

RESOURCE AND PATIENT MANAGEMENT SYSTEM

Practice Management Application Suite

(BPRM)

Installation Guide and Release Notes

Version 4.0 Patch 2 February 2024

Office of Information Technology Division of Information Technology

Table of Contents

1.0	Releas	e Notes	1
2.0	Installation Notes		
	2.1 2.2	Contents of DistributionRequired Resources	3
	2.2.1	Standalone Application Server Resources	
	2.2.2 2.2.3	BPRM Server Disk Resources	
	2.2.3	Workstation Resources Before You Begin: Installation Issues	
	2.4	Prerequisites	
	2.4.1	HealthShare Prerequisites	4
	2.4.2	BPRM Prerequisites	
	2.4.3	RPMS 'HFS' Device Prerequisite	
3.0		ation Overview	
	3.1	Upgrading from BPRM 3.x Or a First-time install	
	3.2	Upgrading from BPRM 4.x	
4.0	Installation Instructions: First-Time Install		
	4.1	Acquire the SSL Certificate	
	4.1.1 4.1.2	· ·	
5.0		Application Server Installation and Configuration	
0.0	5.1	Microsoft .NET Framework 4.8 Installation	
	5.2	Internet Information Services 10 Installation (Windows Server 2016	
	5.3	Operating System) Install the SSL Certificate	
	5.4	BPRM Website Setup	
	5.4.1	Add the Application Pool	
	5.4.2	Create a BPRM Folder	
	5.4.3	Add the New Site	
6.0		Database Server Installation and Configuration	
		Assumptions	
	6.2 6.2.1	Importing a New BPRM XML File Disable Read Only	
	6.2.2	Import the BPRM XML File	
	6.3	Cache User Creation	32
	6.3.1	Create the BPRM User	
	6.3.2 6.3.3	Assign User Roles Verify XML Import and Installation	
7.0		•	
7.0	Applic	ation Deployment to the Web Server	ა9

7.1	Deploy the BPRM Application	39	
7.2	Adding a Database After the Installation	46	
7.3	Menu and Security Keys	51	
7.4	Open the BPRM Application		
7.5	Verify Client/Server Machine Date Time	54	
Appendix A	Run the Application Installer from the Command Prompt	56	
Appendix B	Disable Logging in IIS Manager		
Appendix C	Run Multiple BPRM Web Applications on a Single Server	60	
Acronym Lis	t	61	
Contact Information			

Preface

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

BPRM is a browser-enabled graphical user interface (GUI) 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, BPRM. 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, provided by BMW, 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/HealthShare**.

1.0 Release Notes

The following describes the changes made in BPRM v4 patch 2:

- 91282: BPRM-SCH-Make Calendar (date selector) sticky on scheduling workspace screen
- 92124: BPRM-REG-Allow Patient Appt Check-In from Appt Tab for users with appropriate access
- 98386: BPRM-ADT-Display admission comments on patient admission tile in ward workspace
- 98188: BPRM-ADT-Movement Times & Blank Submission error during Transfer [INC0360418]
- 98704: BPRM-REG-fix 'Access Date' Typo
- 96804: BPRM-REG-Display insurer phone number to Insurance Coverage screen [INC0334503]
- 96030: BPRM-REG-Add language proficiency & Interpreter Required required fields to Register Patient screen [INC0333759]
- 97607: BPRM-REG-Enable Appts tab (Registration module) for non-scheduling users holding 'SDZ ELIG REPORT' Key
- 97269: BPRM-REG-Display Record Flag narrative/details in Patient Profile so that all Registration users can see the details information
- 96762: BPRM-REG-Context menu of an appointment for a prohibited clinic, not assigned to the user, should not be blank [INC0338149]
- 97859: BPRM-REG-Display appts across all Divisions on Appts Tab in Registration module [INC0346495]
- 62330: BPRM-REG-Include advance directive and notice of privacy practice to error/warnings [CR_12272]
- 92841: BPRM-REG-Make 'copy Emergency Contact' & 'copy Next of Kin' more user intuitive on Patient Profile
- 97439: BPRM-REG-PPN-Save patient preferred name in UPPERCASE only
- 96201: BPRM-REG-Allow users with 'SDZ ELIG REPORT' Key to print appt Letters, on Patient Appt tab, for users with no scheduling access
- 99222: BPRM-REG-Make NPP & Veteran data entry more user intuitive
- 95990: BPRM-REG-Fix the issue with 'Updating name for ER contact or NOK deletes all other info' [INC0333559]
- 96953: BPRM-SCH-Clear 'copied appt' on logout or Division switch

- 92117: BPRM-SCH–Overhaul Clinic Availability Configuration
- 98130: BPRM-SCH-Clinic Availability Configuration disallow user from adding Access Block with same start and end time [INC0349949]
- 98382: BPRM-SCH-Clinic Schedule Report-Usability enhancements
- 96077: BPRM-SCH-Indicator for Walk-In Appt on appt tile/hover on scheduling workspace screen
- 96213: BPRM-SCH-Allow date change on appt checkout (effects appt going over midnight) [INC0334747 / INC0359318]
- 96056: BPRM-SCH-Modify Clinic Schedule Report to print each clinic on separate page [INC0333986]
- 98131: BPRM-SCH-Upon re-login (logout then login) to BPRM; take user to their last selected division rather than default division
- 95429: BPRM-SCH-Search for Clinic Stop Code using Code or name
- 91280: BPRM-SCH-Select multiple clinics for Reports / Waiting List report modifications
- 98383: BPRM-SCH-Settings-> Clinic Search-> retain last filter and page selection after editing clinic settings
- 97247: BPRM-SCH-Do not allow user to add inactive clinics to Scheduling workspace
- 97507: BPRM-SCH-WAIT LIST-fix quick waitlist Drag-n-drop issues [INC0340729] / Add Patient to waitlist via appt Context Menu & Check out screen
- 96805: BPRM-Search RPMS Device Printers by mnemonic/synonym [INC0331070]

2.0 Installation Notes

Prefix: BPRM Current Version: 4.2

2.1 Contents of Distribution

Table 2-1: Distributed Files with Descriptions

File	Description
bprm0400.02.msi	BPRM Application Installer
bprm0400.02.xml	BPRM Data Description File
bprm0400.02i.pdf	Version 4.2 Installation Guide and Release Notes
bprm0400.02t.pdf	Version 4.2 Technical manual
bprm0400.02u_Registration.pdf	Registration User Manual v4.2
bprm0400.02u_Scheduling.pdf	Scheduling User Manual v4.2
bprm0400.02u_ADT.pdf	ADT User Manual v4.2
bprm0400.02u_Overview.pdf	Overview User Manual v4.2

2.2 Required Resources

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® Server 2016 x64 bit (or later)
- Microsoft IIS® 10 (WebSocket protocol required)
- Microsoft .NET Framework 4.8 (or later)
- 8+ processor cores running at 2.0 GHz or faster (for site)
- 12+ processor cores running at 2.4 GHz or faster (for area office)
- 8+ GB RAM running at 1333 MHz (for site)
- 16+ GB RAM running at 1333 MHz (for area office)
- 20 GB minimum free disk space

2.2.2 BPRM Server Disk Resources

Servers running the BPRM application require a minimum of **5 GB** of free disk space.

2.2.3 Workstation Resources

The following resources are recommended for any workstations (user machines) 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 10 or above
- Microsoft Edge / Google Chrome

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 HealthShare Prerequisites

BPRM v4.2 currently support only **HealthShare 2017.2.x**. Be aware the examples in this installation manual reflect **HealthShare 2017.2**. If running a different version, some of the screens may differ slightly from those shown here.

A BMW-specific **CACHE.DAT** file (Version 2020.3 or later) must be loaded into the **HealthShare** server **BMW** namespace. Acquire this file from the **IHS FTP** or **RPMS** website; it is not delivered as part of the installation package. Refer to the latest *BMW CACHE.DAT Installation Guide* for more information.

2.4.2 BPRM Prerequisites

The following CACHE.DAT file must be installed:

• BMW Version 2020.3 or above

The following KIDS must be installed:

- PIMS v5.3 p1019
- AG v7.1 p17
- AUM v20 p4
- AUT v98.1 p28
- AUT v98.1 p29

- XU v8.0 p1018 or later
- DI v22 p1018 or later
- BJPC v2.0 p10
- AVA v93.2 p25
- AVA v93.2 p26
- AUPN v99.1 p28
- BSDX v3.0

2.4.3 RPMS 'HFS' Device Prerequisite

A fully functional BPRM v4 or higher requires the RPMS HFS device to be properly configured. BPRM reports may not work when PRMS HFS device is not properly configured.

BPRM v4 or higher connecting to an RPMS system would need the RPMS system to:

- 1. Have a device named 'HFS' in device file
- 2. Have the HFS device \$I value point to a valid directory/folder with or w/o filename. Either of the below are valid \$I values:
 - a. C:\temp\hfs.txt
 - b. C:\temp\

To make appropriate changes to the HFS device use RPMS menu:

• 'Device Management'-> 'Device Edit'-> 'Host File Server Device Edit'

```
EDIT A HOST FILE SERVER DEVICE
                                                LOCATION: HOST FILE SERVER
     $I: G:\HFS\BPRMA\HFS.txt
Alt $I:
SUBTYPE: P-OTHER
       ASK PARAMETERS: YES
                                               MARGIN WIDTH: 132
ASK HOST FILE: YES
ASK HFS I/O OPERATION: YES
                                                PAGE LENGTH: 64
                                           VOLUME SET (CPU): BPRMA
   OPEN PARAMETERS: "WNS"
 CLOSE PARAMETERS:
 PRE-OPEN EXECUTE:
POST-CLOSE EXECUTE:
           QUEUING:
                                         SUPPRESS FORM FEED:
```

Figure 2-1: Host File Server Device Edit dialog

3.0 Installation Overview

The BPRM v4.2 installation requires three files. The **bprm0400.02.xml** data description file and the **bprm0400.02.msi** application installation file are specific to the BPRM suite. These two files are included in the BPRM distribution package.

Additionally, a **BMW CACHE.DAT** file (contained in a zipped file) specific to the HealthShare version is also necessary. This **BMW CACHE.DAT** file is used by BPRM, as well as other **Certified Health IT 2015 IHS** applications and is not included as part of the distribution package. It must be acquired separately from the IHS FTP or RPMS website.

Save the **bprm0400.02.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 **bprm0400.02.msi** file to a folder that is accessible to your application server(s).

3.1 Upgrading from BPRM 3.x Or a First-time install

BPRM v4.2 can be installed on the same server as **BPRM 3.x**, but it is recommended to create a new website and application pool for v4.2.

BPRM 3.x can be uninstalled once v4.2 is installed successfully. Site should only use a single version of BPRM at a time. Having users use both **3.x** and **4.x version** at the same time creates data inconsistency issues.

Follow the instructions in Section 4.0 through Section 7.0 to install **BPRM v4.2** for the first time at your site. Go through all the steps even if the site already has/had a **BPRM v3.x server setup**. There are updates to the installation steps and additional components need to be installed for IIS.

3.2 Upgrading from BPRM 4.x

Any BPRM v4.x installation must be uninstalled before proceeding to install this version. Site may choose to make a copy of 'appsettings.json' file (resides typically at C:\Inetpub\BPRM\) and place it someplace else on the application server; if the site plans on importing database connection settings from it—during the install process of this build/patch.

Follow the instructions in Section 6.0 and onward.

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)
- Application Installation (Section 7.0)

The application operates in a web-based environment; there is no separate installation necessary on workstations other than the items listed in Section 2.2.3.

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 this section (Acquire the SSL Certificate).

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**, use the following steps to acquire your **SSL** certificate:

1. Click Start > Administrative Tools > Internet Information Services (IIS) Manager (Figure 4-1).

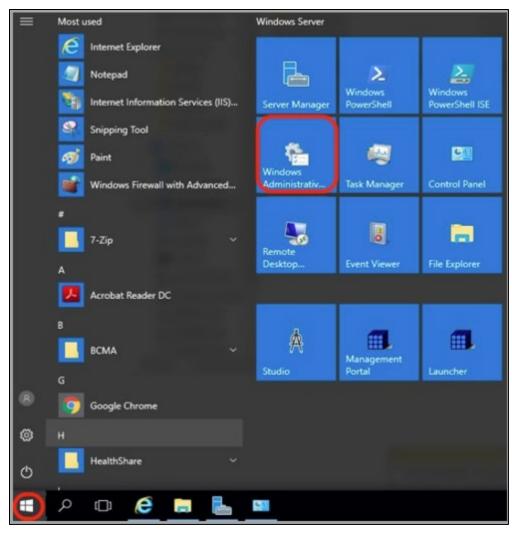


Figure 4-1: Windows Start menu, Administrative Tools option

2. Click the **server name**. The **IIS Manager** dialog (Figure 4-2) displays.



Figure 4-2: Internet Information Services (IIS) Manager

3. In the **center panel** (Figure 4-3), double-click **Server Certificates** in the **Security** section (near the bottom of the panel).

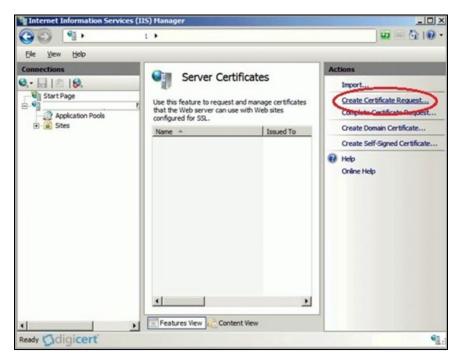


Figure 4-3: Internet Information Services (IIS) manager-Server Certificates

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

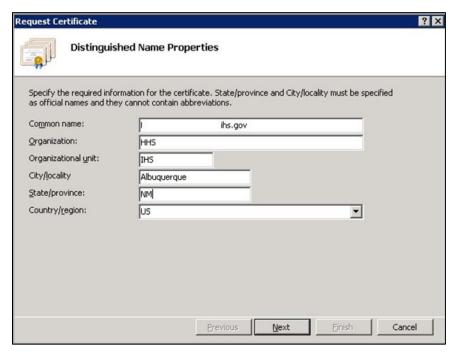


Figure 4-4: Request Certificate Wizard-Distinguished Name Properties

- 5. In the **Distinguished Name Properties** dialog (Figure 4-5), enter the information as follows:
 - Common Name: The name through which the certificate will be accessed (usually the fully qualified domain name of the machine).
 - 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.

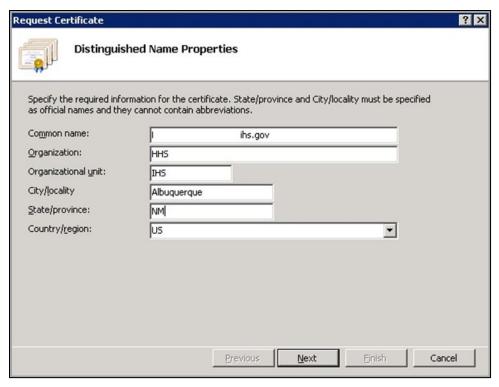


Figure 4-5: Request Certificate Wizard-Distinguished Name Properties

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

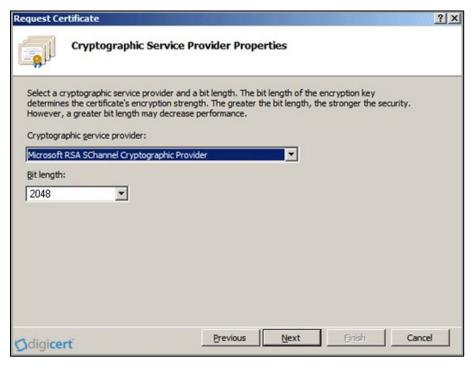


Figure 4-6: Request Certificate Wizard-Cryptographic Service Provider Properties

- 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 (Figure 4-7) displays.

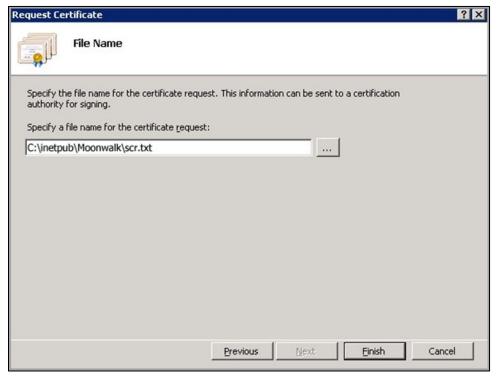


Figure 4-7: Request Certificate-File Name dialog

- 9. Type a path and file name for the certificate request file.
- 10. Make note of the chosen **filename** and the **save location**. You must 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.
- 11. Click Finish to save the SSL certificate request file.
- 12. E-mail the file to itsupport@ihs.gov.
- 13. Request the **SSL Certificate** in CER format for the BPRM application. A certificate is issued within 24 hours and emailed to the originator of the request.
- 14. Once the **certificate** is received, proceed with the BPRM installation as described in Section 5.0 through Section 7.0.

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 the certificate and proceed to the BPRM installation instructions in Section 5.0 through Section 7.0.

5.0 BPRM Application Server Installation and Configuration

5.1 Microsoft .NET Framework 4.8 Installation

To install the .NET Framework:

- Download .Net Framework 4.8 from the Microsoft download center at: https://go.microsoft.com/fwlink/?linkid=2088631
- 2. Double-click the **downloaded file** to run the **.Net Framework 4.8 setup**. The **License Terms** dialog (Figure 5-1) displays:

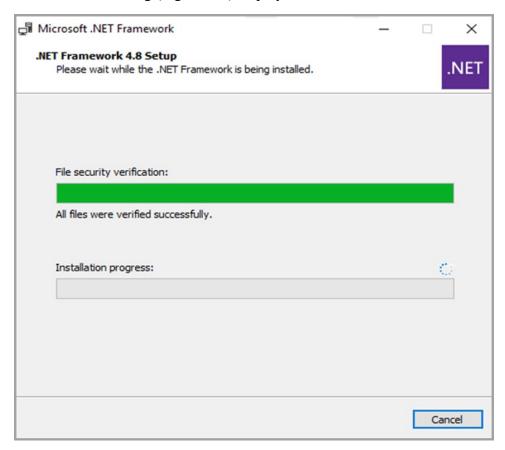


Figure 5-1: .NET Framework Installation dialog

- 3. Select the **I have read and accept the license terms** check box to accept the license agreement.
- 4. Click Install.
- 5. Respond to any **prompts** presented as the installation proceeds. When completed, the **Installation Is Complete** dialog (Figure 5-2) displays.

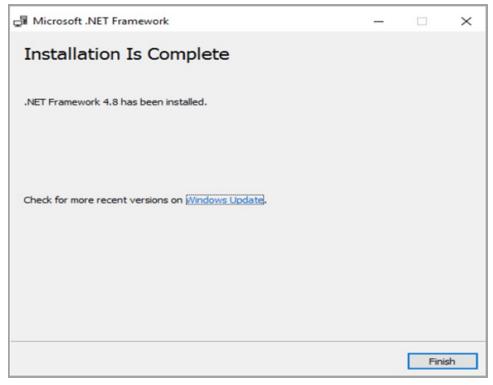


Figure 5-2: .NET Framework Installation Is Complete dialog

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

WARNING: 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.

5.2 Internet Information Services 10 Installation (Windows Server 2016 Operating System)

To install the Microsoft IIS:

1. From the **Windows Start** menu (Figure 5-5), select **Server Manager**.

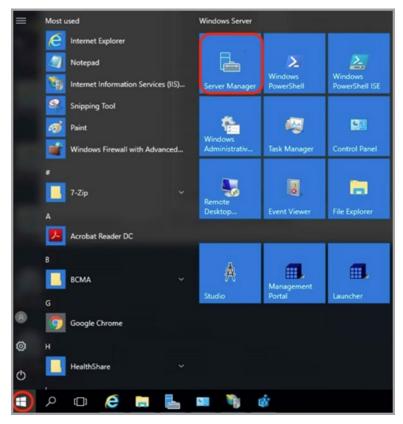


Figure 5-3: Start menu for Windows Server 2016 OS

The Server Manager window (Figure 5-6) displays.

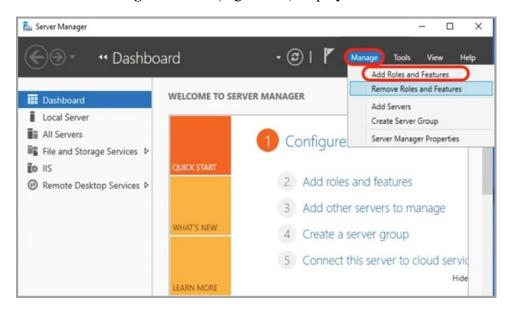


Figure 5-4: Server Manager window

2. Click Manage > Add Roles and Features.

- 3. Review the **Before You Begin** dialog, then click **Next**. The **Add Roles and Features Wizard** dialog displays.
- 4. Select the **Role-based** or **feature-based installation option** button (Figure 5-7), then click **Next**.

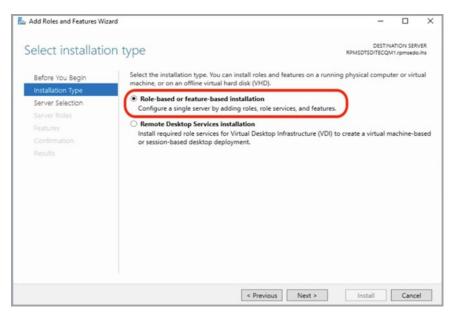


Figure 5-5: Add Roles and Features Wizard dialog

5. Select **Web Server (IIS)** on the **Server Selection** window. The **Select Server Roles** window (Figure 5-8) displays.

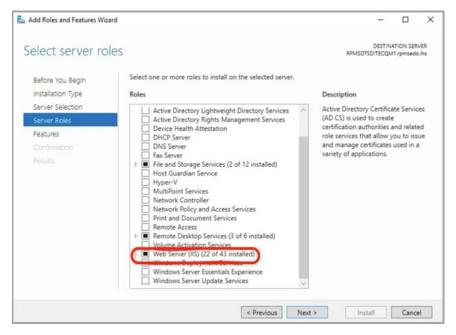


Figure 5-6: Select Server Roles window

6. Expand the **Web Server (IIS) role** and make the following selections. Figure 5-9 displays a portion of the selection.

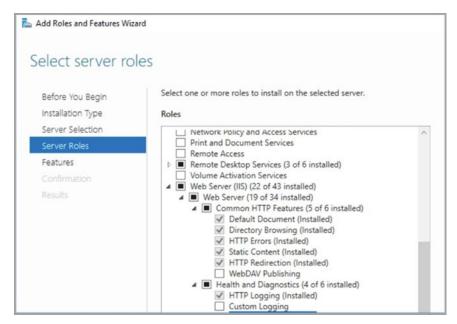


Figure 5-7: Select Web Server components

- 7. Enable the following **Web Server role services**:
 - Common HTTP Features:
 - Static Content
 - Default Document
 - Directory Browsing
 - HTTP Errors
 - HTTP Redirection
 - Application Development: (Figure 5-10)
 - ASP.NET (latest version)
 - NET Extensibility (latest version)
 - ISAPI Extensions
 - ISAPI Filters
 - WebSocket Protocol

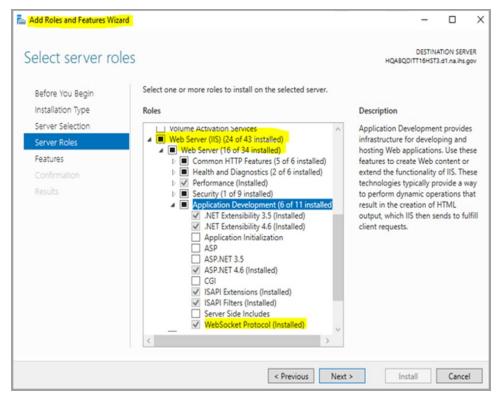


Figure 5-8: Select Web Server—ApplicationDevelopment components

- 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 Management Compatibility—IIS 6 Metabase Compatibility
- 8. Click **Next** to go to the **Features** tab.
- 9. In the **Features** area, make following selections: (Figure 5-11)
 - .NET Framework 3.5 Features
 - Net Framework 3.5
 - HTTP Activation

- Non-HTTP Activation
- .NET Framework 4.6 + Features
 - Net Framework 4.6 +
 - ASP.NET 4.6 +
 - WCF Services
 - HTTP Activation
 - Named Pipe Activation
 - TCP Activation
 - TCP Port Sharing

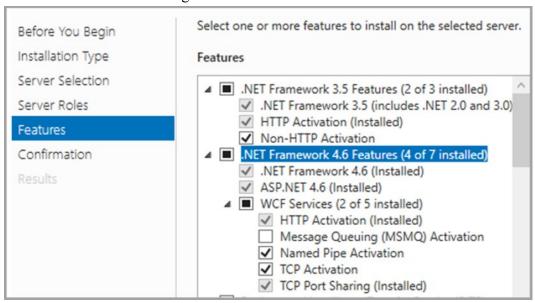


Figure 5-9: Select .Net Framework Features

- 10. Click **Next** to display the **Confirmation** dialog.
- 11. Click **Install** (Figure 5-12).

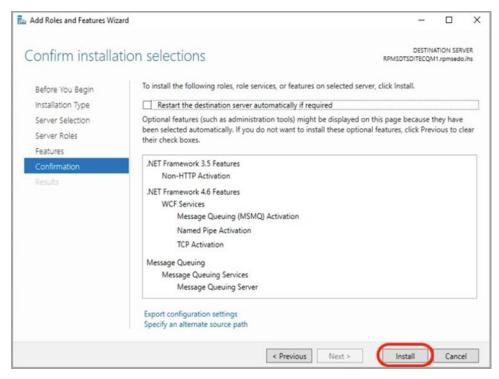


Figure 5-10: Confirm installation selections

12. Click **Close** after the installation is complete.

Note: Review the additional steps for disabling the IIS Manager Logging feature in Appendix B .

5.3 Install the SSL Certificate

To install the SSL server certificate:

- 1. From the Windows Start menu, select Administrative Tools.
- 2. Select Internet Information Services (IIS) Manager (Figure 5-13).



Figure 5-11: Internet Information Services (IIS) Manager

3. Click the **server name** in the left panel (Figure 5-14).

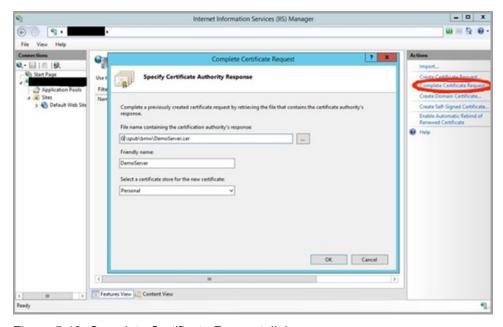


Figure 5-12: Complete Certificate Request dialog

- 4. Double-click **Server Certificates** in the **Security section** (near the bottom of the panel).
- 5. In the Actions panel (on the right), click Complete Certificate Request. The Complete Certificate Request dialog displays.

Note: The **Complete Certificate Request** must be completed on the same system where the Certificate Signing Request was generated (Section 4.1.1) to ensure the private key is correctly associated with the new certificate.

- 6. Click the **Ellipses** button () to browse to the location where the server certificate file acquired in Section 4.1 is saved.
- 7. In the **Friendly** name field, type the friendly name for the certificate. This name is intended for use for management of certificate stores on the server.
- 8. In the **Select a Certificate** store for the **Certificate** field, verify **Personal Store** is selected.
- 9. Click **OK** to complete the procedure.

5.4 BPRM Website Setup

This section can be skipped if this is an upgrade from BPRM 4.x setup and BPRM website and application pool already exists on the application server.

5.4.1 Add the Application Pool

To add the **Application Pool**:

1. Return to the **IIS Manager** opened in Section 4.1.1 and browse to **Application Pools** in the tree structure below your IIS node as shown in Figure 5-15.

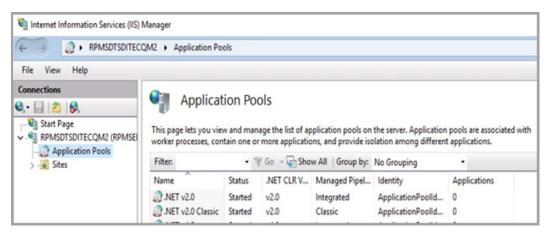


Figure 5-13: IIS Manager browsed to Application Pools

2. Right-click **Application Pools** and select Add Application Pool. The **Add Application Pool** dialog (Figure 5-16) displays.

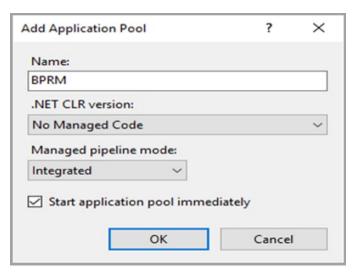


Figure 5-14: Add Application Pool dialog

- 3. In the Name field, type the name of the application pool (BPRM).
- 4. In the .NET Framework version: field, select No Managed Code.
- 5. Click **OK**.
- 6. Right-click the newly created **application pool** in **IIS Manager** and click **Advanced Settings**. A dialog similar to Figure 5-17 displays:

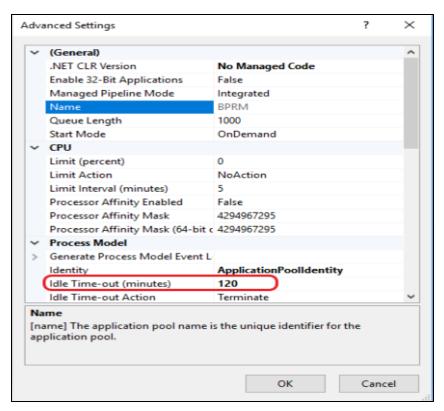


Figure 5-15: Application Pool Advanced Settings

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

5.4.2 Create a BPRM Folder

To aid in setting up the **BPRM website**, create a **C:\inetpub\BPRM**:

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

5.4.3 Add the New Site

To add the new website:

1. Right-click Sites in the Connections pane of the IIS Manager and select Add Web Site. The Add Web Site dialog (Figure 5-18) displays.

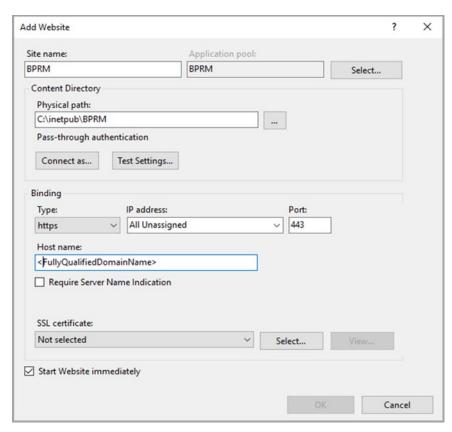


Figure 5-16: Add Web Site dialog

- 2. In the **Site name** field, type **BPRM**.
- 3. Click **Select** and select the **BPRM application pool** created in the previous steps.
- 4. In the **Physical Path** field, browse to the **C:\inetpub\BPRM folder** created in Section 5.4.2.

Note: Be aware that the location will be different if the folder was created on a different drive.

5. Under **Binding**, select **Type** as **https**.

Note: It is highly recommended that BPRM application be hosted over HTTPS protocol.

- 6. For IP address, select All Unassigned.
- 7. For **Port**, specify a **port number** ranging from **440 through 443**.
- 8. Select the **SSL certificate** installed in Section 5.4.
- 9. For **Hostname**, can be left blank OR put in the fully qualified name of the **machine** or **SSL certificate Issued** to value.

10. Select View to display the SSL certificate details (Figure 5-19 and Figure 5-20).

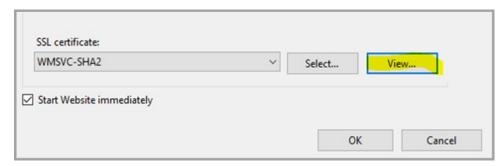


Figure 5-17: View SSL certificate

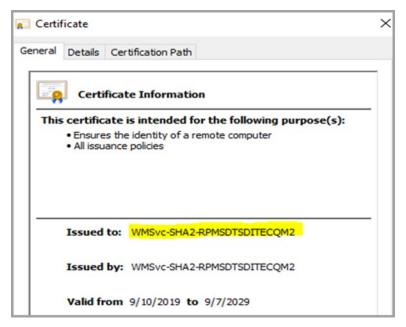


Figure 5-18: SSL certificate details

11. Click **OK** to save the changes and close the **Add Web Site** dialog.

6.0 BPRM Database Server Installation and Configuration

This section outlines the steps essential for setting up and configuring an IHS RPMS database server 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:

- **HealthShare** 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 user 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 acquired from the **IHS FTP** or **RPMS website**, as described in the *BMW CACHE.DAT Installation Guide*, is installed.

6.2 Importing a New BPRM XML File

A separate **XML** file is included with the release. Follow the steps in Section 6.2.1 through Section 6.2.2 to import a new **BPRM XML** file.

6.2.1 Disable Read Only

To import the **bprm0400.02.xml** file, user must set the **BMW database** to allow write access. If the database is set to **Read Only**, do the following:

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 BMW to open the edit database settings/configuration page.
- 3. In the window displayed, clear the **Mount Read-Only** check box.

Note: Once the patch is installed, you can re-enable **Read Only** mode by repeating these steps and selecting the **Mount Read-Only** check box.

6.2.2 Import the BPRM XML File

To import the bprm0400.02.xml file:

1. From the **HealthShare System Management Portal Home** window, click **System Explorer**, then **Classes**. The **Classes** dialog (Figure 6-1) displays.

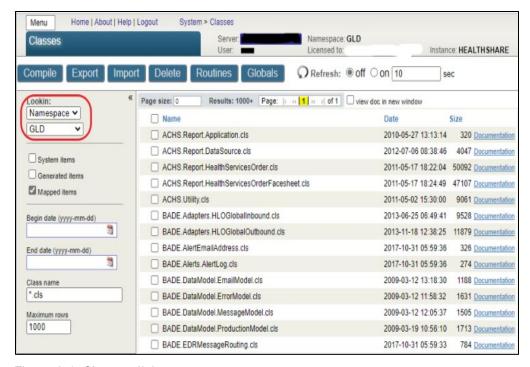


Figure 6-1: Classes dialog

- 2. Select the **RPMS** or **BMW namespace** in the **LookIn:** pane on the left side of the dialog.
- 3. Click **Import**. The **Import Classes** dialog (Figure 6-2) displays.

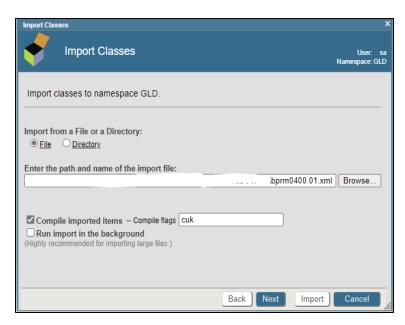


Figure 6-2: Import Classes dialog

- 4. Click **Browse** and navigate to the **bprm0400.02.xml** file in the folder where it is saved as described in Section 3.0.
- 5. Select the **bprm0400.02.xml** file and click **Next**.

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

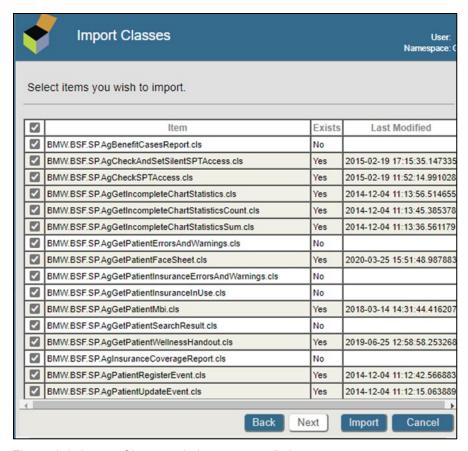


Figure 6-3: Import Classes window-content listing

- 6. Click **Import**. After a few moments of processing, a listing of the imported classes (Figure 6-4) displays.
- 7. Scroll to the bottom of the listing to confirm the **Load finished successfully** message displays (Figure 6-4).

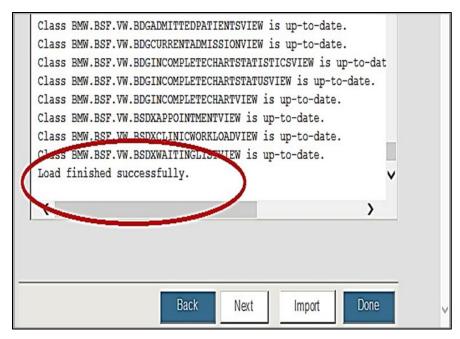


Figure 6-4: Import Classes window-Load finished successfully

At this point, the **BPRM XML installation** 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.

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 BPRM User

This step may be skipped if the site has **Moonwalk_user** already created for BPRM application. **Moonwalk user** can be used for BPRM v4 as well.

To create a new **BPRM user**:

1. Navigate to the user's 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 6-5).

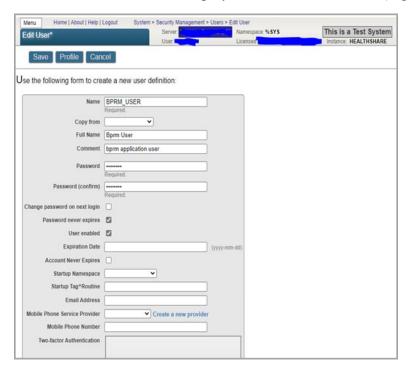


Figure 6-5: Edit User window

- 3. Type **BPRM 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 6-6) in the **Ensemble System Management Portal** following this path:

Home > System Administration > Security > Users.

2. Click **BPRM USER**, as shown in Figure 6-6.



Figure 6-6: Create New User window

- 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 the **Roles** tab.
- 6. Select %ALL from the Available column and move it to the Selected column by clicking the Right arrow.
- 7. Click **Assign** to assign the **%ALL** role to the **BPRM USER** account.

When complete, the **Edit User** window will look similar to that shown in Figure 6-7.

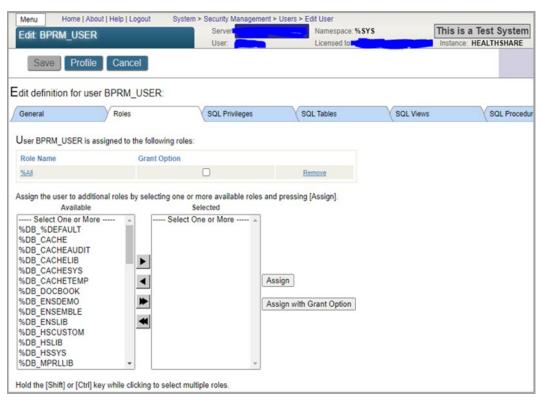


Figure 6-7: Roles tab in Edit User window–after changes

6.3.3 Verify XML Import and Installation

To verify the **XML** file has been imported and is readily available:

- From the HealthShare System Management Portal Home window, click System Explorer > SQL (you may need to click SQL twice).
- 2. Switch to the **RPMS namespace**. In the example shown in Figure 6-8, **PRECERT** is selected. Your site's **RPMS database/namespace** will likely have a different name.

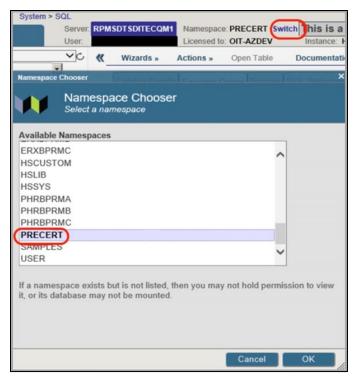


Figure 6-8: Namespace Chooser window

3. Open the **Schema** drop-down menu and select **BMW_BSF_SP**, as shown in Figure 6-9.



Figure 6-9: Expand the Schema menu

4. Expand **Procedures** as shown in Figure 6-10.

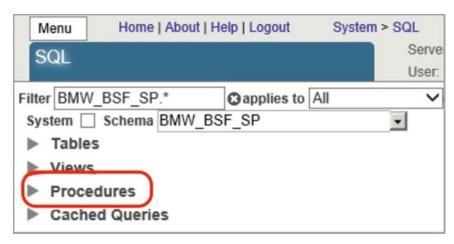


Figure 6-10: Expand Procedures

- 5. Scroll down to locate and select BMW BSF SP.Core AuthenticateUserV2Q.
- 6. Click **Run Procedure** as shown in Figure 6-11.

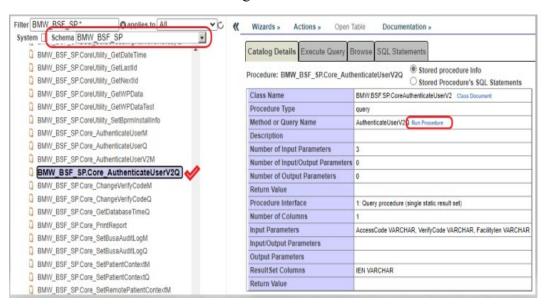


Figure 6-11: Run Procedure option

If the **HealthShare** version is compatible with the newly installed **BMW Cache classes**, the **Run Query** window (Figure 6-12) displays. The user does not need to put in any information (access/verify) here.

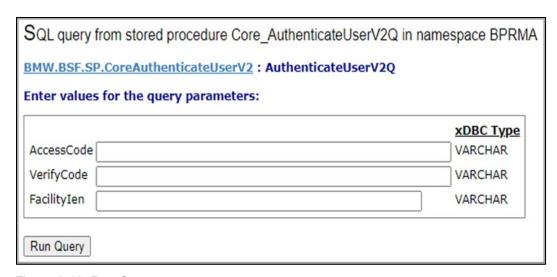


Figure 6-12: Run Query

If an error message displays, the **HealthShare version** running is not compatible with the newly installed **BMW Cache classes**.

7.0 Application Deployment to the Web Server

This section describes the steps for installing the BPRM application itself.

7.1 Deploy the BPRM Application

Note: Before proceeding with BPRM msi install, make sure **BPRM XML** has been installed (see Section 6.2).

To deploy the BPRM application:

- 1. Log on to the **application server** and browse to the location where the **BPRM Application Installer** file (**bprm0400.02.msi**) is stored.
- 2. Double-click the bprm0400.02.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.

Once the installer is started, the **BPRM setup wizard** (Figure 7-1) displays.



Figure 7-1: BPRM setup wizard dialog

3. Click **Next**. The **Destination Folder** dialog (Figure 7-2) displays.

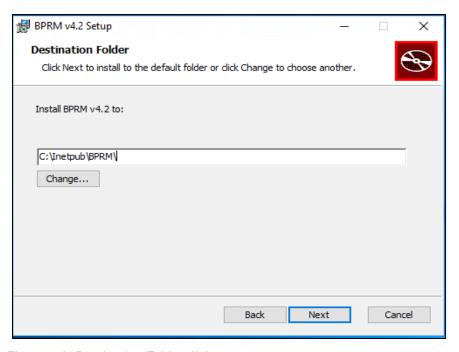


Figure 7-2: Destination Folder dialog

4. Click **Change** to choose the **BPRM website folder**, as created in Section 5.4.2, (Figure 7-3) and Select **OK**.

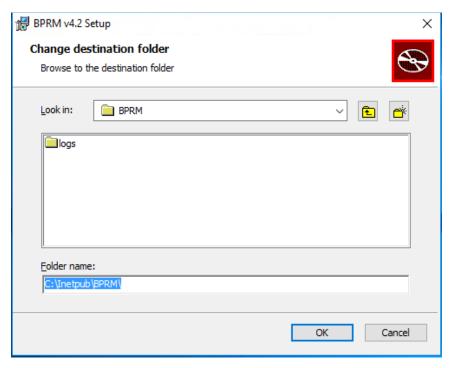


Figure 7-3: BPRM website folder

5. Click **Next** once the appropriate **Destination folder** (Figure 7-4) is selected.

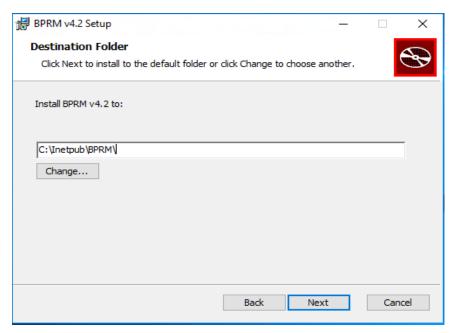


Figure 7-4: Destination Folder dialog

6. Click Install. The Ready to install BPRM v4.2 dialog (Figure 7-5) displays.

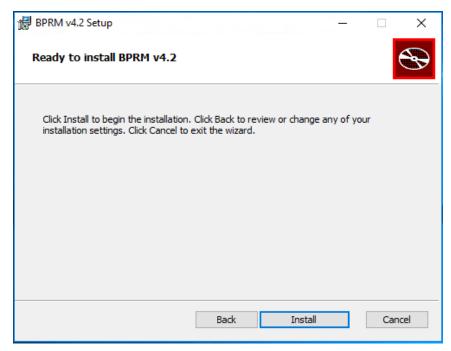


Figure 7-5: Ready to Install BPRM v4.1 dialog

7. Click **Yes**. The **User Account Control** dialog (Figure 7-6) displays.

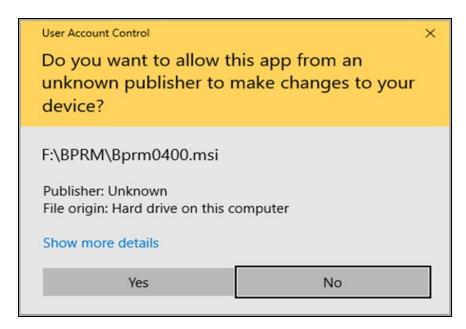


Figure 7-6: Installing BPRM dialog

After a short time of processing, the **Database Configuration** dialog (Figure 7-7) displays.

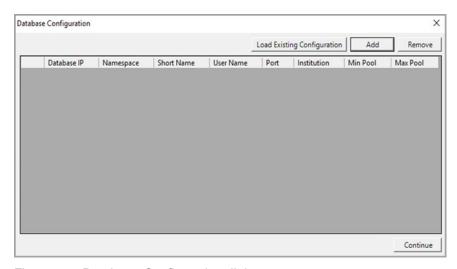


Figure 7-7: Database Configuration dialog

The **BPRM suite** relies on specific information about each **RPMS database** to which it is connected.

8. Click **Add** on the **Database Configuration** dialog to display the **Configuration** dialog (Figure 7-8) and add this information for each database associated with this installation.

Note: Load Existing Configuration will not work when loading from a BRPM V3.x configuration file. Use Add instead.

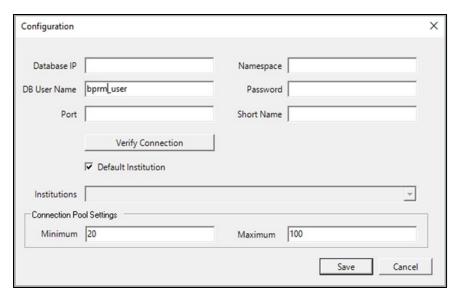


Figure 7-8: Configuration dialog

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

• Database IP: Use this field to enter the **IP address** of your **RPMS database**.

Note: 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 **BPRM_USER** user name.
- Password: Use this field to enter the **password** you set for the **BPRM_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 HealthShare setting.

The Superserver port number can be checked from within the HealthShare Management Portal using this path:

Home > System Administration > Configuration > System Configuration > Memory and Startup

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

• 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 to 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.
- Connection Pool Settings: This section relates to connection settings for BPRM application when requesting connections from the HealthShare Database. This setting has been introduced since, with HealthShare, the number of licensed connections has decreased from 1,500 (in Ensemble) to 250–500 (in HealthShare) and that has resulted in exhaustion of licenses. Sites can customize the number of minimum connections and maximum connections the BPRM application can request from the HealthShare application. It is defaulted to 20–100, but sites can modify according to the site's HealthShare license and BPRM usage.
- Minimum: This number indicates the **minimum connections** the **BPRM application** shall create/request from **HealthShare DB**, when the application is accessed for the first time. Minimum connections persist as long as the application is live.
- Maximum: This number indicates the maximum connections BPRM shall create/request from HealthShareDB at any given time (usually at the busiest time). Connections shall be destroyed when not in use until it reaches the minimum threshold.
- 9. When the **Configuration** dialog displays, enter the following:
 - Database IP
 - Namespace
 - DB User Name
 - Password
 - Port
- 10. Click Verify Connection.
- 11. Once the **Institutions list** is loaded, select your **institution** from the list and provide a **Short Name** (if not already present).
- 12. Once the fields are populated, click **Save** to add the information to the **BPRM** database configuration file.
 - For Multi-tenant setup (connecting this BPRM application to multiple RPMS environments/databases) repeat Steps 8 to 12 of this section.
- 13. When complete, click Continue to continue the application installation.

If an **Access Denied** error displays (Figure 7-9), close the **installer** and run the **installer** again in **Administrator mode** (**Run as Administrator**), as shown in Appendix A.

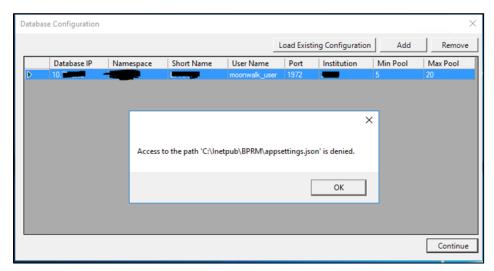


Figure 7-9: Access to Path Denied error

14. When the installation is complete, click **Next**. The **Installation Complete** dialog (Figure 7-10) displays.

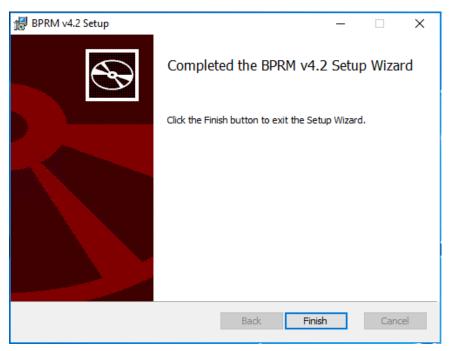


Figure 7-10: Installation Complete dialog

15. Click **Finish** to exit the dialog.

7.2 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 on to the **application server** where **BPRM** resides.
- 2. Browse to the location where the **BPRM Application Installer** file (**bprm0400.02.msi**) is stored.
- 3. Double-click the **bprm0400.02.msi** file to run the **BPRM application installer**. The **BPRM setup wizard** (Figure 7-11) displays.

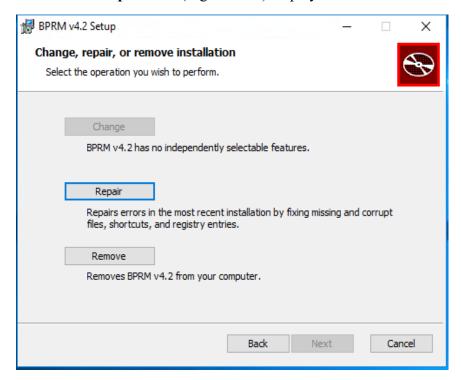


Figure 7-11: BPRM Setup Wizard dialog-Repair mode

4. Click **Repair**, and then click **Finish**. The **Installing BPRM** dialog (Figure 7-12) displays.

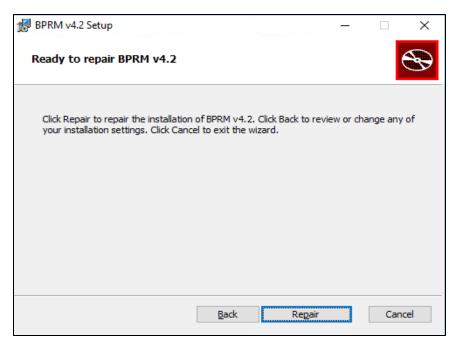


Figure 7-12: Installing BPRM dialog

5. Click **Next** once the processing is complete. The **Database Configuration** dialog (Figure 7-13) displays.

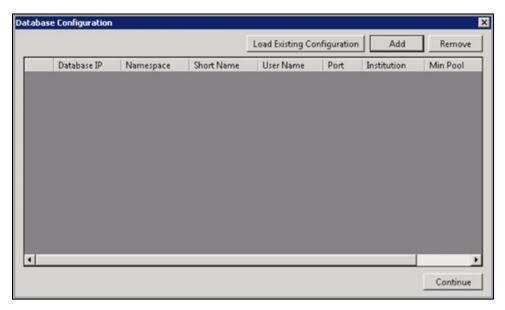


Figure 7-13: Database Configuration dialog

6. Click **Add** on the **Database Configuration** dialog to display the **Configuration** dialog (Figure 7-14) and add this information for each database associated with this installation.

Note: Load Existing Configuration will not work when loading from a BRPM V3.x configuration file. Use Add instead.

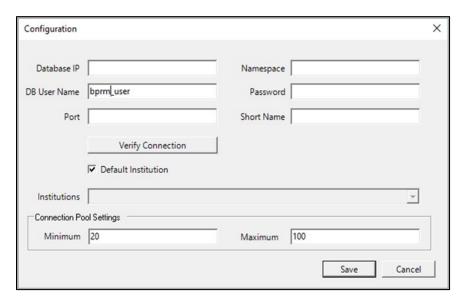


Figure 7-14: Configuration dialog

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

• Database IP: Use this field to enter the IP address of your RPMS database.

Note: 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 **BPRM_USER** user name.
- Password: Use this field to enter the **password** you set for the **BPRM_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 HealthShare setting.

The Superserver port number can be checked from within the HealthShare Management Portal using this path:

Home > System Administration > Configuration > System Configuration > Memory and Startup

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

- 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.
- Connection Pool Settings: This section relates to connection settings for BPRM application when requesting connections from the HealthShare Database. This setting has been introduced since, with HealthShare, the number of licensed connections has decreased from 1,500 (in Ensemble) to 250–500 (in HealthShare) and that has resulted in exhaustion of licenses. Sites can customize the number of minimum connections and maximum connections the BPRM application can request from the HealthShare application. It is defaulted to 20–100, but sites can modify according to the site's HealthShare license and BPRM usage.
- Minimum: This number indicates the **minimum connections** the **BPRM application** shall create/request from **HealthShare DB**, when the application is accessed for the first time. **Minimum connections** persist as long as the application is live.
- Maximum: This number indicates the maximum connections BPRM shall create/request from HealthShareDB at any given time (usually at the busiest time). Connections shall be destroyed when not in use until it reaches the minimum threshold.
- 7. When the Configuration dialog displays, enter the following:
 - Database IP
 - Namespace
 - DB User Name
 - Password
 - Port
- 8. Click Verify Connection.
- 9. 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.

For Multi-tenant setup (connecting this BPRM application to multiple RPMS environments/databases) repeat Steps 6 to 10 of this section.

- 11. When complete, click Continue to continue the application installation.
- 12. If an Access denied error (Figure 7-15) displays, close the installer and run the installer again in Administrator mode (Run as Administrator), as shown in Appendix A.

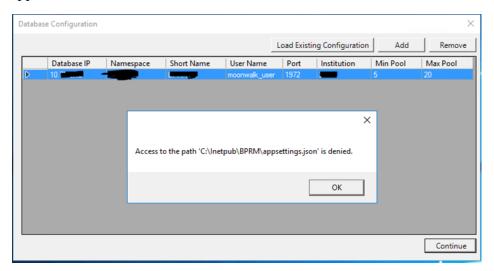


Figure 7-15: Access Denied error message

When the installation is complete, the **Installation Complete** dialog (Figure 7-16) displays.

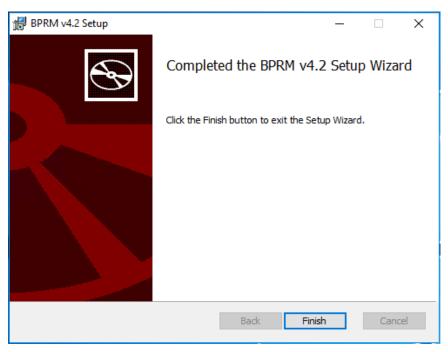


Figure 7-16: Installation Complete dialog

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

7.3 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 7-1 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 7-1. They will, however, need the appropriate **Security Keys** as shown in the table.

Table 7-1: 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
Admin		XUPROG XUPROGMODE
Flag Manager		DGPF MANAGER
Flag Assignment		DGPF ASSIGNMENT
ReOpen Benefit Case		AGZCREOPN
Regsitration Appts tab access	AGPAT-or-AGMENU	SDZ ELIG REPORT
Registration Clerk	AGPAT-or-AGMENU	AGZMENU

Role	Secondary Menu Option	Security Keys (Must include all)
Registration Supervisor	AGMENU	AGZMENU AGZMGR AGZHOME
Registration View Only	AGPAT-or-AGVIEWONLY	AGZVIEWONLY
Scheduling Clerk	BSDMENU	SDZMENU
Scheduling Supervisor	BSDMENU-or-BSD MENU SUPERVISOR	SDZMENU SDZSUP
SSN Viewer		AGZVIEWSSN

In cases where there is more than one **Secondary Menu Option** listed in Table 7-1, 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 **SDZSUP** security keys.

7.4 Open the BPRM Application

After the **installation** and **configuration** steps have been completed to open **BPRM**:

- 1. Open @Microsoft Edge, Google Chrome, or Mozilla Firefox.
- 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 previously assigned:
 - For sites using SSL: https://domain_name:kkk
 - For sites not using SSL: http://ip_address:kk

The **BPRM Log In** dialog (Figure 7-17) displays.



Figure 7-17: BPRM Log In dialog

- 3. Type your RPMS Access Code (user name) in the Access Code field.
- 4. Type your RPMS Verify Code (password) in the Verify Code field.
- 5. 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.

6. Click **Login**. A screen similar to that shown in Figure 7-18 displays, although different modules may display at the bottom of the screen.



Figure 7-18: BPRM opening screen

Note: If you specified a port other than the default 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.

7.5 Verify Client/Server Machine Date Time

For BPRM to work correctly, following environments must be on the same **date/time** (up to minutes):

- Database server (hosting RPMS)
- Application/IIS server (hosting BPRM application)
- User/Client machine (BPRM user's environment)

Once logged into the **BPRM application**, open the **About** page as follows:

- 1. Click the **Down** button next to **Logout** at top-right corner of BPRM.
- 2. Select **About** from the drop-down list, to open **About page**, as shown in Figure 7-19.



Figure 7-19: BPRM Logout drop-down list

3. Verify all three date/times (up to minutes)—App server Date/Time, Database Server Date/Time, and User/Client Machine Date/Time are the same (Figure 7-20).

The Client/User machine date time is not displayed in the About page. Users may verify the machine's system date time.

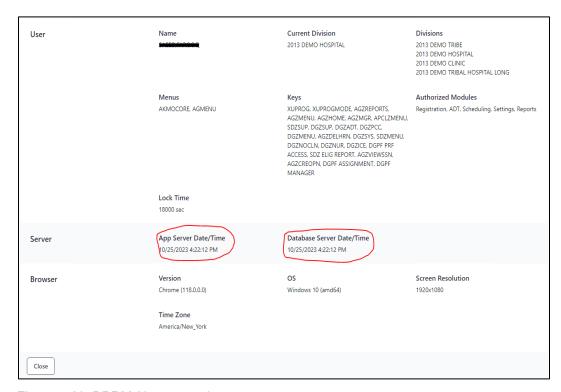


Figure 7-20: BPRM About page logout

Appendix A Run 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 (Figure A-2).

On your system, this location will likely be different.

Figure A-2: Drive D: in the EnsembleDatabases\bprm folder

4. At the resulting prompt, type the name of the installation file (bprm0400.02.msi in this example) and press Enter:

D:\EnsembleDatabases\bprm>bprm0400.02.msi

This will launch the **BPRM Setup Wizard** and at that point you can follow the steps described in Section 7.1.

Appendix B Disable Logging in IIS Manager

The Internet Information Services (IIS) manager is set up 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 BPRM 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 **BPRM** 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 B-1).

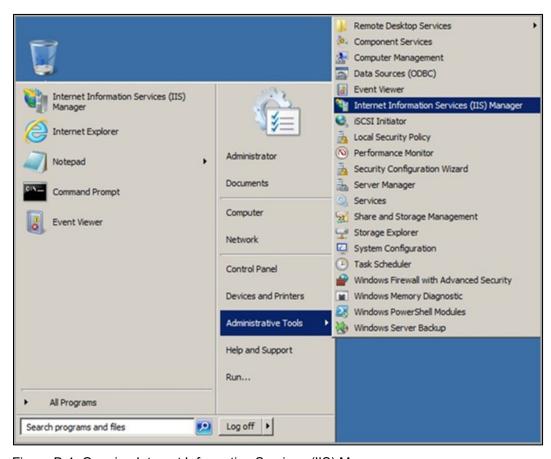


Figure B-1: Opening Internet Information Services (IIS) Manager

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

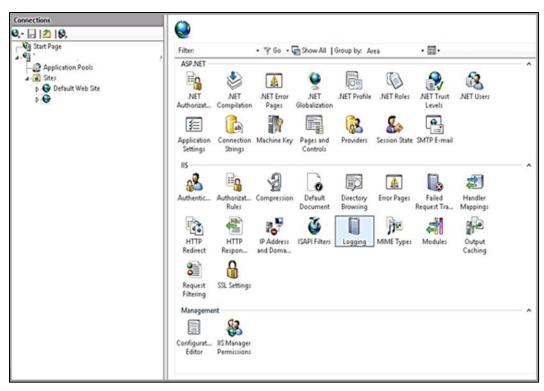


Figure B-2: IIS Management console

- 3. Select the **BPRM website** in the left pane.
- 4. Double-click **Logging** to display the **Logging dialog**.

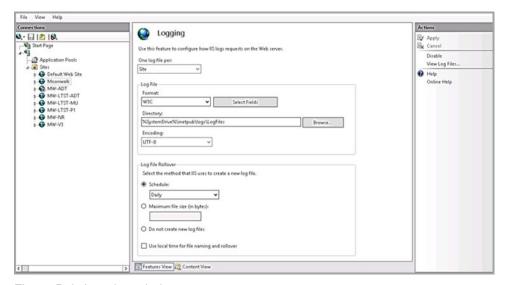


Figure B-3: Logging window

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

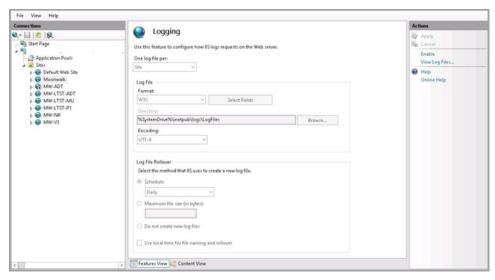


Figure B-4: Disabled Logging window

Appendix C Run Multiple BPRM Web Applications on a Single Server

BPRM is a multi-tenant application meaning a single BPRM application website can connect to multiple RPMS systems.

Setting up multiple BPRM applications on a single server/environment is not supported.

In cases where a single BPRM server needs to serve multiple RPMS environments; a single BPRM installation can be used to connect to multiple RPMS environments as described in Section 7.2.

Acronym List

Acronym	Meaning
CRUD	Create, Read, Update, and Delete
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IHS	Indian Health Service
IIS	Internet Information Service
KIDS	Kernel Installation and Distribution System
PHR	Personal Health Record
RPMS	Resource and Patient Management System
SQL	Structured Query Language
SSL	Secure Sockets Layer
WCF	Windows Communication Foundation

Contact Information

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