RPMS/Ensemble Cache Classes
Database File

(BMW)

BMW CACHE.DAT Installation Guide

Version 2019.1
October 2019
# Table of Contents

1.0 Release Notes .......................................................................................................................... 1

2.0 Installation Notes ..................................................................................................................... 2

2.1 Contents of Distribution ........................................................................................................ 2

2.2 Required Database Server Resources .............................................................................. 2

2.3 HealthShare Prerequisites ................................................................................................. 2

3.0 Installation Overview ............................................................................................................ 3

4.0 Installation and Configuration ............................................................................................... 4

4.1 Assumptions ............................................................................................................................. 4

4.2 Installation ............................................................................................................................... 4

4.2.1 Download BMW file ........................................................................................................ 4

4.2.2 Create the /BMW Folder ................................................................................................. 4

4.2.3 Unzip the BMW ZIP File ................................................................................................. 5

4.2.4 Move the BMW CACHE.DAT File to the Database Server ........................................ 5

4.2.5 Set File and Folder Permissions ..................................................................................... 5

4.2.6 Set Up the BMW Database ............................................................................................ 6

4.2.7 Mount the BMW Database ........................................................................................... 9

4.2.8 Create the New Namespace .......................................................................................... 10

4.2.9 Check and Remove Mirror Bit ..................................................................................... 10

4.3 Package Mapping ................................................................................................................... 12

4.3.1 Set Up Package Mapping ............................................................................................... 12

4.3.2 Verify Package Mapping ................................................................................................ 14

4.4 Global Mappings .................................................................................................................... 16

4.5 Verify BMW Version Installed ............................................................................................. 19

5.0 Installing File Updates ........................................................................................................... 20

5.1 Updating the BMW CACHE.DAT File ................................................................................... 20

5.1.1 Acquire the Latest BMW CACHE.DAT File ................................................................. 20

5.1.2 Unzip the BMW CACHE.DAT ZIP File ....................................................................... 20

5.1.3 Stop the BPRM Web Site on the Application Server .................................................. 20

5.1.4 Stop CCDA Messaging .................................................................................................. 22

5.1.5 Stop CCDA Production ................................................................................................ 23

5.1.6 Stop BQRE Extract ........................................................................................................ 26

5.1.7 BUSA Reports ................................................................................................................ 26

5.1.8 Dismount the BMW Database on the Database Server ........................................... 26

5.1.9 Move the New CACHE.DAT File ................................................................................... 27

5.1.10 Mount the BMW Database ........................................................................................ 27

5.2 Purge the Previous SQL Queries .......................................................................................... 28

5.3 Start the BMW Web Site on the Application Server ......................................................... 29

5.4 Start CCDA Messaging ......................................................................................................... 29

5.5 Starting CCDA Production .................................................................................................... 29

5.6 Verify BMW Version Installed ............................................................................................ 29
5.7 Enable/Start Dependent Applications .................................................... 30

Acronym List ............................................................................................................... 31

Contact Information .................................................................................................... 32
Preface

This manual describes the installation of the BMW CACHE.DAT file used by the BPRM Practice Management Application Suite, BQRE, CCDA as well as other Meaningful Use 2-compliant Indian Health Service (IHS) applications. The versioning information indicates the calendar year and quarter in which the BMW CACHE.DAT file is generated.
1.0 Release Notes

This release of the stand-alone BMW CACHE.DAT file is to support changes related to a BPRM patch release and other BMW dependent applications. Previously, this file was integrated into the BPRM Practice Management Application Suite. However, since this CACHE.DAT file is now used by other applications, it is provided to sites as a stand-alone package from this point forward.
# 2.0 Installation Notes

**Prefix:** BMW  
**Current Version:** 2019.1

## 2.1 Contents of Distribution

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bmw_2019.1_win_HS17.zip</td>
<td>CACHE.DAT Cache database file for Windows systems</td>
</tr>
<tr>
<td>bmw_2019.1_aix_HS17.tar.gz</td>
<td>CACHE.DAT Cache database file for AIX systems</td>
</tr>
<tr>
<td>bmw_2019.1_HS17i.pdf</td>
<td>BMW CACHE.DAT Installation Guide</td>
</tr>
</tbody>
</table>

## 2.2 Required Database Server Resources

The BMW CACHE.DAT file requires a minimum 10 GB of free disk space on the database server.

## 2.3 HealthShare Prerequisites

This BMW CACHE.DAT file is currently supported on HealthShare version 2017.2.x and shall **not** be setup on Ensemble 2012.

This BMW version (2019.1) accumulates all changes and functionality released in previous patches, including BMW 2018.4.

Any application requiring BMW 2018.4 version (on Ensemble 2012) shall work the same with BMW 2019.1 (on HealthShare 2017).

The examples in this Installation Manual reflect HealthShare 2017.2.2HS.9686.0. If the site is running a different version, some of the screens may vary slightly from those shown here.
3.0 Installation Overview

The BMW CACHE.DAT file is a required component of several IHS RPMS applications. It must be present in order for these applications to run.

As a strategy to minimize changes to the Resource and Patient Management System (RPMS) database, the BMW CACHE.DAT file is mounted as a separate database on a HealthShare server. This 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 take advantage of 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.

Follow the instructions shown in Section 4.0 if you are installing the BMW CACHE.DAT file for the first time at your site. Refer to Section 5.0 if an earlier version of the BMW CACHE.DAT file is installed at your site.
4.0 Installation and Configuration

4.1 Assumptions

This section assumes the following:

- The HealthShare server (running one of the supported versions) has already been set up.
- An RPMS database is already set up on the HealthShare server.
- The user performing the installation and configuration has the appropriate rights to mount databases.

In this manual, “MSDB” is the name of the RPMS database used. The name may be different on the site’s system. The steps shown in the following sections will guide you through setting up the BMW database for the IHS RPMS environment.

4.2 Installation

4.2.1 Download BMW file

Download the desired version of the BMW file from IHS FTP. Alternatively, find the RPMS/Ensemble Cache Classes Database File (BMW) at https://www.ihs.gov/rpms/applications/infrastructure/.

4.2.2 Create the /BMW Folder

Create a /BMW folder under the default database folder on the database server. This is the folder where the BMW CACHE.DAT file will reside.

For Windows systems, follow these steps (substituting the appropriate drive letter and folder names):

1. Using Windows Explorer, navigate to D:\EnsembleData\ on your database server.
2. Click Organize, and then select New Folder.
3. Type BMW, and press Enter to create the D:\EnsembleData\BMW folder.

For AIX systems, issue the following command at the command prompt. (Note that this example is using usr3 as the default database directory. Your default directory will likely be different.)

```
$mkdir /usr3/cachedata/bmw/
```
4.2.3 Unzip the BMW ZIP File

Using the appropriate utility for the file format provided, unzip the BMW file into CACHE.DAT file, which will be mounted onto the HealthShare server in the steps shown in Section 4.2.7.

Unzip this file on a workstation or other local machine, not on your database server itself. After it is unzipped, it will be moved to the database server as described in Section 4.2.4

4.2.4 Move the BMW CACHE.DAT File to the Database Server

After unzipping the compressed file, move the CACHE.DAT file contained within it to the /BMW folder created in Section 4.2.1:

- If installing on a Windows database server, this file move can be done directly through the network or via Remote Desktop Connection, depending on site requirements.
- On an AIX database server, it will may be required to use File Transfer Protocol (FTP) or another similar file transfer program to move the file.

4.2.5 Set File and Folder Permissions

The BMW CACHE.DAT file needs specific access permissions (also known as access rights on AIX systems) to access the CACHE.DAT file and the folder in which it is stored. On Windows servers, the necessary permissions are typically set up by default.

On AIX servers, the necessary rights are not established by default. To set the access rights on an AIX server:

1. Type the command at the AIX command prompt to navigate to the folder where CACHE.DAT is stored. (Note that this example uses `usr3` as the default database directory. Your default directory will likely be different.)

   ```bash
   $cd /usr3/cachedata/
   ```

2. Type this command to set the permissions for the /bmw directory:

   ```bash
   $chmod 770 /usr3/cachedata/bmw
   ```

3. Type the following command to set the permissions for the CACHE.DAT file:

   ```bash
   $chmod 775 /usr3/cachedata/bmw/CACHE.DAT
   ```
4.2.6 Set Up the BMW Database

Mount the unzipped BMW database using the HealthShare\ System Management Portal, a component of HealthShare:

1. Right-click the HealthShare icon ( ) in the Windows Notification Area. The menu in Figure 4-1 displays.

![Figure 4-1: Opening the HealthShare System Management Portal](image)


![Figure 4-2: HealthShare login dialog](image)

3. Type your Ensemble/Cache user name and password in the window displayed (Figure 4-2). Click Login.
4. From the Ensemble/Cache **System Management Portal Home** window, click **System Administration > Configuration > System Configuration > Local Databases** as shown in Figure 4-3.

![Figure 4-3: System Management Portal – Local Databases](image)

5. The **Local Databases** window displays as shown in Figure 4-4.

![Figure 4-4: Local Databases window](image)
6. Select **Create New Database** in the upper left of the **Local Databases** window. The **Database Wizard** (Figure 4-5) window displays.

7. In the **Enter the name of your database** field, type **BMW**.

8. Click **Browse** and browse to the folder where the **BMW** database is located, on the HealthShare server, as described in Section 4.2.3. (The correct folder is labeled \**BMW** and contains the CACHE.DAT file).

9. Click **Next** to display the next window of the Database Wizard (Figure 4-6). A message displays stating the CACHE.DAT database file already exists. Click **Finish** to close the **Database Wizard**.

![Database Wizard](image-url)
4.2.7 Mount the BMW Database

Do the following to mount the BMW database:

1. From the **System Management Portal Home** window, click **System Operation > Databases** to display the **Databases** window shown in Figure 4-7.

![Figure 4-7: System Management Portal Databases window](image)

2. If the **Status** column for the BMW database shows it to be unmounted, click **Mount**. The confirmation dialog shown in Figure 4-8 displays.

![Figure 4-8: Mount Database dialog](image)
4.2.8 Create the New Namespace

Do the following to create a new namespace for the BMW database:

1. Browse to the New Namespace window of the Management Portal following this path:
   
   Home > System Administration > Configuration > System Configuration > Namespaces

2. Click Create New Namespace at the top of the screen displayed. This causes the New Namespace window shown in Figure 4-9 to display.

   ![New Namespace window](image)

3. Create a new namespace, specifying BMW as the name of the namespace, and selecting BMW from the list of existing databases for Globals and Routines.

4. Unselect the Make this a HealthShare namespace check box.

5. Click Save.

4.2.9 Check and Remove Mirror Bit

Use the instructions in this section to check for a mirror bit on BMW cache.dat and remove it as shown in Figure 4-10.
A mirror bit on BMW cache.dat can potentially present an issue with mounting the BMW database in Read/Write (RW) mode and when installing dependent applications such as BPRM and BQRE.

1. Open the HealthShare terminal in programmer prompt.

2. Switch to the %SYS namespace using command `zn "%SYS"`.

3. Run the command `D ^MIRROR` to open mirroring settings.

4. List all mirrored databases by choosing option 1.

5. Check if the BMW database displays in the list.

6. If the BMW database displays, choose option 2 to remove the mirror bit from the BMW database.

7. Provide the database pathname (shown in **bold, italic font** in Figure 4-10) if you are prompted to provide a database name/path to remove the mirror bit.

```plaintext
USER> zn "%SYS"
%SYS> d ^MIRROR
This instance is not initialized as a mirror member
1) List mirrored databases
2) Remove one or more mirrored databases
3) Enable Mirror Service

Option? 1
No mirrored db's mounted
Databases with the activation required flag set
4   f:\databases\bmw\                    BMW
     133/1170064/133/1170548/0/HS2017S2016M2/d:\ensembledata\bmw\ 133/1170064/133/1170548/0/HS2017S2016M2/d:\ensembledata\bmw\ 133/1170064/133/1170548/0/HS2017S2016M2/d:\ensembledata\bmw\ 133/1170064/133/1170548/0/HS2017S2016M2/d:\ensembledata\bmw\ 5AFC9AEF-E489-4ACC-86A0-91C3179A20B8
     E6F79B80-1493-4FE6-9FAC-35D9A5991188/B03E779F-FAEA-49AE-80D8-51C01FAC3737
Press <enter> to return to the main menu...

1) List mirrored databases
2) Remove one or more mirrored databases
3) Enable Mirror Service

Option? 2
There is one mirrored database on this system
Remove it? Yes
Removing f:\databases\bmw\dic\ from the mirror ...Done
Press <enter> to return to the main menu...
```

Figure 4-10: Check and remove mirror bit
4.3 Package Mapping

4.3.1 Set Up Package Mapping

Do the following to set up the package mapping:

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

   Home > System Administration > Configuration > System Configuration > Namespaces

   A **Namespaces** window similar to Figure 4-11 displays.

   ![Namespaces window with Package Mappings](Image)

   **Figure 4-11: Namespaces window with Package Mappings**

2. Click **Package Mappings** in the row corresponding to your **RPMS production database**. This example shows the MSDB database. Your site’s database may have a different name. The **Package Mappings** window (Figure 4-12) displays.
3. Click New on the Package Mappings window to display the Package Mapping dialog (Figure 4-13).

4. Type BMW in the Package database location field.

5. Type BMW in the Package name field.

6. Click OK; the Package Mappings dialog (Figure 4-14) redisplayes.
Figure 4-14: Package Mappings confirmation window

7. Click **Save Changes**.

### 4.3.2 Verify Package Mapping

To verify that the package mapping was successful and Cache classes (tables) can accurately fetch data from FileMan files, do the following:

1. Browse to the **Execute SQL Query** window of the Ensemble System Management Portal following this path:

   **Home > System Explorer > SQL > Execute SQL Statements**

   The **Execute SQL Query** page (Figure 4-15) displays:
2. Select the site-specific namespace (MSDB in this example) from the column on the left.

3. Type `SELECT * FROM BMW.STATE` in the edit box.

4. Click **Execute Query**. If the package mapping is successful, a listing similar to Figure 4-16 displays.
4.4 Global Mappings

Global mapping must be established between the BMW database and RPMS database.

To perform global mapping:

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

   **Home > System Administration > Configuration > System Configuration > Namespaces**

   A **Namespaces** window similar to Figure 4-17 displays.

![Figure 4-16: Example of a test query](image)
2. Click **Global Mappings** in the row corresponding to the RPMS *production* database. This example shows the MSDB database, an RPMS production database. Your site’s database may have a different name. The **Global Mappings** window (Figure 4-18) displays.
3. Click **New Global Mapping** to display the **Global Mappings** dialog (Figure 4-19).

4. Select **BMW** from the **Global Database Location** list.

5. Type **BMW** in the **Global Name** field.
6. Click **OK**. The **Global Mappings** window (Figure 4-20) redisplay.

![Global Mappings window](Figure 4-20: Global Mappings confirmation window)

7. Click **Save Changes** to complete the global mapping operation.

### 4.5 Verify BMW Version Installed

Once installation is complete, confirm the version number of BMW that is currently installed.

1. Log into an RPMS session and go to the programmer prompt.

2. Type the following command: `ZW ^BMW`.

3. This will display the BMW generation date and version number (Figure 4-21) that is currently installed.

![BMW version from RPMS programmer prompt](Figure 4-21: Example of BMW version from RPMS programmer prompt)
5.0 Installing File Updates

BMW CACHE.DAT file updates are released on a periodic basis to address reported issues and to add enhancements. Follow the steps in Sections 5.1 through 5.5 to install a BMW CACHE.DAT update.

5.1 Updating the BMW CACHE.DAT File

Follow the steps in Sections 5.1.1 through 5.1.10 to import a new BMW CACHE.DAT file.

5.1.1 Acquire the Latest BMW CACHE.DAT File
Acquire the latest BMW CACHE.DAT file from IHS FTP.

5.1.2 Unzip the BMW CACHE.DAT ZIP File
Using the appropriate software, unzip the compressed file containing the BMW CACHE.DAT file. Unzip this file on a workstation or other local machine, not on the database server. After is it unzipped, move it to the database server. After moving the file, mount the BMW CACHE.DAT file onto the Ensemble/Cache server.

5.1.3 Stop the BPRM Web Site on the Application Server
If running the BPRM Practice Management Application Suite, it is necessary to stop the BPRM (Moonwalk) web site on the application server before installing a BMW CACHE.DAT file patch or update. Follow the steps below.

1. Select Internet Information Services (IIS) Manager from the Windows Server Administrative Tools menu (Figure 5-1).
Figure 5-1: Opening **Internet Information Services (IIS) Manager**

2. The **Internet Information Services (IIS) Manager** window (Figure 5-2) displays.
3. Select the application server in the left pane (Win2k8srv32 in the example).

4. Expand the Sites folder, and select the Moonwalk site.

5. Click Stop in the Manage Web Site section in the Actions pane.

5.1.4 Stop CCDA Messaging

If CCDA is running, it must be stopped before updating the BMW CACHE.DAT file. CCDA Messaging can be stopped using the Manage CCDA transmissions option, available in the CCDA Menu (Figure 5-3). The CCDA Menu can be accessed from the regular “OPTION NAME” prompt in RPMS.

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
CCDA processing task is running
Stop CCDA? No// Y (Yes)
Attempting to stop CCDA....CCDA stopped
```

Figure 5-3: Stopping CCDA Messaging

1. At the “Select CCDA Menu Option” prompt, type MANG (Manage CCDA transmissions) and press Enter.

2. If CCDA Messaging is running, type YES at the “Stop CCDA?” prompt.
5.1.5 Stop CCDA Production

To stop CCDA production, if it is currently running:

1. Sign on to Ensemble’s **Management Portal** as an administrator. At the top center, the main page displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link. See Figure 5-4.

![Figure 5-4: Ensemble Management Portal](image-url)
2. Click the **Switch** link. The **Namespace Chooser** dialog (Figure 5-5) displays.

![Namespace Chooser dialog](image)

Figure 5-5: **Namespace Chooser** dialog

3. Select the appropriate CCDA namespace. The namespace consists of **CCDA** followed by the name of the RPMS namespace. In the example, the RPMS namespace is named **TEST4**, so the associated CCDA namespace is named **CCDATEST4**.

4. Click **OK** to select the namespace. The namespace displayed on the **Management Portal** page (Figure 5-6) is updated to reflect the selection.
5. Select **Ensemble** in the left column.
6. Select **Configure**.
7. Select **Production**.
8. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page (Figure 5-7).

![Figure 5-6: Production option in the Ensemble Management Portal](image1)

![Figure 5-7: Production Configuration](image2)
9. Above the Services column on the left of the display, the words Ensemble Running will be displayed. If the words “Ensemble Stopped” display, then the production is already stopped. Otherwise, click Stop. The Stop Production dialog (Figure 5-8) displays.

![Stop Production dialog](image)

Figure 5-8: Stop Production dialog

It might take the production a few seconds to stop. When it stops, the message “Production 'BCCD.Prod.Production’ stopped” displays, followed by the message “Done.” There may be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

10. Click OK to return to the Production Configuration screen.

5.1.6 Stop BQRE Extract

Make sure there is no BQRE extract in process during the BMW install/update.

5.1.7 BUSA Reports

BUSA reports may not display data during install/update of BMW. It does not, however, effect the auditing part of BUSA.

5.1.8 Dismount the BMW Database on the Database Server

1. From the Ensemble/Cache System Management Portal Home window, click System Operation > Databases to display the Databases window (Figure 5-9).
2. Click **Dismount** in the BMW row to dismount the database.

### 5.1.9 Move the New CACHE.DAT File

After unzipping the compressed file as described in Section 5.1.2, move the CACHE.DAT file contained within it to the /BMW folder where earlier versions of the file have been stored. If installing on a Windows database server, this file move can be done directly through the network or via Remote Desktop Connection, depending on site requirements. On an AIX database server, it may be necessary to use FTP or a similar file transfer program to move the file.

### 5.1.10 Mount the BMW Database

To mount the BMW database:

1. From the Ensemble/Cache **System Management Portal Home** window, click **System Operation > Databases**. A **Databases** window similar to Figure 5-10 displays.

---

**Figure 5-9: Dismounting the BMW database**

**Figure 5-10: System Management Portal Databases window**
2. If the Status column for the BMW database reads unmounted, click Mount. The confirmation dialog (Figure 5-11) displays.

![Mount Database](image)

Figure 5-11: Mount Database dialog

5.2 Purge the Previous SQL Queries

To clear any previous SQL queries for your RPMS database:

1. From the Ensemble/Cache System Management Portal Home window, click System Explorer > SQL. The Schemas page (Figure 5-12) displays.

![Purge Queries](image)

Figure 5-12: Purge Queries – Ensemble 2012 systems
2. Select the RPMS namespace. In the example shown, **MSDB** is selected. Your database will likely have a different name.

3. Click **Purge ALL Queries for this namespace**.

### 5.3 Start the BMW Web Site on the Application Server

If running the BPRM Practice Management Application Suite, restart the BMW web site. Follow the steps outlined in Section 5.1.3, but select the **Start** option in Step 3.

### 5.4 Start CCDA Messaging

If CCDA was previously running, restart it by following the steps outlined in Step 3 of Section 5.1.3 and typing **YES** at the “Start CCDA?” prompt as shown in Figure 5-13.

```
Select CCDA Menu Option: MANG Manage CCDA transmissions
CCDA status:
No configuration problems found
CCDA processing task is not running
Start CCDA? No// YES (Yes)
Attempting to start CCDA  (JUL 16, 2013@16:09:54)..CCDA started
```

Figure 5-13: Starting CCDA Messaging

### 5.5 Starting CCDA Production

When CCDA Messaging is started via the **Manage CCDA Transmissions** option, the CCDA production will start automatically within two minutes.

### 5.6 Verify BMW Version Installed

Once installation is complete, you confirm the version number of BMW that is currently installed.

1. Log into an RPMS session and go to the programmer prompt.

2. Type in the following command: **ZW ^BMW**.

3. This will display the BMW generation date and version number (Figure 5-14) that is currently installed.
5.7 **Enable/Start Dependent Applications**

BQRE extracts can be resumed.

BUSA reports shall display data.
### Acronym List

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Term Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCDA</td>
<td>Consolidated Clinical Document Architecture</td>
</tr>
<tr>
<td>FTP</td>
<td>File Transfer Protocol</td>
</tr>
<tr>
<td>IHS</td>
<td>Indian Health Service</td>
</tr>
<tr>
<td>OIT</td>
<td>Office of Information Technology (IHS)</td>
</tr>
<tr>
<td>RPMS</td>
<td>Resource and Patient Management System</td>
</tr>
<tr>
<td>SQA</td>
<td>Software Quality Assurance (OIT)</td>
</tr>
<tr>
<td>SQL</td>
<td>Structured Query Language</td>
</tr>
</tbody>
</table>
Contact Information

If you have any questions or comments regarding this distribution, please contact the IHS IT Service Desk.

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

**Web:** [https://www.ihs.gov/itsupport/](https://www.ihs.gov/itsupport/)

**Email:** itsupport@ihs.gov