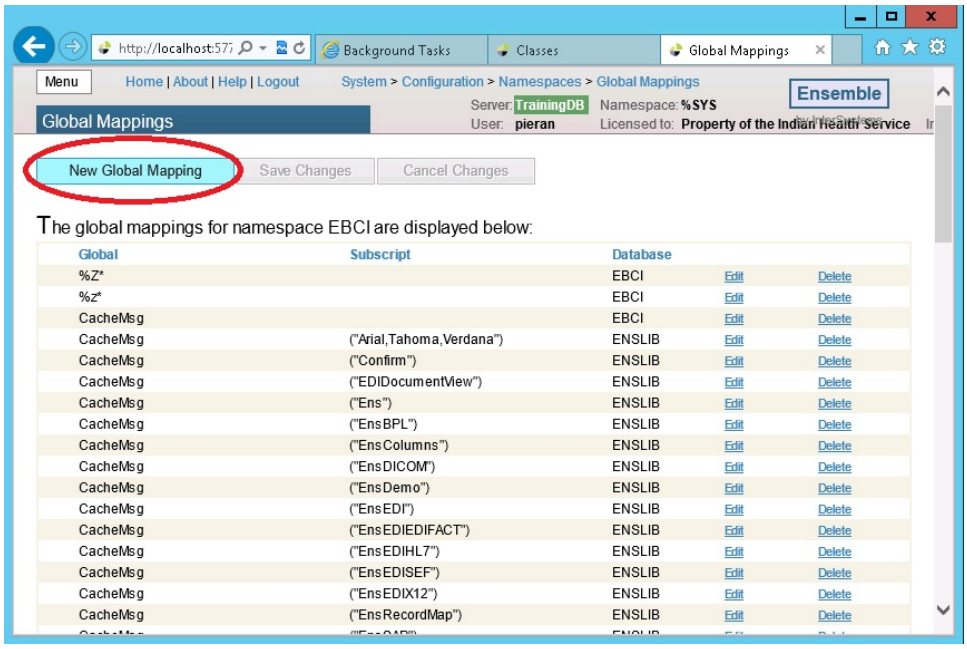

Figure C-2: **Global Mappings** window

3. In the **Global Mapping** dialog box (Figure C-3), select **BPRM** as the **Global database location**, type **BMW** as the **Global name,** and click **OK**.

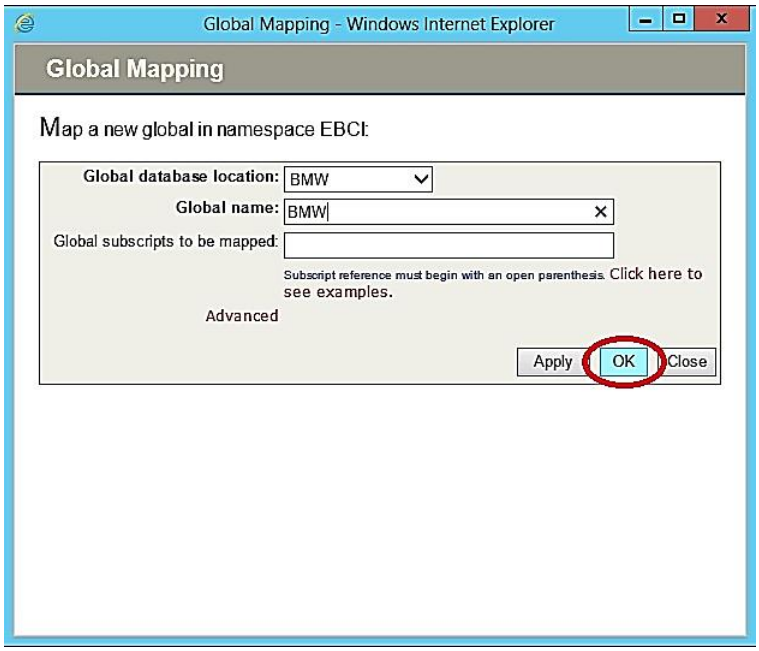

Figure C-3: **Global Mapping** dialog box

4. Click **Save Changes** in the confirmation window displayed (Figure C-4) to complete the global mapping operation.

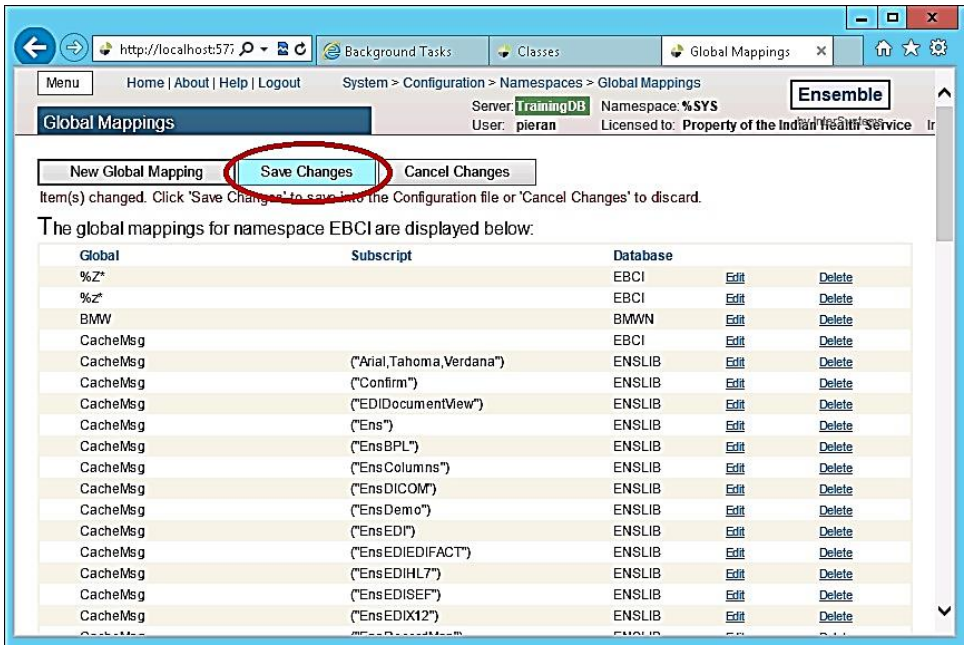

Figure C-4: **Global Mappings** confirmation window

Appendix D: Application Server Specification Example

Table D-1 shows the specifications for a typical application server capable of running the BPRM application suite. These specifications only represent an example and are not to be considered a stringent specification.

This example is from the Dell web site. At the time of initial publication of this manual, the total cost for this application server (including Windows Server 2008 software) was approximately $3,800.00.

Table D-1: Typical Application Server Specification Example

Catalog Number/Description	Product Code	Qty	SKU	ID
PowerEdge M520: PowerEdge M520 Blade Server	M520G	1	[225-3012]	1
Operating System: Windows Server 2008 R2 SP1, Standard Edition,x64, Includes 5 CALS	WS8SE5C	1	[421-5433]	11
OS Media Kits: No Operating System Media Kit	NOSDOC	1	[420-1908]	26
Onboard NIC Type (Fabric A): On-Board Broadcom 5720 Quad Port 1GBE	OBNIC	1	[331-7322]	12
Shipping: Shipping Material, Individual Blade, PE M520	SHIPGRP	1	[331-7322]	1500
Chassis Configuration: Serial-Attach SCSI Backplane	SAS	1	[331-4358]	1530
Cooling: Fresh Air Cooling	FRESHA	1	[331-7256]	1531
Processor: Intel® Xeon® E5-2407 2.20GHz, 10M Cache, 6.4GT/s QPI, No Turbo, 4C, 80W, Max Mem 1066MHz	E52407	1	[319-0019] [331-7255]	1550
Additional Processor: Intel® Xeon® E5-2407 2.20GHz, 10M Cache, 6.4GT/s QPI, No Turbo, 4C, 80W	2E52407	1	[319-0028] [319-0084] [331-7255]	1551
Memory DIMM Type and Speed: 1333 MHz RDIMMs	1333RD	1	[331-4422]	1561
Memory Configuration Type: Performance Optimized	PEOPT	1	[331-4428]	1562

Catalog Number/Description	Product Code	Qty	SKU	ID
Memory Capacity: 4GB RDIMM, 1333 MT/s, Low Volt, Single Rank, x4 Data Width	4R3LSR	2	[317-9649]	1560
RAID Configuration: Hardware RAID 1	MSSR1	1	[331-7249]	1540
RAID Controller: H310 Controller	H310	1	[331-4365]	1541
Hard Drives: 146GB 15K RPM SAS 6Gbps 2.5in Hot-plug Hard Drive	146A15H	1	[342-3493]	1570
Embedded Systems Management: iDRAC7 Enterprise for Blades with Vflash, 8GB SD card	IDRENV8	1	[342-1413] [421-5357]	1515
System Documentation: No Systems Documentation, No OpenManage DVD Kit	NODOCS	1	[310-5171]	1590
Hardware Support Services: 3Yr Basic Hardware Warranty Repair: 5x10 HW-Only, 5x10 NBD Onsite	U3OS	1	[939-7067] [939-7187] [939-7307] [994-4019] [995-9091] [995-9911]	29
Installation Services: No Installation	NOINSTL	1	[900-9997]	32
Proactive Maintenance: Maintenance Declined	NOMAINT	1	[926-2979]	33

Appendix E: Disable Logging in IIS Manager

The Internet Information Services (IIS) manager is setup by default with a Logging feature which allows it to capture certain types of requests to log files in the IIS installation folder. We recommend disabling this logging feature for the Moonwalk websites as it may result in storage issues if the log file is not maintained or monitored.

The following steps show how to disable the Logging feature for each Moonwalk website setup at your site. This information can also be found on the Microsoft website at:

https://technet.microsoft.com/en-us/library/cc754631%28v=ws.10%29.aspx

1. From the Windows **Start** menu, select **Administrative Tools**.

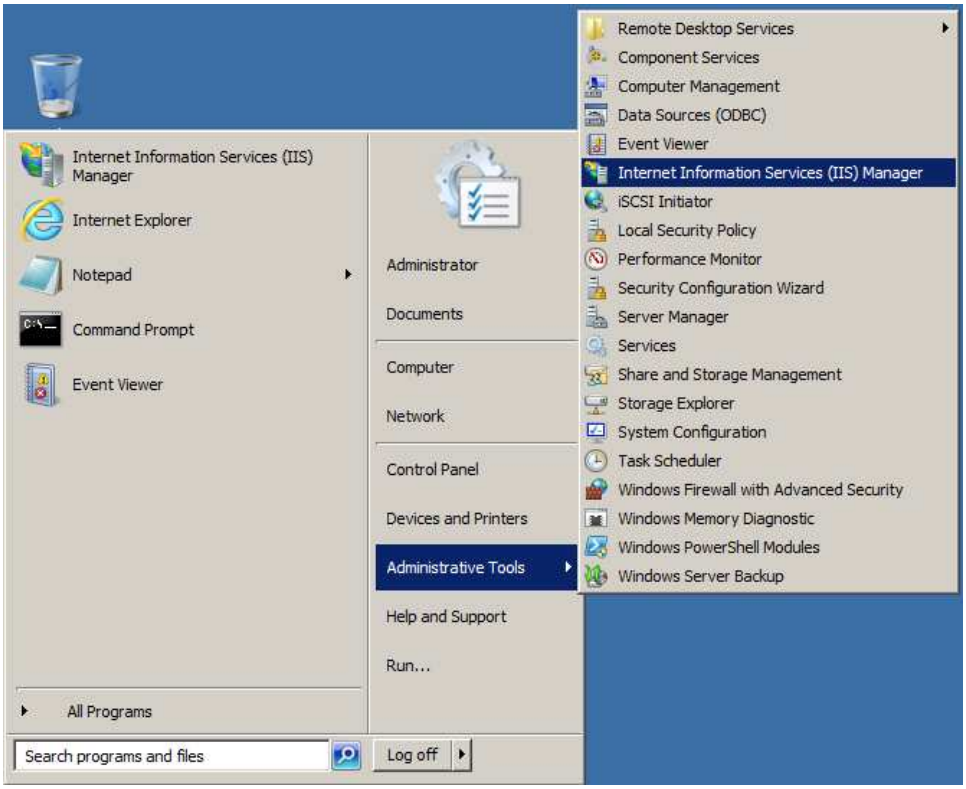

Figure E-1: Opening **Internet Information Services (IIS) Manager**

2. Select **Internet Information Services (IIS) Manager** to display the IIS Management Console.

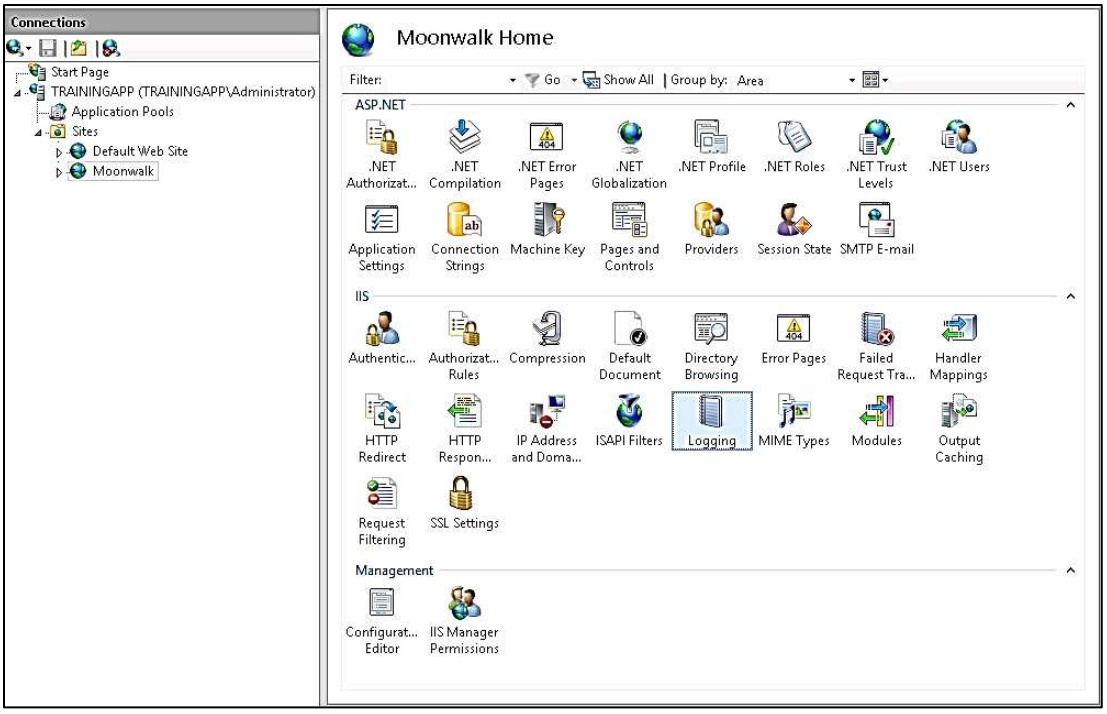

Figure E-2: **IIS Management** Console

3. Select the **Moonwalk** website in the left pane.

4. Double-click **Logging** to display the **Logging** dialog box.

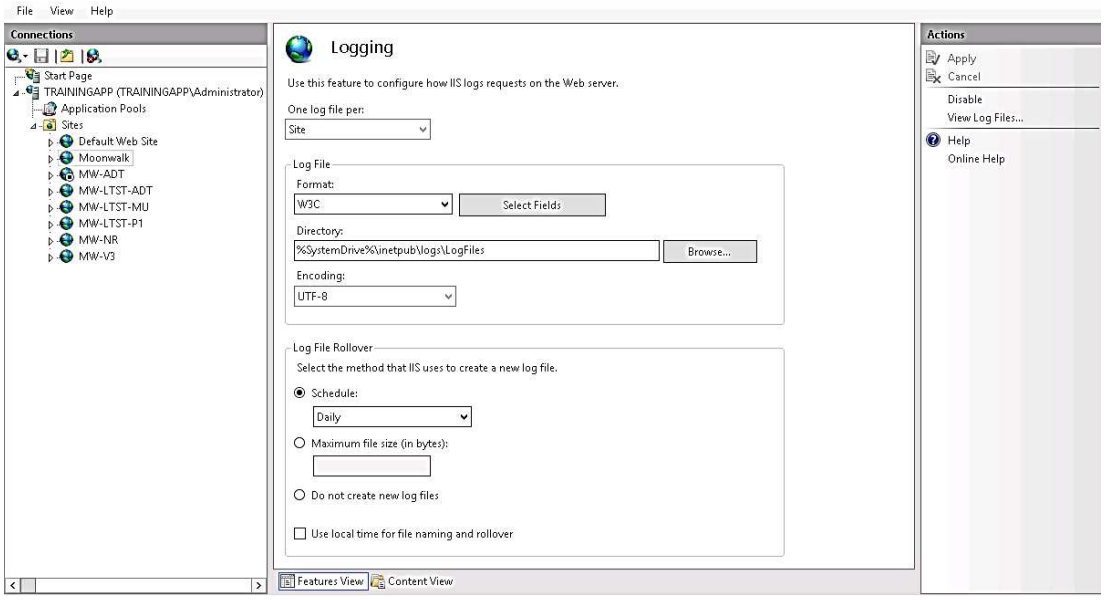

Figure E-3: **Logging** window

5. Click **Disable** in the **Actions** pane.

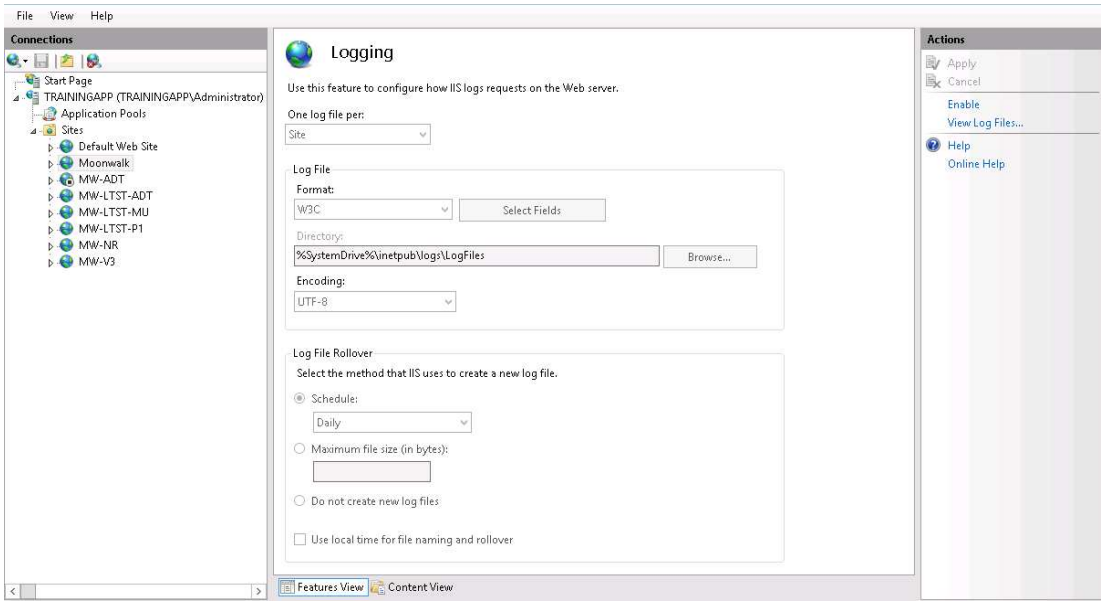

Figure E-4: Disabled **Logging** window

Acronym List

Acronym	Term Meaning
BPRM	Practice Management Application Suite
CRUD	Create, Read, Update, and Delete
IHS	Indian Health Service
IIS	Internet Information Service
PHR	Personal Health Record
RPMS	Resource and Patient Management System
SSL	Secure Sockets Layer
WCF	Windows Communication Foundation

Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

Phone: (888) 830-7280 (toll free)

Web: http://www.ihs.gov/helpdesk/

Email: support@ihs.gov