Upgrading Centricity® Electronic Medical Record Service Packs on Microsoft® Windows® Server

Version 9.8.6
September 2014
## Revision history

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<td>Rev 1</td>
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<td>Rev 2</td>
<td>Added LinkLogic update instructions to client upgrade section and updates for EMR 9.8.6</td>
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Upgrading
Centricity EMR Service Packs on Windows

Task overview

The major phases in the process are:

- Pre-installation activities
- Upgrade the Centricity EMR components

Pre-installation activities

The following list is a brief overview of the activities that should be performed before installing the service pack. For more detailed information on installation prerequisites see the documentation available on the Centricity Services Web site.

1. Download the service pack.
2. Identify affected servers:
   - Centricity Database Server
   - Centricity Application Server
   - LinkLogic Network Share Server
   - DTS Server(s)
   - Citrix Server(s)
Client Computers

3 Ensure that all users are off the system at all locations.

4 Export custom clinical content.

5 Stop all DTS processes/applications.

6 Stop all database-dependent processes such as ePrescribing, etc.

7 Perform backups:
   - CentricityStage folder
   - Centricity Database Server: backup the database directories

Stop database process(es), then backup:
   - Centricity Application Server: backup of the directory where Staging is located
   - LinkLogic Network Share Folder: full backup after stopping DTS application/processes
   - DTS Server(s): full backup after stopping DTS application/processes
   - Citrix Server: full backup
   - Datalink: datalink.war

8 Restart Centricity Database.
Upgrade the Centricity EMR components

Back up existing EMR installation

1. Do a full system backup of the current EMR installation (or verify that a valid backup exists) that includes, but is not limited to these items:
   - Database (for example, D:\oracle)
   - Staging location (for example, D:\CentricityStage). If you are going to re-use the staging area, consider making a copy of the existing staging area in addition to the backup. Files are overwritten during the upgrade.
   - Network LinkLogic directory

   Allow 2–3 hours, depending on the number of patients in your database and the type of hardware you have available.

Oracle must be shut down to create a complete backup. Do not perform a hot backup.

   For more information about performing backups, see the documentation for your backup software, and “Perform backups and recover data” in your version of the Preparing and Maintaining Centricity Electronic Medical Record Systems guide.

2. Use one of these methods to verify that all necessary files are available and successfully backed up:
   - Use the compare/verify feature of your backup program. For example, certain backup programs provide a Compare Log you can check.
   - Restore the database to a different workstation hard drive or to a temporary directory not on your EMR server.
   - Restore to a test server and verify that the restored EMR runs.

!!! Do not rely on the Successful message in the backup log to verify the backup tape. This message may only mean that some of the files were successfully backed up.

Upgrade the Centricity EMR components

Log on to the database server. You must have administration privileges to complete the installation tasks. The installation tasks are:

- Disable backup software and prepare the server
- Run the setup application
- Update the server
- Update the EMR application database
- Test the server connection and re-enable scripts
- Install the Service Layer
- Install on a client
- Install updated CCC content
Upgrading Centricity EMR Service Packs on Windows

- Install optional components

!!! When you upgrade EMR, the existing network training database is overwritten. If you have to restore any setup data, export the data as a clinical kit then import it into the training database once you complete the upgrade. See “Prepare and export the Network Training database” on page 11.

Disable backup software and prepare the server

1. Log on to the EMR database server with admin privileges.
2. Notify all users to exit EMR.
3. Use SQL*PLUS to verify that all users are logged off:
   b. In the Open field, type sqlplus then press Enter. The SQL*PLUS window opens.
   c. At Enter User-name, type the following statement, then press Enter.
      ml/mlpassword@database
      mlpassword is the EMR password, and database is the name of your database.
   d. At the prompt, enter the following SQL statement then press Enter:
      select * from users_logged_in;
      If no users are logged in, you see the statement, no rows selected. If users are listed, they are logged in.
   e. Contact the users that are logged in and ask them to log off.
   f. At the prompt, type exit then press Enter.
4. Verify that the system date, time zone, and time on the server are accurate:
   a. On the Windows desktop, click Start | Settings > Control Panel.
   b. Double-click the Date/Time icon. The Date/Time window opens.
   c. Review, and if necessary, change the date, time, and time zone.
   d. Click OK, then close Control Panel.
5. Disable any automatic backup software running on the EMR database server. Automatic backups can interfere with the installation process. Refer to your backup software documentation for information.

Run the setup application

When upgrading from v9.8.x, you are prompted to insert an Oracle DVD when running setup.exe to install the staging area. All EMR 9.8.x releases use the same Oracle version (11.2.0.3.0), there is no need to run the Oracle DVD.

When running setup.exe, choose the radio button to not copy the DVD contents. SPR 60651

1. Navigate to where you downloaded and unzipped the release.
3. Click Next. The Choose Destination Location window opens.
4 Browse to the EMR application staging directory (for example, D:\CentricityStage) where you copy the contents of the Centricity EMR disc that is used for the installation. If you have a versioned staging area, select the root staging directory.

!!! This staging location directory contains the files and directories used to install Centricity EMR on the server and build or upgrade the database.

If you see the message “This cannot be an upgrade Install. Setstage.exe was not found.”, you did not enter or select the directory that was used when installing the previous version. Use Windows Explorer to find the file named SetStage.exe in the staging directory.

5 Click Next. The Select Installation Option window opens. Choose one of the following:
- Yes, overwrite existing staging directory
  By default, the setup program overwrites the existing staging location. We recommend you use this option. If you need access to the old staging location at another time, you can retrieve it from the EMR backup you created in the pre-upgrade steps.
- No, select a different staging directory
  This option is normally used in Application Service Provider (ASP) environments, where each clinic has its own database. Selecting a different staging area allows you to upgrade the other servers over time.

6 Click Next. The staging area is displayed for verification. If the staging area is incorrect, click Back to select the correct directory.

7 Click Next. The Setup Type window opens with the option to copy the DVD contents to the staging directory. Select No, do not copy the DVD contents.

8 Click Next.

9 The SetStage window displays.

Update the server

1 In the SetStage window, click Update a Current Server. The Servers list displays.

2 Select the database, then select one of the following:
- Run the update automatically
  This option uses the default installation options.
- Run the update manually (advanced users only)
  This option is used by advanced users only to fine tune the installation while installing.

3 Click Next. The File Locations window opens. You see your current EMR server information.

4 Enter the sys password. The default password is oracle, but may have been changed by the Oracle administrator. Change the server information if needed. All of the other fields should be left unchanged.

5 Click Next. You see a message cautioning you to:
- Make certain ALL users are logged off
- Back up the database
Upgrading Centricity EMR Service Packs on Windows

- Shut down ALL databases and instances
- Using the Services Manager, stop ALL Oracle services

6 Click **Continue**. The Update window opens.

Update the EMR application database

**In the Update window, click Update database.** The time required depends on the number of providers, the speed of the file server’s processor, and the amount of available server memory.

---

***Do not click Cancel until the create database process is complete.***

---

You can maximize the SQL*PLUS window to monitor the scripts as they perform these tasks:

- Initialize your EMR application database
- Import data into your training database
- Import lookup tables and other data
- Mark certain Oracle lookup tables as read-only to conserve system resources

---

***Do not click the Close button in the upper right of the window. It halts SQL*PLUS and stops the database installation. If you stop the installation, you must completely remove all files created by the installation process. Call Centricity Services for help removing the changes created by a partial installation.***

---

Test the server connection and re-enable scripts

1 **In the Update window, click Test Server connection.** The Check Database Connection window opens. If no errors display, click **Continue**. Otherwise, call Centricity Services.

2 In the Installation window, click **Finish**. The SetStage window opens.

3 Print the installation summary:
   a **In the SetStage window, click Print Installation Summary.**
   b **In the Print Installation Summary window, click the server name and click Print Installation Summary.**
   c Close the Print Installation Summary window.

4 In the SetStage window, click **Close** to exit SetStage.

5 If you disabled backup scripts, re-enable them now.

Install the Service Layer

The Service Layer is installed on the same server as JBoss.

The Service Layer must be installed for each database instance. The instances are shown on the selection screen displayed in step 5. Repeat these steps for each instance shown.

1 Uninstall the JBoss Application Server via the Windows Programs and Features control panel. Go to **Control Panel > Programs > Programs and Features**, select
**Centricity Practice Solutions - JBoss Application Server** and then click **Uninstall** and follow the remaining prompts to complete the JBoss uninstallation.

2. Go to the C:\Program Files directory and delete the Centricity Practice Solution folder (this is the default location of the JBoss installation directory. If any other folder path was selected during installation, navigate to the correct path and delete the folder).

3. Browse to the CentricityStage folder and run **SetStage.exe**.

4. Click on **Maintain a current server**.

5. Select the database instance to install the Service Layer. Click **Next** to continue.

6. In the **Maintain** Window, click **Install JBoss** and accept the default values.

7. Click **Next** three times and then click **OK**.

8. In the **Maintain** Window, click **Install Service Layer**.

9. Click **Finish** to return to the SetStage main menu.

10. Repeat these instructions for each database instance.

**Install on a client**

1. Copy the client installer files from the `<Staging directory>\worksta` folder to `<Staging directory>\worksta\source`:

   0x0409.ini  
   Centricity EMR 9.8.msi  
   Centri~1.cab  
   Client~1.cab  
   GACAss~1.cab  
   instmsiw.exe  
   ISSetup.dll  
   ISSetupPrerequisites <Directory>  
   LinkLo~1.cab  
   Logici~1.cab  
   Oracle.cab  
   setup.bmp  
   setup.exe  
   Setup.ini  
   WindowsInstaller-KB893803-x86.exe  

2. Upgrade LinkLogic if you use a network LinkLogic folder. Otherwise skip to Step 3.

   a. Back up your LinkLogic directories (usually C:\Program Files\Centricity EMR 9.x\logic).

   b. Ensure that the Data Transfer Station (DTS) application is not running on the server or the workstation.

   c. Upgrade the DTS using the workstation setup.exe program in the `worksta\source` directory on the Oracle server. Do not start the EMR workstation client after clicking **Finish**.
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d On the DTS workstation, navigate to the LinkLogic standard folder (usually C:\Program Files\Centricity EMR 9.x\logic\config\standard).
e Right-click on the standard directory and select Copy.
f Navigate to the remote LinkLogic config directory on your database server (such as \<server_name>\<database_name>\logic\config).
g Right-click on the config directory and select Paste.
h A message confirms whether to replace the folder. Click Yes to All.
i On the DTS, navigate to the LinkLogic upgrade folder (usually C:\Program Files\Centricity EMR 9.x\logic\config\upgrade).
j Right-click on the upgrade directory and click Copy.
k Navigate to the remote LinkLogic config directory on your database server (such as \<server_name>\<database_name>\logic\config).
l Right-click on the config directory and click Paste.
m A message confirms whether to replace the folder. Click Yes to All.
n Start the DTS application.
o Repeat Steps 2a-c and Step 2n on each additional DTS.

3 Add an additional job to upgrade the client to the jobs.txt file located in the staging folder, for example CentricityStage\Worksta\jobs.txt. Increment the last line number in the file in place of the 2 in this example:

2,emr,\,extract,setup.exe /z"upgrade",all

4 Save and close the jobs.txt file. The next time the application is started on the workstation, the setup program starts the client upgrade.

5 Select to run the EMR application as administrator (right-click on the application icon and select “Run as administrator” from the context menu) You will need to be in the Administrator group of the local machine or domain.

6 When setup is complete, select Yes, reboot the client now.

For Windows 7, Windows 8, and Server 2008 R2 systems, select Reboot later if prompted when setup completes the upgrade process.

7 Login to the client application and select Help > About to verify the build number:

Centricity © Electronic Medical Record 9.8
9.8.6_1 (1551) / DB 9.8.6_1

Install updated CCC content

EMR 9.8.6 includes updated CCC Basic encounter forms. These can be upgraded without having to reinstall the entire CCC Basic package. If you have not previously installed CCC Basic, see the CCC Basic Release Notes. If CCC Basic was previously installed, do the following:

1 Locate the CCC update files located in D:\CentricityStage\clinkits.
2 Open the directory on your server where the application is installed.
3 If you have CCC installed, make a backup of the Usrlibccc-basic.txt file in the Client folder.
Upgrade the Centricity EMR components

1. Copy the \CCC Basic\ Step 1 - Copy to the Client Folder\Immunization folder and paste into the Client folder.
2. Copy the file \CCC Basic\ Step 1 - Copy to the Client Folder\usrllibccc-basic.txt and paste it into the Client folder.
3. Merge any custom load commands and scripts in the usrlibccc-basic.txt file into the newly copied file.
4. Import the clinical kit:
   a. Log in to the application using a User ID with Admin privileges.
   b. Go to Setup | Settings.
   c. Select System > Import Clinical Kits.
   d. Click Import Clinical Kit.
   e. Navigate to the staging folder and locate folder Step 2 - Import Content.
   f. Select IMPORT_ALL_CONTENT.ckt and click Open.
   g. When prompted to overwrite, click Yes to all.
   h. Navigate to the staging folder and locate folder Step 4 - Import HTML Support Content.
   i. Select IMPORT_ALL_HTML_SUPPORT_FORMS.ckt and click Open.
   j. When prompted to overwrite, click Yes to all.
5. Copy the contents of the Step 3 - Copy to the HTML Folder from the package into the jboss server folder (usually C:\Program Files\<Centricity Practice Solution>\jboss\server\default\deploy\<Database Name>\CentricityPracticeWS.war\EncounterForms\). When prompted, click yes to overwrite existing files.
   Where <Centricity Practice Solution> is the name of your application and <Database Name> is your database name.

Install optional components

Install Datalink

Since EMR 9.7, Datalink has been an optional module. If you are upgrading from EMR 9.6 or older, Datalink must be installed separately.

1. Open the Centricity Stage folder. Copy the Datalink folder and paste it inside the ServiceLayer folder.
2. Run Setstage and redeploy the Service Layer.
3. Replace the datalink.war file backed up earlier.
4. Login to the EMR client. Go to Setup > Settings > System > Optional modules. Check Enable Datalink.

Update WebFramework

After updating the server and clients, update EMR WebFramework:

1. On the Centricity Framework server, copy the CFEMR folder from the Centricity Stage or Service pack directory.
2. Open the CFEMR folder. Right-click on setup.exe and select Run as administrator.
3 Click Yes to the message “This Setup would perform an upgrade of EMR_Webframework. Do you want to continue?”

4 Click Next to open the CF Admin Login page.

5 Enter the CF Admin username and password, and then click Run.

EMR 9.8.6 version information

Login to the client application and select Help > About to verify the build number.

- Client: 9.8.6_1 (1551)
- Server: 9.8.6_1
- Service Layer: Build 1630
- BMAC: Build 12.0.0.1581
Saving and restoring the network training database

For clinic training, you can customize the EMR application Network Training database to resemble the clinic’s real-life patients. It is more effective to train on data that reflects familiar clinical situations.

The following procedures explain how to restore the Network Training database to its customized version after changes have been made during training. This eliminates the need to recreate the custom database for the next training.

!!! To interact directly with the EMR application database using Oracle tools requires an additional Oracle Standard Edition license. Contact Oracle for details. For the most up-to-date information about tools and features, consult your Oracle documentation.

!!! Commands in export/import procedures are case-sensitive. Type them exactly as they appear.

Export / import Network Training on a Windows server

Gather the following information:
- Drive name of the server where Oracle is installed.
- Name of the instance on the server where Oracle is installed.
- Name of the database that has been customized.
- A password to access the database.

If you do not know this password, ask your Oracle system administrator.

Prepare and export the Network Training database

1. On the server where Oracle is installed, log in as the system administrator.
2. Create a backup file of drive_name\oracle\mlserver\SID\imports\tutdb.dmp
   For drive_name, substitute the drive name of the server where Oracle is installed.
   For SID, substitute the name of the instance on the server where Oracle is installed. This example uses emr for the SID.
   For example, F:\oracle\mlserver\emr\imports\tutdb.dmp.
   
✓ You use this backup file to restore the original Network Training database. For instructions on how to restore the original Network Training database, see Restore the original Network Training database.
3 In a text editor, type

```
userid=tut/password@database_name
owner=tut
feedback=10
file=drive_name\oracle\mlserver\sid\imports\tutdb.dmp
```

For `password`, substitute the password for accessing the database. If the password hasn't been changed since the installation of the EMR application, use the default password `tut`.

For `database_name`, substitute the name of the customized database.

Type the path for `file=` on one line.

4 Save the Notepad file as `tutexp.par` in `drive_name\oracle\mlserver\SID\imports`.

!!! Verify that the editor has not added a .txt extension to this file.

5 Confirm that no one is logged in to Network Training in the EMR application:

a) Open a DOS window, and at the server prompt, type

```
sqlplus/nolog
```

b) At the SQL*PLUS prompt, type:

```
SQL>connect tut/password@database_name
```

You see a message that the server is connected.

c) At the SQL*PLUS prompt, type:

```
select distinct wsid, description from worksta w,v$session v,v$access a
where
  a.sid=v.sid and
  a.owner='TUT' and
  substr(v.username,2) = w.wsid and
  substr(v.username,1,1) = 'W' and
  length(v.username) > 2;
```

✓ To avoid data entry errors, copy and paste this script as plain text.

You see a list of users who are logged in to Network Training. The list consists of the Workstation ID and the workstation description, both of which can be found in the CFW.INI file on the hard drive of each workstation.

d) Ask everyone listed to exit Network Training.

e) Type:

```
exit
```

6 While still in at the command line, type on one line

```
exp parfile=
  drive_name\oracle\mlserver\sid\imports\tutexp.par
```

7 Type:

```
exit
```
Import a customized Network Training database

After a training session, you can return the Network Training database to its customized version. On a slow server, the time to delete the current database and import the customized database can be up to 30 minutes.

1. On the server, log in as the system administrator.
2. Confirm that no one is logged in to Network Training in the EMR application.
   For help with this step, refer to Prepare and export the Network Training database.
3. From the Task bar, click Start | Programs > Centricity Practice Solution > EMR Server > DATABASE_NAME > Reset Training Database.
   For DATABASE_NAME, substitute the name of the customized database.
4. In the DOS window, when you are asked for a password, type the password for access to the database.

!!! You cannot see the password as you type in the DOS window.

If you see the message “Not Connected,” or if the customized database is not imported, you’ve entered the wrong password. Close the DOS window and start again at step 3.

Restore the original Network Training database

After restoring a customized Network Training database, you may want to return to the original Network Training database. The following procedure explains how to restore the original Network Training database.

1. Locate the backup file created when you prepared and exported the Network Training database.
2. Verify that it is named tutdb.dmp.
3. Go to the following location and replace the existing tutdb.dmp with the backup file:
   drive_name\oracle\mlserver\sid\imports
4. Use the same import procedure used to import a customized Network Training database.