



Waters
THE SCIENCE OF
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Empower 3 Service Release 3

Release Notes

716005266
Revision B

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General information

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Empower 3 Service Release 3

GxP compliance requirements

When you install Empower Software for the first time, or when you uninstall the software, perform software qualification to meet GxP compliance requirements. Any time you install or uninstall software in a GxP environment, Waters recommends that you follow your company's management-approved standard operating procedures for changing software.

To confirm that the application update did not affect any data, reprocess a data set before and after you install the software, and then verify that the results are equivalent.

Run the Verify Files utility or the SystemsQT for Empower IQ, and review the resulting file for an entry that states "No installation changes were detected."

Anti-virus considerations

Some real-time virus scanners mistake normal data acquisition and instrument control for virus activity, and thus interfere with proper operations. Full-system scans and live updates can be network-intensive, disk-intensive, and CPU-intensive, and they can also interfere with normal data acquisition. Schedule scans and updates for idle times when data acquisition does not occur.

Certain anti-virus program features like "intrusion prevention" and "tamper protection" can also interfere with normal operation. Disable them as well.

Empower installations

For Empower software installations, exclude the Empower installation folder (usually `C:\Empower`) and its sub-folders.

System and software requirements

Empower 3 Service Release 3 software supports Windows 7 Service Pack 1 (SP1) (Personal, Acquisition Client, and LAC/E), Windows 10 Professional and Enterprise (Personal, Acquisition Client, and LAC/E), Windows Server 2008 R2 SP1 (Standard and Enterprise), and Windows Server 2012 R2 (Standard). Also, Empower 3 Service Release 3 supports Amazon Web Services (AWS) 2012 R2 Server AMI, AWS WorkSpace 2008 R2 Datacenter Server with Windows 7 Experience, and AWS Windows 2016 Server with Windows 10 Experience. For more information about AWS, see *Empower Cloud Release Notes (716005296)* and *Empower Cloud Deployment Guide*.

Note: Support includes English, Japanese, Simplified Chinese, and Korean distributions of Empower 3 software.

Specifically, Empower 3 Service Release 3 supports these platforms and operating systems:

Platform ¹	Operating systems
Personal workstation or Client or LAC/E module	<ul style="list-style-type: none"> • Windows 7 Professional or Enterprise with SP1, 64-bit • Windows 10 Professional or Enterprise, 64-bit
Database server	<ul style="list-style-type: none"> • Windows Server 2008 R2, Enterprise or Standard Edition with SP1, 64-bit • Windows Server 2012 R2 Standard Edition, 64-bit • Red Hat Enterprise Linux Server 6.8 • Red Hat Enterprise Linux Server 7.4 • Red Hat Enterprise Linux Server 7.5
File server	<ul style="list-style-type: none"> • Windows Server 2012 R2 Standard Edition, 64-bit • Windows Server 2016 Datacenter and Standard
Citrix Server XenApp 7.6	<ul style="list-style-type: none"> • Windows Server 2008 R2, Enterprise or Standard Edition with SP1, 64-bit • Windows Server 2012 R2 Standard Edition, 64-bit
Citrix Server XenApp 7.15 LTSR CU2	<ul style="list-style-type: none"> • Windows Server 2016 Datacenter and Standard
LAC/E Module	<ul style="list-style-type: none"> • Configuration 12 is supported if the operating system was upgraded to Windows 7 and the RAM memory was increased to 4GB. • Configuration 13 is supported if the operating system was upgraded to Windows 7 and the RAM memory was increased to 4GB. • Windows 14 is supported with Windows 7 Professional 64-bit for Windows Embedded Enterprise, Service Pack 1 (English and Japanese). • Configuration 15 is supported with Windows 7 Professional (64-bit, for Windows Embedded Enterprise) SP1 and Windows 10 Enterprise 2016 LTSC (Long Term Service Branch) 64-bit. • Configuration 16 is supported with Windows 7 Professional (64-bit, for Windows Embedded Enterprise) SP1 and Windows 10 Enterprise 2016 LTSC (Long Term Service Branch) 64-bit.

¹All platforms run on Oracle version 12.1.0.2.0.

Note: Solaris 10 is no longer supported starting with Empower 3 Service Release 3.

See also: The *Empower 3 Installation, Configuration, and Upgrade Guide* (715005266).

In addition to testing on the platforms listed above, Empower 3 Service Release 3 was also tested in a VMware vSphere v6 environment.

Driver compatibility

Empower 3 Service Release 3 supports Driver Pack 2017 Release 2 on Windows 7 only or Driver Pack 2018 Release 1 on both Windows 7 and Windows 10.

See: For information on the drivers, refer to *Waters Driver Pack 2017 Release 2 Release Notes* (716005259) or *Waters Driver Pack 2018 Release 1 Release Notes* (716005632).

NuGenesis SDMS and NuGenesis LMS compatibility

Empower 3 Service Release 3 is compatible with NuGenesis 8 LMS SR-2 (NG 8 SR-2) components as follows:

- The NuGenesis LMS base kit (SDMS) requires the NuGenesis LMS 8 SR2 SDMS Win 10 client and Data Adapters Release 3 Hotfix 2, which applies to Windows 10 and Windows 7 client machines.
- The NuGenesis LMS Option kit (ELN and Connectors) requires NG8 LMS SR2 HF6, and/or NG8 LMS Empower Interface 1.1. HF2, and/or NG8 LMS Connectors 1.1 HF1, which is compatible with Windows 7.

See: The *NuGenesis LMS (NuGenesis 8 Service Release 2) SDMS Win 10 Client Release Notes* (716004881) and the *NuGenesis LMS (NuGenesis 8 SR 2) Hotfix 6 Release Notes* (716005620) for complete information.

Note: The NuGenesis SDMS Win 10 Client supports both Windows 10 and Windows 7. For SDMS users, the NuGenesis SDMS Win 10 Client is required when using Empower 3 Service Release 3 for both Windows 10 and Windows 7.

Requirement: If you are using SDMS components in an Empower 3 SR3 AWS cloud environment, the NuGenesis LMS SR2 SDMS Windows 10 Client and Data Adapters Release 3 Hotfix 2 components must be installed on premise.

Tip: Printing and archiving of Empower projects is performed from a client WorkSpace in the cloud running Windows 7 Experience.

Table 1–1: NuGenesis SDMS and Empower compatibility matrix

NuGenesis SDMS Version	Empower Version										
	E2 FR3	E2 FR5	E3	E3 SR1	E3 FR1	E3 FR2	E3 SR2	E3 FR3	E3 FR4	E3 FR4 Cloud	E3 SR3
NG8 SDMS/DAR0	*	Comp	*	NS	Comp	NS	NS	NS	NS	NS	NS
NG8 SMDS SR1/DAR1	*	Comp	*	Data Adapters Hotfix available	Comp	*	*	NS	NS	NS	NS
NG SDMS FR1/DAR2	*	Comp	*	Incomp	*	*	Comp	*	NS	NS	NS
NG8 SDMS SR2/DAR2	*	Comp	*	Incomp	*	*	*	Comp	NS	NS	NS
NG8 SDMS SR2/DAR3	*	Comp	*	Incomp	*	*	*	Comp	NS	NS	NS
NG8 SDMS SR2 Win10/DAR3 HF1	*	*	*	Incomp	*	*	*	*	Comp	Comp	*
NG8 SDMS SR2 Win10/DAR3 HF2	*	*	*	Incomp	*	*	*	*	Comp	*	Comp

Legend:

Comp	= Compatible
Incomp	= Incompatible
NS	= Not supported
*	= Supported under risk assessment

Note: Testing was done using only a Connectors Client installation.

Important: Waters products are structurally validated on a given platform. If you use an untested platform, you assume the risk that Waters has not tested that specific platform. Entries with an asterisk (*) are supported under risk assessment based on our knowledge of the software changes made at each release. If you encounter compatibility issues, Waters provides support in accordance with the terms of the Licenses, Warranties, and Support Services agreement. To

resolve compatibility problems, you might need to upgrade to a supported platform or to install a newer version of Empower software.

Deployment notes

Before you install Empower 3 Service Release 3

Before you install Empower 3 Service Release 3, back up all Empower software projects, library information, and databases, and restart the computer.

See also: The *Empower 3 Installation, Configuration, and Upgrade Guide* for complete installation instructions.

Install Empower 3 Service Release 3

You can install Empower 3 Service Release 3 (SR3) by downloading it from the Waters website or from the installation media.

Restriction: You cannot roll back or remove an Empower 3 Service Release 3 installation. If you want to uninstall Empower 3 SR3, you must uninstall Empower 3 software.

Requirements:

- You must upgrade to Empower 3 Service Release 3 from Empower 3 Feature Release 4. If you currently are using a version of Empower prior to Empower 3 Feature Release 4, you need to install or upgrade to Empower 3 Feature Release 4, and then upgrade to Empower 3 Service Release 3.
- You must have local administrator privileges to install Empower 3 Service Release 3.

You can install Empower 3 SR3 in the following ways, depending on your system configuration:

Computer configuration	Installation process
Single computer running a supported Windows operating system	<ul style="list-style-type: none">• Installation wizard• Silent installation (Command line interface)
Multiple computers: Clients, LAC/E modules, or Citrix servers	<ul style="list-style-type: none">• Installation wizard• Silent installation (Command line interface)• Push installation (PsExec utility)

To install Empower 3 SR3 on a single computer:

1. In Windows Explorer, browse to the folder containing the `Empower3SR3Setup.exe` file that you downloaded from the www.waters.com (or browse to the folder on the installation media) and double-click the `Empower3SR3Setup.exe` file.

Requirement: Ensure that you are logged in to the computer as a local administrator. If necessary, right-click the `Empower3SR3Setup.exe` file and select `Run as Administrator`.

2. Follow all the prompts to complete the installation.

Note: If you have problems installing Empower 3 SR3 due to a Verify Files issue, contact your local Waters Support organization.

3. After the installation finishes, restart the computer.
4. Log on to the computer, and then log on to Empower.
5. If the computer is in a client/server environment, when prompted to update the database, type the password `EMPOWER3CSUPDATE`, one word in all uppercase letters.

Result: Empower 3 Service Release 3 updates the database, but not the Oracle version.

Performing a silent installation

You can install Empower 3 SR3 by using command line options or by specifying commands in a response file.

To perform a silent installation from a command line:

1. In a Command Prompt window, if required, change to the directory that contains the file `Empower3SR3Setup.exe`.
2. At the command prompt, specify the following command along with the required line options, and any other options you want to use, as listed in the following tables:
`Empower3SR3Setup.exe /s /v" /qn"`

Full command line:

```
Empower3SR3Setup.exe /s /v"WAT_RESTART=NO  
WAT_LOG_FILE_NETWORK_LOCATION="<SHARE>\e3_Logs" /qn"
```

Command line with language selection:

```
Empower3SR3Setup.exe /s /L1033 /v"WAT_RESTART=NO  
WAT_LOG_FILE_NETWORK_LOCATION="<SHARE>\e3_Logs" /qn"
```

Table 1–2: Command line options

Option	Description	Required	Default Value
/s	Silent mode	Yes	
/L	Installer language: <ul style="list-style-type: none"> • L1033 is English • L1041 is Japanese • L1042 is Korean • L2052 is Chinese 	Yes	
/v	Installer arguments. Passes one or more command line options to notification services.msi. When including multiple command line options, enclose them in quotation marks. Rule: Do not include a space between the /v and the command line option.	Yes	
/qn	Installs the software without displaying the user interface.	Yes	
WAT_LOG_FILE_NETWORK_LOCATION	Destination share for the installation log. This share must be writable by everyone.	No	None
WAT_RESTART	Restart system.	No	Do not restart

The WAT_LOG_FILE_NETWORK_LOCATION option copies the installation log to the network share. If the installation is successful, the name of the log file is ERR_computername_datetime_empower3.log. For example: AS-27_2018-8-31_12-55-17-235_Empower3.log. If the share is not accessible, the installation log file is created in the local Windows directory. If you do not supply the WAT_LOG_FILE_NETWORK_LOCATION option, the log is created locally.

3. After the installation finishes, restart the computer.

4. Log on to the computer.
5. Log on to Empower.
6. If the computer is in a client/server environment, when prompted to update the database, type the password `EMPOWER3CSUPDATE` (one word, all uppercase letters).

Performing a push installation

When installing Empower 3 SR3 on multiple computers (push installation), use the Psexec utility. You can download the latest version from <http://technet.microsoft.com>.

Requirements:

- Install the Psexec utility on the system from which you execute the push installation. To install this utility, copy it to any file path.
- You must have administrator privileges for each client.
- You must use the domain user who is part of the local administrator group.

To perform a push installation of Empower 3 SR3:

1. Create a text file, and within it, specify the name or IP address of each client computer on a separate line, and then save the file.
2. Run the following commands from a Command prompt or create a batch file containing the Empower 3 SR3 upgrade push install options:

Using the administrator account:

```
PsExec @<PATH_A>\File.txt -u DOMAIN\USER -p PASSWORD -d <PATH_B>
\Empower3SR3Setup.exe /s /v" WAT_RESTART=NO
WAT_LOG_FILE_NETWORK_LOCATION="<PATH_C>" /qn
```

Selecting a language:

```
PsExec @<PATH_A>\File.txt -u DOMAIN\USER -p PASSWORD -d <PATH_B>
\Empower3SR3Setup.exe /s /L1033 /v" WAT_RESTART=NO
WAT_LOG_FILE_NETWORK_LOCATION="<PATH_C>" /qn
```

PsExec command line options	Definition	Required
PATH_A	Path to the text file that contains the clients.	Yes
File	Name of the text file.	Yes
PATH_B	Path to the Empower 3 Service Release 3 media should be network share.	Yes

PsExec command line options	Definition	Required
PATH_C	Path to copy the installation log located on a network share.	Yes
-p	Password.	Yes
-u	User name.	Yes
-d	Do not wait for process to terminate (non-interactive). This command launches installation on multiple machines simultaneously.	Yes

3. After the installation finishes, restart the computer.
4. Log on to the computer, and then log on to Empower.
5. If the computer is in a client/server environment, when prompted to update the database, type the password `EMPOWER3CSUPDATE`, one word in all uppercase letters.

Push Installation of Empower 3 SR3 on multiple Empower Citrix servers

When installing Empower 3 SR3 on multiple Empower Citrix servers, use the PsExec utility and the Waters command line interface and options. You can type the commands in a command window or in a batch file.

Requirement: Confirm that the default admin\$ share is enabled on all Empower Citrix servers on which you plan to install Empower 3 SR3.

To perform a push installation of Empower 3 SR3 on multiple Empower Citrix servers:

1. From the following website, download the currently available version of the PsExec utility into any folder on a host machine: <http://technet.microsoft.com>

Requirement: To perform a push installation, you must have a domain user with administrator privileges on each Empower Citrix server.

2. Using a text editor, create a text file (such as `filename.txt`), and within it, specify the name or IP address of each Empower Citrix server on a separate line, and then save the file.
3. To set the mode to install, use a text editor to create a batch file (such as `PushCitrix.bat`). Within this file, specify the following commands:

```
change user /install
```

```
<path_to_Empower_media>\Empower3SR3Setup.exe /s /v"WAT_RESTART=Yes  
WAT_LOG_FILE_NETWORK_LOCATION="<path_to_log_file>" /qn"
```

- For *path_to_Empower_media*, specify a valid path to the Empower 3 Service Release 3 software media. This path must be accessible by the Empower Citrix server.
- For *path_to_log_file*, specify a valid path to the location where the installation log files will be stored. This location must be on a share that is write-accessible to the domain users who will perform the push install.

Tip: The above is an example batch file. The Restart command and log file location are optional. If Restart is not included in the command line, users will be prompted to restart the computer after installation. If the file location is not specified, the log file is created locally, wherever Empower is installed. A message appears to notify users that the file has been created.

4. On the host computer, run the batch file using the following command line syntax:

```
PsExec @<path_to_names_file>\file -u domain\username -p password -h  
-d CMD /C <path_to_batch_file>\PushCitrix.bat
```

 - For *path_to_names_file*, specify a valid path to the text file on the host machine that contains the Empower Citrix server names
 - For *path_to_batch_file*, specify a valid path to the location of the share that contains the batch file
5. Log on to each Empower Citrix server.
6. Log on to Empower.
7. When prompted to update the database, type the password `EMPOWER3CSUPDATE` (one word, all uppercase letters).

Result: Empower 3 SR3 updates the database and not the Oracle version.

Important: After installing Empower 3 Service Release 3, when you log in to Empower, the software automatically updates your projects. The time required for the update to SR3 depends on the amount and complexity of the projects.

Configuring an Empower file server

An Empower 3 FR4 file server allows you to store and retrieve Empower raw data on a computer other than the Empower 3 FR4 database server. The Waters Service allows computers on which it is installed to act as a file server. The file server contains the raw data shares that are configured within the Empower 3 FR4 software. Users can store project raw data on these file shares. The service provides secure access to Empower software raw data files via the Empower application. Although your domain administrator can create a custom domain group and use this group to grant Read-Only access to these files for Empower users, Write privileges are granted to these same users only through the Waters Service and only when they run Empower software.

Tip: If you install an Empower client on the file server, the DCOM and firewall settings are automatically installed by Empower. You can verify these settings after installing the client.

Note: Occasionally, problems can occur due to lack of user permissions or improperly configured DCOM settings. For details about DCOM settings installed by Empower, see the *Empower 3 Installation, Configuration, and Upgrade Guide (715005266)*.

If you plan to change the computer name on which you installed Waters Service, follow these guidelines:

- Change the computer name before you install Empower software.
- Do not change the computer name after you install Empower software.
- The computer name must be less than 16 characters in length.
- The computer name must begin with an alphabetic character (A to Z), and cannot begin with a numeric character (0 to 9). For example, `Empower123` is acceptable for a computer name, but not `123Empower`.

Requirement: If you are using real-time virus scanning, after installation, exclude all Empower-related directories and their sub-directories, and all raw data shares and directories, from the scans. Some real-time virus scanners mistake normal Empower functionality for virus activity and can cause data buffering or cause data acquisition to stop.

Verify the Empower 3 SR3 installation

You can verify that Empower 3 SR3 was installed successfully by running a utility called **Verify Files**. Running Verify Files creates a `checksum.txt` file that maintains a record of all Empower options and service packs installed on an Empower computer. The `checksum.txt` file also verifies the integrity of disk files by comparing their current CRC and sizes with original values recorded during installation of the base software and any installed option or service pack.

To verify your Empower installation:

Click **Start > All Programs or All Apps > Empower > Verify Files**.

Tip: The `checksum.txt` file is created during the installation of Empower 3 FR4. When you run the **Verify Files** utility after the installation of Empower 3 SR3, the `checksum.txt` file includes a time stamp in the file name.

To view the `checksum.txt` file:

From Windows Explorer, navigate to the `\Empower\Script` directory, and then double-click the `checksum.txt` file.

To confirm that Empower 3 SR3 is installed on the computer:

Click **Start > All Programs > Empower > Empower Installation Log** and search for lines similar to these:

```
=== Logging Started: 8-7-2018 13:27:16 - Empower 3 Service Release 3
===
***** Product: Empower 3 Service Release 3
[13:27:16]: Empower 3 Service Release 3 Installer Setup was
initialized.
[14:21:33]: The Empower 3 Service Release 3 Installer has successfully
completed installing Service Release 3 on this computer.
[14:21:33]: Empower 3 Service Release 3 Installer has completed.
=== Logging Stopped: 8-7-2018 14:21:33 ===
```

Installing instrument drivers

If you want to install instrument drivers for one or more instruments on an AWS WorkSpace client with Windows 10, or on Windows Server 2016, use the Instrument Driver Pack media that was supplied with Empower 3 FR4. See the section [Driver compatibility](#) for specific driver pack versions supported in this release.

Visit the Waters website (www.waters.com) for the most recent instrument drivers. Refer to the appropriate installation guide and release notes for the driver.

Important: To install instrument drivers on an AWS Windows 10 Experience client or on a Windows 2016 Server, you must use a command prompt to run the `setup.exe /KB` command to invoke the Deployment Manager.

To ensure a successful instrument driver installation with Windows 10 Experience:

1. Navigate to the directory that contains the driver pack `setup.exe` file.
2. Using a command prompt, run the following command: `setup.exe /KB`.

Result: The Deployment Manager opens, displaying the Ready to Install page. Review the instruments to be installed, and then click **Next** to continue installing instrument drivers.

Creating an external tables directory for Message Center nearline tables

When upgrading to Empower 3 Service Release 3 on a custom-built Empower database server (Red Hat or Windows-based server with your own Oracle license), you must create a directory called `EXTERNALTABLES` on the database server. The `EXTERNALTABLES` directory stores Message Center nearline tables in Oracle external table files.

To create an external tables directory for Message Center nearline tables:

1. Update your Empower 3 FR4 database to Empower 3 SR3 by logging on to an Empower 3 SR3 node.

Note: Only an Administrator user can update the database by typing the `EMPOWER3CSUPDATE password`.

2. From a client or server, connect to the database using sqlplus and one of these Oracle database users: millennium, system, or sys as sysdba.
3. Run the following query: `<select directory_path from all_directories where directory_name = 'EMPOWER_EXT_DIR';>`.
4. Create the `EXTERNALTABLES` directory in the path that resulted from the query you executed in the previous step.

Example:

```
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit
Production
With Partitioning, OLAP, Advanced Analytics and Real Application
Testing options
SQL> select directory_path from all_directories where directory_name =
'EMPOWER_EXT_DIR';
DIRECTORY_PATH
-----
/run/media/oracle/oracle/empower_db/EXTERNALTABLES
```

Important:

- When you back up the database using WDM and choose to back up your project raw data files, the Oracle external tables (Message Center nearline messages) are included in the backup. If you use a custom application to back up the raw data files, or if you have a custom-built server, ensure that you back up the Oracle external tables (Message Center nearline messages) in synch with your database backups. You must maintain this synchronization between the Oracle external tables and the database backups to ensure that all tables are properly backed up and restored. To restore the Oracle external tables (Message Center nearline messages), copy them to the `EXTERNALTABLES` directory you created and Empower software restores them automatically.
- For Empower workstations, when you use the Backup Database wizard in Configuration Manager to back up the database, and the Restore database utility (`x:\Empower\Bin\restoredb.exe`) to restore the database, Oracle external tables (Message Center messages that are stored in nearline tables) are backed up and restored simultaneously with the database.

Empower 3 cloud deployment guidelines

Waters supports installing the Empower software in an Amazon Web Services (AWS) cloud environment. Specific policies control the AWS services required to run the Empower services in the cloud. The topics below list the services used and the policies accessed while deploying the Empower server and clients in an AWS cloud environment.

For a list of all available AWS policies, see the [AWS website](#). For additional information about using Empower in an AWS cloud environment, see the *Empower Cloud Release Notes* (716005296).

AWS services and policies required for running Empower services in the cloud

Deploying the Empower database, file servers, and Empower clients in the cloud employs the following AWS services.

Table 1–3: General-purpose AWS services

Service name	Purpose
Virtual private cloud (VPC)	<p>Provides a secure network environment for services and applications within the AWS environment.</p> <ul style="list-style-type: none">• Network creation, update, and delete• Subnet creation, update, and delete• Creation of the NAT Gateway, routing tables, internet gateways, endpoints, DHCP option sets, network ACLs, and VPN connections
AWS Direct Connect	Ensures connection stability for on-premise LAC/E modules

Amazon has a wide set of predefined policies already available to control access to the required services. However, you can create custom policies whenever you need permissions that are not predefined in an Amazon policy. For example, the Amazon-managed policy offers full access to WorkSpaces only through SDK and CLI. Providing full access to WorkSpaces through the console requires that you create the WorkspacesCustom policy.

The table below lists the minimum privileges (AWS policies) that govern the AWS services accessed when deploying Empower in the cloud.

Table 1–4: Services and policies accessed to deploy the Empower server stack and clients in AWS Cloud

Service name	Client/ server	Purpose	Policy granting permission
AWS Identity and Access Management (IAM) ¹	C/S	<ul style="list-style-type: none"> • Change and management of AWS user passwords • Creation of IAM Roles and instance profiles 	<ul style="list-style-type: none"> • AmazonEC2FullAccess • IAMFullAccess
AWS CloudFormation ¹	S	<p>Manages these user actions:</p> <ul style="list-style-type: none"> • List stacks • Describe actions taken on stacks • Estimate template costs • Validate the template • Create, update, delete stack • Set stack policy permissions 	<ul style="list-style-type: none"> • ServiceCatalogEndUserFullAccess • AWSMarketplaceFullAccess
Amazon EC2 ¹	S	<ul style="list-style-type: none"> • Instance creation, update, and delete • Various operations on volumes, snapshots, security groups, elastic IPs • Creation and management of key pairs • AMI creation • CloudWatch metrics 	<ul style="list-style-type: none"> • AmazonEC2FullAccess • AWSDirectoryServiceFullAccess • AWSMarketplaceFullAccess
AWS Marketplace ¹	S	Deployment of the Empower server stack	<ul style="list-style-type: none"> • AWSMarketplaceFullAccess

Table 1–4: Services and policies accessed to deploy the Empower server stack and clients in AWS Cloud (continued)

Service name	Client/server	Purpose	Policy granting permission
AWS Directory Service ¹	C/S	Provides the required Active Directory (AD) domain environment for Empower. Note: Depending on your AD needs, check the appropriate directory type. Once configured, the directory is used during stack creation. The Empower servers are deployed within the specified AD domain.	<ul style="list-style-type: none"> AWSDirectoryServiceFullAccess
Amazon WorkSpaces ¹	C	Creation of the Windows instances and cloud desktop bundles for Empower clients	<ul style="list-style-type: none"> WorkspaceCustom
AWS Key Management Service ²	S	Additional service	<ul style="list-style-type: none"> AmazonWorkSpacesAdmin
AWS Service Catalog ²	S	Additional service	<ul style="list-style-type: none"> ServiceCatalogEndUserFullAccess
Amazon CloudWatch ²	S	Additional service	<ul style="list-style-type: none"> AmazonEC2FullAccess
Elastic Load Balancing ²	S	Additional service	<ul style="list-style-type: none"> AmazonEC2FullAccess
Amazon SNS ²	S	Additional service	<ul style="list-style-type: none"> AWSDirectoryServiceFullAccess
Amazon S3 ²	S	Additional service	<ul style="list-style-type: none"> ServiceCatalogEndUserFullAccess AmazonS3FullAccess
AutoScaling ²	S	Additional service	<ul style="list-style-type: none"> AmazonEC2FullAccess

¹ AWS services required to create the Empower server stack

² Additional services automatically accessed by the services that deploy the Empower server stack and clients in AWS cloud

Pharmacopeia versions

Pharmacopeia is a set of laboratory practices, guidelines, and calculations published by an authority for the preparation of medicines, drugs, and other remedial substances. Empower System Suitability software bases its tests on standard laboratory guidelines and calculations, including the United States Pharmacopeia (USP 41), the European Pharmacopeia (EP 9.5), and/or the Japanese Pharmacopeia (JP 17).

New features


Empower 3 Service Release 3 includes the following new features and enhancements.

Message Center

For more detailed information on Message Center, see the "Message Center" topic in the Empower 3 Service Release 3 Help.

The Message Center redesign includes these improvements:

- You open the Message Center from any Empower application; for example, Configuration Manger, Project, QuickStart, Method Validation Manager from the **Tools** menu, or by clicking

the **Message Center icon** . The Message Center opens in a separate window and the Message Center icon appears in the Windows taskbar.

Note: From the Walk-Up interface, click **View > Message Center**.

- The Message Center polls for new error messages every 30 seconds. If you are working in an Empower application, such as Run Samples, and an error occurs, the color of the **Message**

Center icon turns from blue  to red  in all your open Empower applications to notify you that an error occurred. To see the new messages, click the Message Center icon.

- For an Administrator user type, the Message Center contains these views which appear as tabs: **All Messages**, **Search Messages**, and **E-Mail Queue**. For non-Admin users with the **View Message Center for All Users** privilege, the **My Messages** and **My Group Messages** tabs are shown in addition to **All Messages** and **Search Messages** and **E-mail Queue** tabs. For non-Admin users without the **View Message Center for All Users** privilege, only the **My Messages**, **Search Messages**, and **E-Mail Queue** tabs are shown.
- 1,500,000 messages are stored in the Message Center. Once the Message Center contains more than 1,500,000 messages, the oldest 500,000 messages are moved from the online view automatically and stored in a nearline external table. You can search online messages only, or both online and nearline messages. All messages, online and nearline, are stored in the database.

- In the **Search Messages** view, you can search for messages using view filters, similar to the Project window. You can search messages by message ID, type, category, date, application, user, user location, project, and text within the message. The Message Center contains five default view filters that displays messages by category.
- When a user does not log in successfully, you can choose to be notified by an email rather than receiving a pop-up message.
- You can no longer purge messages from the Message Center in Empower or by using the Toolkit application.

Project integrity

For more detailed information on project integrity, see "Testing the integrity of a project" topic in the Empower 3 Service Release 3 help.

Project integrity enhancements:

- When you back up projects, two project integrity tests are automatically run: the first one occurs on the project stored in the database before the backup begins, and the test results are stored in the database. The second one occurs on the backed-up project when the backup is complete, and the result is stored in a text file in the location you specified during backup.
- You can perform an on-demand project integrity test at any time by selecting one or more projects in Configuration Manager, right-clicking, and then selecting **Test Project Integrity**. You can also right-click a project in Configuration Manager, and then select **Properties**. In the Project Properties dialog box, click the **Integrity** tab, and then click **Test Project Integrity**. You can only perform an on-demand project integrity test on projects you can access.

New privileges by user type

This release adds the following privileges to various types of users in Empower:

Table 1–5: Privileges implemented or moved in Service Release 3

Privilege	Description
View Numerical and Textual Results in Review (Management tab)	<p>Users without this privilege can view only the 2D chromatogram, with the baseline drawn for processed data. Users can still process automatically or manually and the software recalculates the results, but they are not visible.</p> <p>Users with this privilege can view all areas of Review.</p> <p>Default: All existing and default user types have this privilege enabled.</p> <p>Tip: Empower functionality for users is equivalent to earlier versions of Empower (versions prior to the implementation of this feature).</p>

Table 1–5: Privileges implemented or moved in Service Release 3 (continued)

Privilege	Description
Unlock methods (Methods tab)	Allows you to unlock all types of methods, for editing purposes. The Method Properties dialog box contains an Unlock button that unlocks the method. This feature is privilege-controlled.
Create System Alter System Delete System Bring System Online Take System Offline (Management tab)	These privileges provide management for the following: <ul style="list-style-type: none"> • The chromatographic systems within your network • The nodes of your enterprise network configuration • The backup options of your Empower environment
Create Node Alter Node Delete Node (Management tab)	All existing and default user types, except for the Guest user type, retain these privileges.
Modify Backup Options (Management tab)	
Allow Remote LAC/E Reboot (Management tab)	
	This privilege was moved from the Data Acquisition tab to the Management tab in the User Type Properties dialog box.

Tip: You can also manage privileges using the Empower Toolkit.

Injection and channel statuses

Injection Status and Channel Status, two new fields in the Project and Review windows, show what happens at acquisition.

A number of specific statuses help you understand the state of an injection or a channel. Injection statuses let you know whether acquisition is still in progress, whether an error or an instrument failure prevented its completion, or whether a particular injection is complete. The channel statuses indicate either the current acquisition stage or the post-acquisition state of a channel's data.

Table 1–6: Empower locations with Injection and Channel Status fields visible by default

Field	Visible in	
Injection Status	Project Window	<ul style="list-style-type: none"> • Injections tab • Channels tab • Results tab
	Review Window	<ul style="list-style-type: none"> • 2D Channels table • 3D Channels table
Channel Status	Project Window	<ul style="list-style-type: none"> • Channels tab • Results tab
	Review Window	<ul style="list-style-type: none"> • 2D Channels table • 3D Channels table
Result Codes	Project Window	<ul style="list-style-type: none"> • Results tab > Chromatogram Results table

In order to get a better insight into potential causes for acquisition issues, combine injection and channel status information with injection logs, the additional result integration codes, or any error messages on the plot, depending on whether you review raw or processed data.

See the specific Empower online Help topics ("Status of injections and channels" and "Understanding Injection and Channel Statuses") for a detailed explanation of these statuses and their combinations.

Full Audit Trail enhancement

The Full Audit Trail (FAT) lists the new **Shallow Copied Method** action when you copy a method between FAT projects, or when you clone an FAT project — if the New Project system policy **Allow shallow copies between FAT projects** is enabled and you selected the **Perform Shallow Copy of Methods** option in the Clone Project dialog box, or in the Copy Selection section of the New Project Wizard.

This supplements the FAT records, enabling you to find what system policies are applied to any FAT project.

Additionally, corresponding records of these actions appear in the system audit trail.

Additional entries in Project Audit Trail

When you delete a sample set, an injection, a channel, or a result set, audit trail items for the associated items that are deleted automatically appear in the Project Audit Trail, except fractions and peaks. Also, when you delete a result, a result set or a sample set, an injection, or a channel, a message stating which associated items are deleted is displayed.

Unlimited project quotas

Prior to Empower 3 Service Release 3, projects created in Empower software received a fixed tablespace quota. Now, projects do not receive quotas, and can instead utilize as much disk space as needed, up to the limit of available drive space. This increases processing capabilities, as tablespace quotas no longer constrain result collection. It also improves performance, while Empower no longer inspects project quotas at login, or when creating, restoring, or cloning projects. Existing projects also receive unlimited quotas.

The elimination of project tablespace quotas affects all related areas of the Configuration Manager. Instead of quota information, Empower displays information about the amount of used tablespace.

The following table lists the changes in the Configuration Manager.

Table 1–7: Configuration Manager areas impacted by the removal of project quotas

Area	Details
Privilege Change Project Quota (Management tab)	Removed from the list.
Configuration Manager projects view table	Column Tablespace Used replaced columns Tablespace Quota and Tablespace Free .
System Monitor window, Projects tab	
Project Properties dialog box, General tab	Group Database Tablespace now features the Used space, instead of Quota and Free space.
New Project Wizard - Tablespace page	<ul style="list-style-type: none">• Removed the group box referring to tablespace.• Renamed the page to New Project Wizard - Audit Trail and Data Processing Techniques.

Empower Programmer's Toolkit changes

The elimination of project disk space quotas necessitated removal of the create, backup, restore, and copy projects functions, and the removal of related Change Project Quota privilege.

QuickStart

You can now run SystemsQT from the QuickStart interface by clicking **File > Qualify Systems** in Run Samples.

Waters Database Manager (WDM) 1.8 support

Empower 3 SR3 supports version 1.8 of the Waters Database Manager application. When upgrading from Empower 3 FR4 on a server, the WDM application automatically updates from version 1.5 to version 1.8.

Oracle Sys account password

If you changed the default Oracle Sys account password prior to upgrading Empower software, you are prompted to type the new password during installation. Empower software automatically resets the Oracle Waters User password to match the Oracle Sys password.

Recommendation: Change the Oracle user passwords after you install the software, and periodically according to your organization's security policies and standard operating procedures. For requirements related to the Oracle user account passwords, see the *Empower 3 FR4 System Administrator's Guide*, section "Changing Oracle account passwords".

Send Oracle RDA (Remote Diagnostics Agent) reports to Waters Corporation

In WDM 1.8, you can create Oracle RDA reports, and then email the reports to Waters Corporation. Before you can create the Oracle RDA reports, you must update the SQLNET.ora file.

To update the SQLNET.ora file:

1. On an Empower server, open this file using a text editor like Notepad: `Oracle_Home:\Network\Admin\SQLNET.ora`.
Note: Oracle_Home is the Oracle drive and the 64-bit version of Oracle.
2. Search for: `SQLNET_AUTHENTICATION_SERVICES` and change the value from NONE to NTS.

Issues resolved in this release

This section lists the problems resolved in this release. The numbers identify issues that Waters personnel monitor within a system change request tracking tool.

Waters Database Manager (WDM) 1.8 resolved issues

This section lists the problems resolved in the Waters Database Manager application. The numbers identify issues that Waters personnel monitor in the Change database tracking tool.

SCR number	Description
203474	On the Configure Notifications page in the Waters Database Manager application, when you enable an alert notification for tablespace percent full exceeds a specified threshold, the threshold is based on the Tablespace maximum size and not the current size of the Tablespace.
203949	On the Configure Notifications page in the Waters Database Manager application, you can now enable and disable alert notifications, which notify you by email when the database is in a critical state.
203995	<p>On the Schedule backups page in the Waters Database Manager application, you can now create a database backup for selected days by specifying the days of the week that you want the backup to begin.</p> <p>Note: The Manage Scheduled Backups page lists the Start date and the interval (including the days of the week) that the database backup is scheduled to run.</p>
208185	On the Configure Datafile page in the Server section of the Waters Database Manager application, you can now enable and disable the ability to auto extend the datafile size limit automatically by selecting the Enable/Disable Auto-Extend check box.
215142	The Datapump Import page in the Waters Database application is now restricted to users who have the SYS_SUPPORT privilege. No other users can view this page in the Waters Database Manager application.
215532	On the Manage Backup Settings page in the Waters Database Manager application, you can now specify a network location where the raw data files are backed up to automatically when scheduled backups are run. The raw data file backup location can be a local path or network share; however, the OracleJobs Windows account must have write access to this location, the location cannot be a mapped network drive, and the path name cannot contain spaces.
215732	On the Get Support page in the Waters Database Manager application, when you click Send support information , the file sent to the email address specified contains additional system, Oracle diagnostic, and database information to assist Waters personnel in troubleshooting database or system issues.
215862	On the Configure Datafiles page in the Server section of the Waters Database Manager application, you can now change the file size of a database file (when auto-extend is not enabled) by typing a number in the Resize To field.
216147	In the main window, called the dashboard, in the Waters Database Manager application, the tablespaces that have exceeded the threshold specified in the Configure Notifications page appear in red text in the Manage Storage section.

46736

Previously, if you had Open Access configured so that a password was required on exit, System Audit Trail did not generate any `Unsuccessful Attempt to Confirm Identity` message when you provided an incorrect password, in both LDAP and non-LDAP mode.

Now, you get a message in the System Audit Trail if an incorrect password is specified when exiting Open Access, in both LDAP and non-LDAP mode, in case it was configured that a password is required on exit.

47535, 56178 and 56458

Previously, if you altered values in the User Properties dialog box and then clicked **Cancel**, Empower preserved/retained some of the changes.

Now, Empower no longer retains user property changes when you click **Cancel**.

49084 and 55942

Previously, Empower users who had the **Alter Any Project** privilege could create, alter, delete, lock, and unlock custom fields, even when these users did not have any of the specific privileges to perform those actions, because these privileges were included in the **Alter Any Project** privilege.

Now, the **Alter Any Project** privilege no longer includes custom-field-specific privileges that users do not explicitly have.

After upgrading to Empower 3 Service Release 3, all user types who had the **Alter Any Project** privilege prior to the upgrade get all the custom-field-related privileges granted by default.

Note: Empower captures the granting actions in the system audit trail, with `Empower System` as a user and `Modified` as part of the database update as miscellaneous information.

50243

Previous Empower versions captured the Verify Incomplete Data action only in the Audit Trail.

Now, the additional **Channel Status** field lets you know when data was `Verified As Complete`.

53031, 53546 and 55839

Previously, Empower allowed background processing of data that was still being acquired. This led to incomplete or empty results.

Now, Empower prevents background processing of data in channels that are still being acquired. Message Center informs that background processing for these channels cannot continue.

53392 and 54063

Previously, the only way to run a project integrity test was to back up or restore a project. Now you can also perform an "on-demand" project integrity test one of two ways:

- By selecting one or more projects in Configuration Manager (tree or table view), right-clicking, and then selecting **Test Project Integrity**.
- By right-clicking a project in Configuration Manager, and then selecting **Properties**. In the Project Properties dialog box, click the **Integrity** tab, and then click **Test Project Integrity**.

53598

Previously, the action of logging a user out of the Empower QuickStart Interface was wrongly recorded, in the project audit trail.

Now, both actions of logging a user in and out of the Empower QuickStart Interface are accurately recorded, in the system audit trail.

53805

The silent installation of Empower 3 SR3 using the switches `/S /v/qn` no longer causes an incorrect path in the registry for the HTMLDirectory key at `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Waters\Instruments`.

Also, after installation, there is no folder called `empowerinstruments` at the `Empower` folder level.

53845

Previously, messages reporting an instrument failure simply stated `Instrument Failure`. A number of these messages were improved to provide additional details for failures that occur in the Instrument Server while waiting for replies from instruments. The tables below list examples of messages that could originate from the wait loops associated with Setup, Ready Inject, Enable Channels, Query Subscriptions, Inject Occurred, and End of Run.

In the examples below, instrument addresses are set up using the formats indicated.

- Ethernet instrument addresses are comprised of the instrument type, the number sign (#), and the instrument serial number. For example: eSATIN#M07EST056M represents an eSATIN instrument with serial number M07EST056M.
- Serial and BusLAC/E instrument addresses are comprised of the instrument type, the @ sign, and a COM port number. For example: SAT/IN 2@1 represents a SAT/IN 2 instrument at port COM1.

Table 1–8: Example wait loop messages

Example Messages
Instrument Failure - Method setup timed out at 120.0 seconds. No reply from eSATIN#M07EST056M.
Instrument Failure - eSATIN#M07EST056M method setup failed.
Instrument Failure - eSATIN#M07EST056M failed while getting ready to inject.
Instrument Failure - Channel enabling timed out at 60000.0 seconds. No reply from eSATIN#M07EST056M, SAT/IN 2@1.
Instrument Failure - eSATIN#M07EST056M channel enabling failed.
Instrument Failure - Channel subscribing timed out at 30.0 seconds. No reply from eSATIN#M07EST056M.
Instrument Failure - eSATIN#M07EST056M channel subscribing failed.
Instrument Failure - End of run wait timed out at 612.0 seconds. No reply from eSATIN#M07EST056M.
Instrument Failure - eSATIN#M07EST056M failed at end of run.

Figure 1–1: Example messages as they might appear in Message Center

Message
<i>Instrument Failure - SAT/IN 2@1 failed at end of run.</i>
<i>Instrument Failure - End of run wait timed out at 613.0 seconds. No reply from SAT/IN 2@1.</i>
<i>Instrument Failure - SAT/IN 2@1 failed at end of run.</i>
<i>Instrument Failure - Fake@2 channel subscribing failed.</i>
<i>Instrument Failure - Channel subscribing timed out at 30.8 seconds. No reply from Fake@2.</i>
<i>Instrument Failure - SAT/IN 2@1 channel enabling failed.</i>
<i>Instrument Failure - Channel enabling timed out at 60000.2 seconds. No reply from SAT/IN 2@1, eSATIN#M07EST056M, Fake@2.</i>
<i>Instrument Failure - eSATIN#M07EST056M failed while getting ready to inject.</i>
<i>Instrument Failure - eSATIN#M07EST056M method setup failed.</i>
<i>Instrument Failure - Method setup timed out at 120.9 seconds. No reply from eSATIN#M07EST056M.</i>

53971 and 53038

In the Users table in Configuration Manager, the column label User LDAP Name was changed to LDAP User ID. This column displays the full UPN string. It is blank for local users. This column label now matches the label on the **General** tab of the **Users > Properties** page.

54026 and 55801

Now, only users with the **Alter Any Project** privilege can enable the **Default Touchdown % to 0.0** option in project properties, and only users with the **Alter Users** privilege can select the **Don't Show License Expiration Warning Messages (User Preference Setting)** check box in user properties.

54126 and 56397

Previously, querying the System Audit Trail was failing to list the expected entries when you applied the filter to bring all Archived and Removed records.

Now, the filter is accurately retrieving the records having the Archived and Removed Audit Trail status.

54523, 54529, and 54640

Whenever the background processing of a sample set did not produce any results, at the end of the process Empower added in the Project Audit Trail a message stating Deleted Result Set.

Now, Empower issues a separate message for this action: Removed Empty Result Set, with its corresponding miscellaneous explanation Empty Result Set container automatically removed by the Empower system because no results were produced.

54661, 55384, 55800, and 55901

Previously, the audit trail would not record the action of locking the channels of a sample set, result set or injection, initiated from one of these higher set containers when the first acquired channel in the sample set was already locked. Similar incorrect behavior for unlocking did not occur.

Additionally, the audit trail would fail to record the action of unlocking channels of a sample set, result set, or injection containing one or more already-locked channels if the first acquired channel was not included in the selection.

Now, the audit trail accurately records the action of locking/unlocking channels in the sample set or injection, and also records all the actions of locking/unlocking each individual channel.

54816

In an Empower environment, users without **Save Libraries** privilege were able to create libraries and edit library spectra.

Now, users cannot create libraries or modify library spectra unless they have **Save Libraries** privilege.

55434

Previously, Empower was failing to capture in the project audit trail the Abort actions performed while altering a running sample set, if the abort action happened at the end of an acquisition line. The action was correctly registered, though, if the abort happened before the acquisition on that particular line reached its end.

Now, abort actions are captured in both cases.

55540 and 51527

Now, when you restore a project containing a channel that you have manually verified as complete, Empower no longer marks the channel as incomplete.

55863

Previously, when you upgraded to a newer version of Empower, the installer displayed a message saying the action could not be completed due to a running Empower process. This was because of the Waters Email Service. Now the installer stops this service automatically, in order for it to complete successfully. The service is restarted as soon as you restart the system.

Note: The Waters Email Service is a default component with the Personal Empower installation, while it is a separate component for the Client/Server Empower installation.

55876

Previously, with full audit trail projects, when performing background processing of injections, sample sets or channels, or when reprocessing results, the related reason was not included in the Created Calibration and Updated Calibration lines of the audit trail. However, the reason appeared correctly when data was processed manually.

Now, the reason is accurately recorded in the project audit trail when performing background data processing.

55903

Previously, when backing up a project, the results of the project integrity test were not stored in the database. Now, when you back up projects, two project integrity tests are automatically run: the first one occurs on the project stored in the database before the backup begins and the result is stored in the database. The second one occurs when the backup is complete, on the backed up project, and the result is stored in the location you specified during backup.

56029

Previously, processing a broad unknown peak using a nonlinear Intrinsic Viscosity Fit failed to calculate the distribution for the peak when using 2nd-5th Order or Random Intrinsic Viscosity fit types. The peak fields dependent on the Intrinsic Viscosity Fit were blank, with processing codes V15, V07, and G50. Now, processing with a nonlinear Intrinsic Viscosity Fit works and correctly calculates the distribution and dependent peak fields.

56057

In a Chinese or Japanese Empower environment with system policy **Enforce Sign Off 1 before Sign Off 2** enabled, when you tried to perform a Sign Off 2, the Sign Off 2 could fail. Although a Sign Off 1 was present, an error message appeared in the Report Publisher stating `Sign off` on the following result IDs failed because they do not have a level 1 sign off.

The software now allows you to perform Sign Off 2 successfully.

56205

In Chinese installations of Empower, you can now add an integration event in the Add Integration Event dialog box in the Review window.

56321, 56357, and 56386

Previously, when the acquisition system lost connection with the Empower database during sample initialization, some of the channels were deleted from the acquisition server before the software recorded data in the database. This caused the following error to appear in the `recover.log` after the system recovered from buffering: `xxxx.dat deleted because no matching chromatogram with identifier xxxx.`

Now, Empower preserves channel data until the system recovers from buffering.

56433

Previously, when you wanted to create an instrument method and clicked **Save**, the Save As dialog box did not appear. However, the software saved the instrument method with the name "Untitled." Now, when you click **Save**, the Save As dialog box appears and you can save the method with the desired name.

Note: This only occurs in the Korean version of the software.

Known issues in this release

This section lists the known issues and solutions for this release. The numbers identify issues that Waters personnel monitor within a system change request tracking tool.

54687

In Browse Projects, when you apply a view filter, the number on the status bar is sometimes not updated to reflect the number of rows listed in the table.

54689

In Empower 3 SR3, online Help documents the restriction of the use of special language characters in a user password. The updated Help states that asterisks (*) cannot be used in passwords. This is incorrect. Asterisks (*) and other special characters (such as ! or &) can be used in passwords. However, passwords should not include any special language characters such as ä, ü, ö, è, or é.

55510

When you export a report that contains a large table using a report method, additional pound sign (#) characters are inserted into the file if the table spans more than one page. The # character indicates the start of the first row in the next section of the table.

Solution: Change the report page orientation from Landscape to Portrait or change the paper size so that the table prints without breaks.

55850 and 55882

You need to have the Guest user type on your Empower system and it should not be deleted. When you delete a user type, Empower deletes it from the database and reassigns all the users who were exclusively members of this user type to the Guest user type.

Solution: If you deleted the Guest user type, recreate it, with appropriate, limited privileges.

55918

When you delete a project that contains sub-projects, and then cancel the deletion, you can no longer access the parent project.

Solution: When deleting a project that contains sub-projects, delete all the sub-projects first, and then delete the parent project.

55920

It is possible to delete an Empower node during acquisition. When this occurs, acquisition continues to completion. The audit trail records the following actions:

- Acquisition started
- Empower node deleted
- Acquisition stopped (which occurred after the node was deleted)

The sample set records that the node and the chromatographic system were deleted prior to the date/time stamp of the sample set. Although these audit trail entries have an unusual appearance, they are accurate.

Recommendation: Before deleting a node, confirm that no chromatographic systems are connected to it.

56084

When creating a sample set or sample set method in the Run Samples window, if you change the entry in the Function column, it clears the entry in the Auto Additions column.

56125

In a report method, when you select the **Suppress data mismatch and wrong chrom channel type errors** check box, as the name indicates, the software does not suppress all errors. For example, the `Unable to load data to use for ordering in Composite Group` error is not suppressed. This error happens when a problem fetching criteria used to order the composite group exists.

56137

If you are backing up a project or performing an on-demand project integrity test while acquiring data on a workstation, data acquisition stops and the project integrity test fails. Wait until acquisition is complete before performing a project integrity test on an Empower workstation.

56212

In the Run Sample Set window, when you click **Select Printer**, the list may not include all network printers due to security settings when using Windows 10. This behavior does not occur when you select printers from either the Background Processing or Reporting window.

Note: To properly set up printers on computers running Windows 10, perform the following steps:

- From the Start menu, click **Local Security Policy**, and then click **Security Settings > Local Policies > Security Options**. Set the User Account Control: Run all administrators in Admin Approval Mode to **Disabled**.
- You need to change the security settings on both the client and the LAC/E.

56230

When you modify the Data Processing Policy **Allow Interactive Suitability when acquiring in RUN ONLY mode** in the System Policies dialog box, the system audit trail does not record the system policy modification.

Recommendation: Set this policy during the initial system configuration. When setting or clearing this policy, you must restart all Empower nodes to implement the change.

56258

In Browse Projects, when you view the Audit Trail by selecting channel(s) and then using **View As Audit Records**, records for completed data files are not included.

Solution: View the Audit Trail and sort by action and then by channel ID.

56264

Just-in-time (JIT) View Filter buttons are not disabled correctly in the Project window. If you apply an empty JIT view filter in the Project window, the two JIT View Filter buttons appear as enabled. After applying an empty JIT view filter, these buttons should be disabled and unavailable for use. Clicking either of the buttons may cause the JIT View Filter to return unexpected information. The buttons are correctly disabled in Configuration Manager and in the Message Center, after applying an empty JIT view filter.

Recommendation: If the JIT View Filter buttons in the Project window appear to be enabled after resetting and clearing the filter, do not click either of the View Filter buttons.

56298

When an existing MS processing method is migrated to Empower 3 FR2 or a later version, the Concentration parameters in the **Smoothing/Offset** tab of the processing method are replaced by MS Channel parameters. However, when an MS method is updated during the migration, the existing Concentration values are not transferred to the new MS Channel parameters. You must update the MS processing method to replace the values that were lost. You can find the missing values in the Processed Channel Description of a result that was previously processed with the updated MS processing method.

In all other types of processing methods (except GPC processing methods), the group name of the parameters changes from Concentration to 2D Channel. When these types of methods are updated during migration, it is not necessary to transfer the existing values because the only change is the name of the parameters group.

For a GPC processing method, no changes were made to the **Smoothing/Offset** tab.

56309

After restarting the network server, the messages in the **All Messages** or **My Messages** tabs in the Message Center might contain non-contiguous Message IDs. This does not indicate that messages are missing; it indicates only that the numbering is not consecutive.

56430

When searching for Message Center messages that reside in the Message Center nearline tables (i.e., the **Message Center nearline check box** is selected), and one or more of the nearline tables is missing or corrupt, the search does not retrieve any messages and an Oracle error occurs. Contact your System Administrator.

56485

If you performed a custom installation of an Empower client and installed the Empower application and the Oracle client on separate drives, when you uninstall Empower software using the Windows Control Panel **Add and Remove Features** option, only the Empower software is uninstalled, not the Oracle client.

Solution: When performing a custom installation of a Empower client, ensure that the Empower application and the Oracle client are installed on the same drive.

56500

For 3D data, the Channel Status might not update from `Data Being Acquired` to `Data Incomplete` when the instrument server process is interrupted during a running injection and

you open the channel in Review, or when you back up the project during a running injection and then restore and then open the project.

Note: The original source project, where acquisition goes to completion, does not have this issue. The issue appears only in the restored project.

The Channel Status is initially `Data Being Acquired`. When the data is brought into Review, the status incorrectly transitions to `No Data Acquired` instead of `Data Incomplete`, although the channel has enough data points for its status to be set to `Data Incomplete`. Once the status is set to `No Data Acquired`, the data is not viewable in Review.

Solution: It is possible to view the data acquired for the channel before the status has transitioned from `Data Being Acquired` to `No Data Acquired`. Follow the procedure below to view the acquired data if any of these conditions apply:

- You have a 3D channel with the status of `Data Being Acquired`
- The project was backed up during acquisition and you are viewing the backed up project that was restored, not the original source project
- The instrument server process stopped unexpectedly (InstrumentServer.exe crashed)

To view the acquired data:

1. Open the Review window with any other channel that does not exhibit the problem.
2. Right-click the **Zeroed Baseline** tab and open the plot properties.
3. On the **Overlay** tab, change the option from **Do Not Overlay** to either **Make Stack Plot** or **Overlay in Single Plot**. Click **Apply**, and then click **OK**.
4. From the **File** menu, select **Save Preferences**, and then close the Review window.
5. Open the Review window with the 3D channel that has the issue and you will see the correct status `Data Incomplete`.
6. You can now change the plot properties back to the original settings, and the correct status remains.

56502

If the Empower file server is not available when a user attempts to background process data, an incorrect warning message appears in the Message Center. The message states `Cannot continue background processing because channel is being acquired while the` actual problem can be the lack of connectivity to the file share. If you experience this message and you have confirmed that you are not acquiring data, contact your system administrator.

This problem can also occur due to lack of user permissions or improperly configured DCOM settings. For details about DCOM settings installed by Empower see the *Empower 3 Installation, Configuration, and Upgrade Guide* (715005266).

56517

In Empower 3 SR3 online Help, when you search for topics using the keywords `injection status`, the search results list three topics named `Columns in the 3D Channels Table`. Only one of these topics describes the columns in the 3D channels table. The other two topics correctly describe injection and channel status information. Selecting each of these topics from the search list opens the correct online Help topic with its correct title. The titles are also correct on the **Contents** tab. Only the titles in the search list are incorrect.

56539

When updating the Windows Empower database server, a password for the Oracle user SYS is requested. On some servers, the correct password is not recognized and the user will continue to be prompted with the message `Invalid password. Please enter a valid password`. If this behavior occurs and the user is certain they have typed the correct password, contact Waters Support through your local Waters office or submit an iRequest.

Tip: The user can cancel the upgrade at this point and resume using the database as an Empower 3 Feature Release 4 database.

Note: This issue only occurs on Windows database servers.

56567

If a project is locked as "Read Only" or "Process Only", the only data displayed in Review (both Pro and QuickStart interfaces) is the chromatogram and chromatogram markers. No metadata or results are displayed.

If the project is unlocked, the data is subsequently available in Review. The data is not missing, it is simply hidden due to improper logic for these projects' locks and the new privilege called **View Numerical and Textual Results**, which controls this type of data viewing in Review. The intention of this new privilege is to deter users from processing data into a desired or biased result while optimizing integration parameters.

Solution: This issue can be avoided if the project is unlocked.

Alternative: Re-lock the project by specifying the appropriate access through a custom World or Group user type. Specify a user type that is configured with the appropriate privileges to **View Numerical and Textual Results**, but also to prevent acquisition, processing, and so on (via **Project Properties > Access > Owner Group and World**).

Note: Waters plans to correct this issue in an upcoming database update for Empower 3 Service Release 3.

56584

When a user without the **View Numerical and Textual Results** privilege brings data into Preview, Report Publisher, or Compare, peak labels that are configured to print on the chromatogram plot (via the **Chromatogram Properties > Peak Labels** tab) are not visible. Additionally, the **Peak Labels** tab in Chromatogram properties is not available.

Note: The intent of the **View Numerical and Textual Results in Review** privilege is to remove the availability and functionality of the **Peaks Labels** tab of chromatogram properties in Review (both Pro and QuickStart interfaces) without affecting this behavior in Preview, Report Publisher, or Compare.

Solution: Empower allows the ability to create multiple user types for each user account. When you encounter this issue, you can configure a user to have different user types with the appropriate combinations of privileges to View Numerical and Textual Results, Save Results (this privilege pertains to background processing), and Save Results and Calibrations in Review.

INFLMS 6145

When you use Empower 3 Service Release 3 with NuGenesis 8 LMS SDMS Data Adapters 3 Hotfix 2 and NuGenesis 8 LMS SDMS SR2 Win 10 for archiving the Empower System Audit Trail, the auto archive option does not work. The software adds an error to the archive agent (AA) log file.

Solution: Archive the System Audit Trail using the **Records > System Audit Trail > Archive** (or **> Archive and Remove**) menu in Empower Configuration Manager. Save the file in a binary format in the `SDMS\Backup` folder location. Using the template you configured for Manual Archive and added to the list of templates in the SDMS Service Configuration Console, start the Archive Agent.

Note: Waters plans to correct this issue in an upcoming NuGenesis 8 Service Release 2 (SR2) Data Adapters 3 (DAR3) hotfix and in NuGenesis LMS 9.0 Data Adapter Release 1.

Program files modified in this release

Program Files

The following program files in the `Empower\Bin` directory were modified for Empower 3 Service Release 3:

File Name	Description	File Version
<code>AnalyticsObjects.dll</code>	Contains objects for the Empower analytics application	7.0.3471.913

File Name	Description	File Version
AnalyticsSetup.exe	Analytics Setup application	7.0.3471.913
andims.dll	Contains ANDI mass spectrometry library objects	7.0.3471.913
AutoArchive.exe	AutoArchive application	7.0.3471.913
Cmgr.exe	Configuration Manager application	7.0.3471.913
Cmgrlib.dll	Contains the Configuration Manager library	7.0.3471.913
Compare.exe	Compare application	7.0.3471.913
Dconvert.exe	Application that restores pre-Millennium 3.0 data	7.0.3471.913
Empower.exe	Main Empower application	7.0.3471.913
EmpowerLicensingplugin.dll	C# plugin for the Empower Licensing application	7.0.3471.913
EthernetIeee.dll	Contains all the control objects necessary to connect and use the National Instruments Ethernet with the IEEE converter box	7.0.3471.913
ImmdSrvr.exe	Contains immediate background processing reporting and exporting support	7.0.3471.913
ImpExp.dll	Import/Export Library	7.0.3471.913
InEditor.exe	Instrument Editor application	7.0.3471.913
InstrumentServer.exe	Instrument Service application	7.0.3471.913
IPalisade.dll	Contains the Palisade mass spectrometry library	7.0.3471.913
ManTune.exe	Manual Tune application	7.0.3471.913
Messagecenter.exe	Message Center application	7.0.3471.913
MillServices.dll	Contains definitions for the Millennium user interface	7.0.3471.913
Mil0.dll	Contains base objects that implement database connection, security, user and user type objects, and others	7.0.3471.913

File Name	Description	File Version
Mil1.dll	Contains base objects that implement higher-level objects such as methods, results, and others	7.0.3471.913
Mil2.dll	Contains base objects that implement higher-level objects including data processing, integration, calibration, and others	7.0.3471.913
Mil3.dll	Contains objects that implement higher-level objects such as reporting groups and display graphics	7.0.3471.913
Milp.dll	Contains base objects that implement higher-level objects including data processing, integration, calibration, and others	7.0.3471.913
Milres.dll	Common resources	7.0.3471.913
MilTK.dll	Contains basic Toolkit objects	7.0.3471.913
msdiag.exe	TMD Diagnostics application	7.0.3471.913
mseditor.exe	Method Set Editor application	7.0.3471.913
MtkCtrl.dll	Contains Toolkit control objects	7.0.3471.913
netcdf.dll	Contains low-level processor format objects	7.0.3471.913
OpenAccess.exe	Open Access application	7.0.3471.913
OptInt.dll	Contains licensing and option objects	7.0.3471.913
OQ.exe	Operations Qualification application	7.0.3471.913
Pdacalib.exe	PDA Calibration application	7.0.3471.913
Pdadiag.exe	PDA Diagnostic application	7.0.3471.913
pmeditor.exe	Processing Method Editor application	7.0.3471.913
procmon.exe	Processing Monitor application	7.0.3471.913
ProcSrvr.exe	Processing Server application	7.0.3471.913
project.exe	Project application	7.0.3471.913

File Name	Description	File Version
Quickset.exe	Run Samples application	7.0.3471.913
QuickStart.exe	QuickStart application	7.0.3471.913
ReportPublisher.exe	Report Publisher application	7.0.3471.913
restoredb.exe	Restore Database application	7.0.3471.913
Review.exe	Review application	7.0.3471.913
RptViewer.exe	Report Viewer application	7.0.3471.913
setarchdatabase.exe	Set AutoArchive database application	7.0.3471.913
SetEmailDatabase.exe	Set Email database application	7.0.3471.913
ShowMeHelpSynchronizer.dll	Contains objects for the Empower Show Me Help	7.0.3471.913
Sseditor.exe	Sample Set Editor application	7.0.3471.913
StoreSrv.dll	Contains Storage Server classes	7.0.3471.913
StoreSrv.exe	Storage Server application	7.0.3471.913
StoreSrvProxy.dll	Contains Storage Server proxy stubs	7.0.3471.913
SysMon.exe	System Monitor application	7.0.3471.913
Update2487.exe	Firmware updates for the 2487 Detector	7.0.3471.913
ValidationManager.exe	Validation Manager application	7.0.3471.913
ValidationReview.exe	Validation Review application	7.0.3471.913
VerifyOpt.exe	Verify Options application	7.0.3471.913
WatersEmailService.exe	Waters Email service	7.0.3471.913
WatersService.exe	Waters Service	7.0.3471.913
Waters.Empower.AnalyticsViewer.exe	Waters Empower Analytics Viewer application	7.0.3471.913

English language directories

The following English language files were modified for Empower 3 Service Release 3:

File Name	Description	File Version
en\AutoArchiveRes.dll	Resources for Auto Archive (English)	7.0.3471.913

File Name	Description	File Version
en\CmgrRes.dll	Resources for Configuration Manager (English)	7.0.3471.913
en\CompareRes.dll	Resources for Compare (English)	7.0.3471.913
en\DconvertRes.dll	Resources for Dconvert (English)	7.0.3471.913
en\EmpowerRes.dll	Resources for the Empower application (English)	7.0.3471.913
en\ImmdsrvRes.dll	Resources for Immd server (English)	7.0.3471.913
en\ImpExpRes.dll	Resources for Import Export application (English)	7.0.3471.913
en\InEditorRes.dll	Resources for Instrument Editor application (English)	7.0.3471.913
en\InstrumentServerRes.dll	Resources for Instrument Server application (English)	7.0.3471.913
en\ManTuneRes.dll	Resources for Manual Tune application (English)	7.0.3471.913
en\MessageCenterRes.dll	Resources for the Message Center application (English)	7.0.3471.913
en\Mil0Res.dll	Resources for Mil0 (English)	7.0.3471.913
en\MilresRes.dll	General resources (English)	7.0.3471.913
en\MilTkRes.dll	Toolkit resources (English)	7.0.3471.913
en\msdiagRes.dll	Resources for the msDialog (English)	7.0.3471.913
en\msEditorRes.dll	Resources for the MS Editor application (English)	7.0.3471.913
en\MsgCenterRes.dll	Resources for the Message Center application (English)	7.0.3471.913
en\MtkCtrlRes.dll	Resources for the Toolkit Control (English)	7.0.3471.913
en\OpenAccessRes.dll	Resources for the Open Access application (English)	7.0.3471.913
en\optintRes.dll	Resources for the OptInt application (English)	7.0.3471.913
en\OqRes.dll	Qualification resources (English)	7.0.3471.913
en\PdocalibRes.dll	Resources for the PDA Calibration application (English)	7.0.3471.913
en\pdadiagRes.dll	General resources (English)	7.0.3471.913
en\pmeditorRes.dll	Toolkit resources (English)	7.0.3471.913

File Name	Description	File Version
en\ProcMonRes.dll	Resources for the Processing Monitor application (English)	7.0.3471.913
en\ProcSrvRes.dll	Resources for the Processing Server application (English)	7.0.3471.913
en\ProjectRes.dll	Project resources (English)	7.0.3471.913
en\QuicksetRes.dll	Quickset resources (English)	7.0.3471.913
en\QuickStartRes.dll	QuickStart resources (English)	7.0.3471.913
en\ReportPublisherRes.dll	Resources for the Report Publisher application (English)	7.0.3471.913
en\restoreDBRes.dll	General resources (English)	7.0.3471.913
en\ReviewRes.dll	Resources for the Review application (English)	7.0.3471.913
en\RPTViewerRes.dll	Resources for the Report Viewer application (English)	7.0.3471.913
en\SetArchDatabaseRes.dll	Resources for the Set Archive Database application (English)	7.0.3471.913
en\SetEmailDatabaseRes.dll	Resources for the Set Email Database application (English)	7.0.3471.913
en\SSEditorRes.dll	Resources for the Sample Set Editor application (English)	7.0.3471.913
en\SysmonRes.dll	System Monitor resources (English)	7.0.3471.913
en\update2487Res.dll	General resources (English)	7.0.3471.913
en\ValidationManagerRes.dll	Validation Manager resources (English)	7.0.3471.913
en\ValidationReviewRes.dll	Validation Review resources (English)	7.0.3471.913
en\VerifyOptRes.dll	Verify Opt resources (English)	7.0.3471.913
en\WatersEmailServiceRes.dll	Waters Email Service resources (English)	7.0.3471.913

Japanese language directory

The following Japanese language files were modified for Empower 3 Service Release 3:

File Name	Description	File Version
ja\CmgrRes.dll	Resources for Configuration Manager (Japanese)	7.0.3471.913

File Name	Description	File Version
ja\CompareRes.dll	Resources for Compare (Japanese)	7.0.3471.913
ja\DconvertRes.dll	Resources for Dconvert (Japanese)	7.0.3471.913
ja\EmpowerLicensingplugin.resources.dll	Resources for the C# Empower Licensing application	7.0.3471.913
ja\EmpowerRes.dll	Resources for the Empower application (Japanese)	7.0.3471.913
ja\InstrumentServerRes.dll	Resources for Instrument Server application (Japanese)	7.0.3471.913
ja\MessageCenterRes.dll	Resources for the Message Center application (Japanese)	7.0.3471.913
ja\MilresRes.dll	General resources (Japanese)	7.0.3471.913
ja\OpenAccessRes.dll	Resources for the Open Access application (Japanese)	7.0.3471.913
ja\ProjectRes.dll	Project resources (Japanese)	7.0.3471.913
ja\QuicksetRes.dll	Quickset resources (Japanese)	7.0.3471.913
ja\QuickStartRes.dll	QuickStart resources (Japanese)	7.0.3471.913
ja\ReportPublisherRes.dll	Resources for the Report Publisher application (Japanese)	7.0.3471.913
ja\restoreDBRes.dll	General resources (Japanese)	7.0.3471.913
ja\ReviewRes.dll	Resources for the Review application (Japanese)	7.0.3471.913
ja\ValidationManagerRes.dll	Validation Manager resources (Japanese)	7.0.3471.913
ja\ValidationReviewRes.dll	Validation Review resources (Japanese)	7.0.3471.913

Korean language directory

The following Korean language files were modified for Empower 3 Service Release 3:

File Name	Description	File Version
ko\CmgrRes.dll	Resources for Configuration Manager (Korean)	7.0.3471.913
ko\CompareRes.dll	Resources for Compare (Korean)	7.0.3471.913
ko\DconvertRes.dll	Resources for Dconvert (Korean)	7.0.3471.913
ko\EmpowerLicensingplugin.resources.dll	Resources for the C# Empower Licensing application	7.0.3471.913
ko\EmpowerRes.dll	Resources for the Empower application (Korean)	7.0.3471.913
ko\InEditorRes.dll	Resources for Instrument Editor application (Korean)	7.0.3471.913
ko\InstrumentServer.dll	Resources for Instrument Server application (Korean)	7.0.3471.913
ko\MilresRes.dll	General resources (Korean)	7.0.3471.913
ko\MessageCenterRes.dll	Resources for the Message Center application (Korean)	7.0.3471.913
ko\OpenAccessRes.dll	Resources for the Open Access application (Korean)	7.0.3471.913
ko\ProjectRes.dll	Project resources (Korean)	7.0.3471.913
ko\QuicksetRes.dll	Quickset resources (Korean)	7.0.3471.913
ko\QuickStartRes.dll	QuickStart resources (Korean)	7.0.3471.913
ko\ReportPublisherRes.dll	Resources for the Report Publisher application (Korean)	7.0.3471.913

File Name	Description	File Version
ko\restoreDBRes.dll	General resources (Korean)	7.0.3471.913
ko\ReviewRes.dll	Resources for the Review application (Korean)	7.0.3471.913
ko\ValidationManagerRes.dll	Validation Manager resources (Korean)	7.0.3471.913
ko\ValidationReviewRes.dll	Validation Review resources (Korean)	7.0.3471.913

Chinese language directory

The following Chinese language files were modified for Empower 3 Service Release 3:

File Name	Description	File Version
zh-chs\CmgrRes.dll	Resources for Configuration Manager (Chinese)	7.0.3471.913
zh-chs\CompareRes.dll	Resources for Compare (Chinese)	7.0.3471.913
zh-chs\DconvertRes.dll	Resources for Dconvert (Chinese)	7.0.3471.913
zh-chs \EmpowerLicensingplugin.resources.dll	Resources for the C# Empower Licensing application (Chinese)	7.0.3471.913
zh-chs\EmpowerRes.dll	Resources for the Empower application (Chinese)	7.0.3471.913
zh-chs\InstrumentServerRes.dll	Resources for Instrument Server application (Chinese)	7.0.3471.913
zh-chs\MilresRes.dll	General resources (Chinese)	7.0.3471.913
zh-chs\MessageCenterRes.dll	Resources for the Message Center application (Chinese)	7.0.3471.913

File Name	Description	File Version
zh-chs\OpenAccessRes.dll	Resources for the Open Access application (Chinese)	7.0.3471.913
zh-chs\ProjectRes.dll	Project resources (Chinese)	7.0.3471.913
zh-chs\QuicksetRes.dll	Quickset resources (Chinese)	7.0.3471.913
zh-chs\QuickStartRes.dll	QuickStart resources (Chinese)	7.0.3471.913
zh-chs\Report PublisherRes.dll	Resources for the Report Publisher application (Chinese)	7.0.3471.913
zh-chs\restoreDBRes.dll	General resources (Chinese)	7.0.3471.913
zh-chs\ReviewRes.dll	Resources for the Review application (Chinese)	7.0.3471.913
zh-chs\ValidationManagerRes.dll	Validation Manager resources (Chinese)	7.0.3471.913
zh-chs\ValidationReviewRes.dll	Validation Review resources (Chinese)	7.0.3471.913

Test configurations

This application update was tested on the following system configurations.

Windows database server

Windows Server 2008 R2 SP1 64-bit, Standard

Windows Hotfixes:

KB981391,KB981392,KB977236,KB981111,KB977238,KB2849697,KB2849696,KB2841134,KB977239,KB2670838,KB2830477,KB2592687,KB981390,KB2305420,KB2386667,KB2393802,KB2425227,KB2488113,KB2505438,KB2506014,KB2506212,KB2506928,KB2509553,KB2511250,KB2511455,KB2515325,KB2522422,KB2529073,KB2533552,KB2536275,KB2536276,KB2541014,KB2544893,KB2545698,KB2547666,KB2552343,KB2560656,KB2563227,KB2564958,KB25709

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Windows Server 2012 R2 64-bit, Standard

Windows Hotfixes:

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Red Hat Linux database server

Red Hat Server Release 6.8

Packages

ConsoleKit.x86_64,ConsoleKit-libs.x86_64,ConsoleKit-x11.x86_64,DeviceKit-power.x86_64,GConf2.x86_64,GConf2-gtk.x86_64,MAKEDEV.x86_64,ModemManager.x86_64,NetworkManager.x86_64,NetworkManager-glib.x86_64,NetworkManager-gnome.x86_64,ORBit2.x86_64,PackageKit.x86_64,PackageKit-device-rebind.x86_64,PackageKit-glib.x86_64,PackageKit-gstreamer-plugin.x86_64,PackageKit-gtk-module.x86_64,PackageKit-yum.x86_64,PackageKit-yum-plugin.x86_64,Red_Hat_Enterprise_Linux-Release_Notes-6-en-US.noarch,SDL.x86_64,abrt.x86_64,abrt-addon-ccpp.x86_64,abrt-addon-kerneloops.x86_64,abrt-addon-python.x86_64,abrt-cli.x86_64,abrt-desktop.x86_64,abrt-gui.x86_64,abrt-libs.x86_64,abrt-python.x86_64,abrt-tui.x86_64,abyssinica-fonts.noarch,acl.x86_64,acpid.x86_64,adcli.x86_64,aic94xx-firmware.noarch,alsa-lib.x86_64,alsa-plugins-pulseaudio.x86_64,alsa-utils.x86_64,apr.x86_64,apr-util.x86_64,apr-util-ldap.x86_64,at.x86_64,at-spi.x86_64,at-spi-python.x86_64,atk.x86_64,atlas.x86_64,atmel-firmware.noarch,attr.x86_64,audit.x86_64,audit-libs.x86_64,augeas-libs.x86_64,authconfig.x86_64,authconfig-gtk.x86_64,autofs.x86_64,avahi-autoipd.x86_64,avahi-glib.x86_64,avahi-libs.x86_64,avahi-ui.x86_64,b43-fwcutter.x86_64,b43-openfwfw.noarch,basesystem.noarch,bash.x86_64,bc.x86_64,bfa-firmware.noarch,bind-libs.x86_64,bind-utils.x86_64,binutils.x86_64,biosdevname.x86_64,blktrace.x86_64,bluez.x86_64,bluez-libs.x86_64,boost-filesystem.x86_64,boost-system.x86_64,brasero.x86_64,brasero-libs.x86_64,brasero-nautilus.x86_64,bridge-utils.x86_64,busybox.x86_64,bzip2.x86_64,bzip2-libs.x86_64,c-ares.x86_64,ca-certificates.noarch,cairo.x86_64,cairomm.x86_64,cas.noarch,cdparanoia.x86_64,cdparanoia-libs.x86_64,cdrdao.x86_64,certmonger.x86_64,cgdcboxd.x86_64,checkpolicy.x86_64,cheese.x86_64,chkconfig.x86_64,cifs-utils.x86_64,cim-schema.noarch,cjkuni-fonts-common.noarch,cjkuni-uming-fonts.noarch,cloog-ppl.x86_64,compat-db.x86_64,compat-db42.x86_64,compat-db43.x86_64,compat-expat1.x86_64,compat-glibc.x86_64,compat-glibc-headers.x86_64,compat-libcap1.x86_64,compat-libf2c-34.x86_64,compat-libgfortran-41.x86_64,compat-libstdc++-296.i686,compat-libstdc++-33.x86_64,compat-libtermcap.x86_64,compat-openldap.x86_64,compat-opensm-libs.x86_64,compat-readline5.x86_64,compat-xcb-util.x86_64,compiz.x86_64,compiz-gnome.x86_64,comps-extras.noarch,control-center.x86_64,control-center-extra.x86_64,control-center-filesystem.x86_64,coreutils.x86_64,coreutils-libs.x86_64,cpio.x86_64,cpp.x86_64,cpuspeed.x86_64,cracklib.x86_64,cracklib-dicts.x86_64,cracklib-python.x86_64,crash.x86_64,crash-gcore-command.x86_64,crash-trace-command.x86_64,crda.x86_64,cronie.x86_64,cronie-anacron.x86_64,crontabs.noarch,cryptsetup-luks.x86_64,cryptsetup-luks-libs.x86_64,cups.x86_64,cups-libs.x86_64,curl.x86_64,cvs.x86_64,cyrus-sasl.x86_64,cyrus-sasl-gssapi.x86_64,cyrus-sasl-lib.x86_64,cyrus-sasl-plain.x86_64,dapl.x86_64,dash.x86_64,db4.x86_64,db4-cxx.x86_64,db4-devel.x86_64,db4-utils.x86_64,dbus.x86_64,dbus-c++.x86_64,dbus-glib.x86_64,dbus-libs.x86_64,dbus-python.x86_64,dbus-x11.x86_64,dejavu-fonts-common.noarch,dejavu-sans-fonts.noarch,dejavu-

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users-docs.noarch,system-gnome-theme.noarch,system-icon-theme.noarch,system-setup-keyboard.x86_64,systemtap-runtime.x86_64,sysvinit-tools.x86_64,taglib.x86_64,tar.x86_64,tcl.x86_64,tcp_wrappers.x86_64,tcp_wrappers-libs.x86_64,tcpdump.x86_64,tcsh.x86_64,thai-scalable-fonts-common.noarch,thai-scalable-waree-fonts.noarch,theora-tools.x86_64,tibetan-machine-uni-fonts.noarch,time.x86_64,tk.x86_64,tmpwatch.x86_64,totem.x86_64,totem-mozplugin.x86_64,totem-nautilus.x86_64,totem-pl-parser.x86_64,trace-cmd.x86_64,traceroute.x86_64,ttmkfdir.x86_64,tzdata.noarch,tzdata-java.noarch,udev.x86_64,udisks.x86_64,un-core-dotum-fonts.noarch,un-core-fonts-common.noarch,unbound-libs.x86_64,unique.x86_64,unixODBC.x86_64,unixODBC-devel.x86_64,unzip.x86_64,upstart.x86_64,urw-fonts.noarch,usbmuxd.x86_64,usbutils.x86_64,usermode.x86_64,usermode-gtk.x86_64,ustr.x86_64,util-linux-ng.x86_64,valgrind.x86_64,vconfig.x86_64,vim-common.x86_64,vim-enhanced.x86_64,vim-filesystem.x86_64,vim-minimal.x86_64,vino.x86_64,virt-what.x86_64,vlgothic-fonts.noarch,vlgothic-fonts-common.noarch,vorbis-tools.x86_64,vsftpd.x86_64,vte.x86_64,wacomexpresskeys.x86_64,wavpack.x86_64,wdaemon.x86_64,webkitgtk.x86_64,wget.x86_64,which.x86_64,wireless-tools.x86_64,wodim.x86_64,words.noarch,wpa_supplicant.x86_64,wqy-zenhei-fonts.noarch,wsmancli.x86_64,xcb-util.x86_64,xdg-user-dirs.x86_64,xdg-user-dirs-gtk.x86_64,xdg-utils.noarch,xinetd.x86_64,xkeyboard-config.noarch,xml-common.noarch,xmlrpc-c.x86_64,xmlrpc-c-client.x86_64,xorg-x11-drivers.x86_64,xorg-x11-drv-acecad.x86_64,xorg-x11-drv-aiptek.x86_64,xorg-x11-drv-apm.x86_64,xorg-x11-drv-ast.x86_64,xorg-x11-drv-ati.x86_64,xorg-x11-drv-ati-firmware.noarch,xorg-x11-drv-cirrus.x86_64,xorg-x11-drv-dummy.x86_64,xorg-x11-drv-elographics.x86_64,xorg-x11-drv-evdev.x86_64,xorg-x11-drv-fbdev.x86_64,xorg-x11-drv-fpit.x86_64,xorg-x11-drv-glint.x86_64,xorg-x11-drv-hyperpen.x86_64,xorg-x11-drv-i128.x86_64,xorg-x11-drv-i740.x86_64,xorg-x11-drv-intel.x86_64,xorg-x11-drv-keyboard.x86_64,xorg-x11-drv-mach64.x86_64,xorg-x11-drv-mga.x86_64,xorg-x11-drv-mouse.x86_64,xorg-x11-drv-mutouch.x86_64,xorg-x11-drv-nouveau.x86_64,xorg-x11-drv-nv.x86_64,xorg-x11-drv-openchrome.x86_64,xorg-x11-drv-penmount.x86_64,xorg-x11-drv-qxl.x86_64,xorg-x11-drv-r128.x86_64,xorg-x11-drv-rendition.x86_64,xorg-x11-drv-s3virge.x86_64,xorg-x11-drv-savage.x86_64,xorg-x11-drv-siliconmotion.x86_64,xorg-x11-drv-sis.x86_64,xorg-x11-drv-sisusb.x86_64,xorg-x11-drv-synaptics.x86_64,xorg-x11-drv-tdfx.x86_64,xorg-x11-drv-trident.x86_64,xorg-x11-drv-v4l.x86_64,xorg-x11-drv-vesa.x86_64,xorg-x11-drv-vmouse.x86_64,xorg-x11-drv-vmware.x86_64,xorg-x11-drv-void.x86_64,xorg-x11-drv-vooodoo.x86_64,xorg-x11-drv-wacom.x86_64,xorg-x11-drv-xgi.x86_64,xorg-x11-font-utils.x86_64,xorg-x11-fonts-100dpi.noarch,xorg-x11-fonts-ISO8859-1-100dpi.noarch,xorg-x11-fonts-Type1.noarch,xorg-x11-fonts-misc.noarch,xorg-x11-server-Xorg.x86_64,xorg-x11-server-common.x86_64,xorg-x11-server-utils.x86_64,xorg-x11-utils.x86_64,xorg-x11-xauth.x86_64,xorg-x11-xinit.x86_64,xorg-x11-xkb-utils.x86_64,xulrunner.x86_64,xvattr.x86_64,xz.x86_64,xz-libs.x86_64,xz-lzma-compatible.x86_64,yelp.x86_64,yp-tools.x86_64,ypbind.x86_64,yum.noarch,yum-metadata-parser.x86_64,yum-plugin-security.noarch,yum-rhn-plugin.noarch,yum-utils.noarch,zd1211-firmware.noarch,zenity.x86_64,zip.x86_64,zlib.x86_64.

Red Hat Server Release 7.4

Red Hat Enterprise Linux Server 7.4 packages:

glibmm24-2.50.0-1.el7.x86_64, enchant-1.6.0-8.el7.x86_64, desktop-file-
utils-0.23-1.el7.x86_64, telepathy-
glib-0.24.0-1.el7.x86_64, pkgconfig-0.27.1-4.el7.x86_64, libsecret-0.18.5-2.el7.x86_64, gsettings-
desktop-schemas-3.22.0-1.el7.x86_64, gobject-introspection-1.50.0-1.el7.x86_64, dbus-
python-1.1.1-9.el7.x86_64, avahi-glib-0.6.31-17.el7.x86_64, shared-mime-
info-1.8-3.el7.x86_64, json-
glib-1.2.6-1.el7.x86_64, gstreamer1-1.10.4-2.el7.x86_64, glib2-2.50.3-3.el7.x86_64, dbus-
glib-0.100-7.el7.x86_64, atk-2.22.0-3.el7.x86_64, libmount-2.23.2-43.el7.x86_64, gcc-4.8.5-16.el7.
x86_64, redhat-logos-70.0.3-6.el7.noarch, hicolor-icon-
theme-0.12-7.el7.noarch, binutils-2.25.1-31.base.el7.x86_64, rubygems-2.0.14.1-30.el7.noarch, rub
ygem-rdoc-4.0.0-30.el7.noarch, ruby-libs-2.0.0.648-30.el7.x86_64, ruby-
irb-2.0.0.648-30.el7.noarch, rubygem-psych-2.0.0-30.el7.x86_64, rubygem-
json-1.7.7-30.el7.x86_64, rubygem-io-console-0.4.2-30.el7.x86_64, rubygem-
bigdecimal-1.2.0-30.el7.x86_64, ruby-2.0.0.648-30.el7.x86_64, gzip-1.5-9.el7.x86_64, glusterfs-
libs-3.8.4-18.4.el7.x86_64, libblkid-2.23.2-43.el7.x86_64, libarchive-3.1.2-10.el7_2.x86_64, alsa-
lib-1.1.3-3.el7.x86_64, python-
libs-2.7.5-58.el7.x86_64, python-2.7.5-58.el7.x86_64, libXft-2.3.2-2.el7.x86_64, cups-
libs-1.6.3-29.el7.x86_64, openssl-libs-1.0.2k-8.el7.x86_64, krb5-
libs-1.15.1-8.el7.x86_64, fontconfig-2.10.95-11.el7.x86_64, coreutils-8.22-18.el7.x86_64, ncurses-5
.9-13.20130511.el7.x86_64, oxygen-icon-theme-4.10.5-2.el7.noarch, glibc-headers-2.17-
96.el7.x86_64, glibc-devel-2.17-196.el7.x86_64, vim-common-7.4.160-2.el7.x86_64, lksctp-
tools-1.0.17-2.el7.x86_64, liberation-mono-fonts-1.07.2-15.el7.noarch, ttmkfdir-
0.9-42.el7.x86_64, qpdf-
libs-5.0.1-3.el7.x86_64, mtools-4.0.18-5.el7.x86_64, lsof-4.87-4.el7.x86_64, libselinux-
utils-2.5-11.el7.x86_64, elfutils-libs-0.168-8.el7.x86_64, elfutils-default-yama-
scope-0.168-8.el7.noarch, elfutils-0.168-8.el7.x86_64, clucene-
core-2.3.3.4-11.el7.x86_64, libss-1.42.9-10.el7.x86_64, liblouis-2.5.2-10.el7.x86_64, libchewing-0.3
.4-6.el7.x86_64, xorg-x11-utils-7.5-22.el7.x86_64, xcb-util-keysyms-0.4.0-1.el7.x86_64, setools-
libs-3.3.8-1.1.el7.x86_64, libXxf86dga-1.1.4-1.el7.x86_64, libdmx-1.1.3-3.el7.x86_64, libdb-
utils-5.3.21-20.el7.x86_64, libbluray-0.2.3-5.el7.x86_64, isomd5sum-1.0.10-5.el7.x86_64, dwz-0.11
-3.el7.x86_64, bc-1.06.95-13.el7.x86_64, vim-
minimal-7.4.160-2.el7.x86_64, tcp_wrappers-7.6-77.el7.x86_64, libXvMC-1.0.10-1.el7.x86_64, libof
a-0.9.3-24.el7.x86_64, libdwarf-20130207-4.el7.x86_64, hunspell-en-
GB-0.20121024-6.el7.noarch, hesiod-3.2.1-3.el7.x86_64, gdisk-0.8.6-5.el7.x86_64, fftw-libs-
double-3.3.3-8.el7.x86_64, device-mapper-persistent-data-0.7.0-0.1.rc6.el7.x86_64, copy-jdk-
configs-2.2-3.el7.noarch, xorg-x11-xauth-1.0.9-1.el7.x86_64, xorg-x11-server-
common-1.19.3-11.el7.x86_64, xcb-util-image-0.4.0-2.el7.x86_64, perl-Test-
Harness-3.28-3.el7.noarch, perl-IO-HTML-1.00-2.el7.noarch, perl-HTML-
Tagset-3.20-15.el7.noarch, libXaw-1.0.13-4.el7.x86_64, libusbmuxd-1.0.10-5.el7.x86_64, libsample
rate-0.1.8-6.el7.x86_64, ipset-libs-6.29-1.el7.x86_64, ipset-6.29-1.el7.x86_64, perl-IO-Socket-
IP-0.21-4.el7.noarch, kernel-devel-3.10.0-693.el7.x86_64, perl-XML-
Parser-2.41-10.el7.x86_64, perl-PIRPC-0.2020-14.el7.noarch, perl-IO-

Compress-2.061-2.el7.noarch,perl-DBI-1.627-4.el7.x86_64,perl-DBD-SQLite-1.39-3.el7.x86_64,perl-WWW-RobotRules-6.02-5.el7.noarch,perl-URI-1.60-9.el7.noarch,perl-TimeDate-2.30-2.el7.noarch,perl-Thread-Queue-3.02-2.el7.noarch,perl-TermReadKey-2.30-20.el7.x86_64,perl-Net-LibIDN-0.12-15.el7.x86_64,perl-Net-Daemon-0.48-5.el7.noarch,perl-HTTP-Date-6.02-8.el7.noarch,perl-File-Listing-6.04-7.el7.noarch,perl-Error-0.17020-2.el7.noarch,perl-Encode-Locale-1.03-5.el7.noarch,perl-Digest-MD5-2.52-3.el7.x86_64,perl-Digest-1.17-245.el7.noarch,perl-Compress-Raw-Bzip2-2.061-3.el7.x86_64,perl-Business-ISBN-Data-20120719.001-2.el7.noarch,perl-Business-ISBN-2.06-2.el7.noarch,kdelibs-common-4.14.8-6.el7_3.x86_64,autoconf-2.69-11.el7.noarch,perl-Data-Dumper-2.145-3.el7.x86_64,perl-Compress-Raw-Zlib-2.061-4.el7.x86_64,perl-5.16.3-292.el7.x86_64,perl-Time-Local-1.2300-2.el7.noarch,perl-Time-HiRes-1.9725-3.el7.x86_64,perl-threads-shared-1.43-6.el7.x86_64,perl-threads-1.87-4.el7.x86_64,perl-Storable-2.45-3.el7.x86_64,perl-Socket-2.010-4.el7.x86_64,perl-Scalar-List-Utills-1.27-248.el7.x86_64,perl-Pod-Usage-1.63-3.el7.noarch,perl-Pod-Simple-3.28-4.el7.noarch,perl-PathTools-3.40-5.el7.x86_64,perl-macros-5.16.3-292.el7.x86_64,perl-libs-5.16.3-292.el7.x86_64,perl-Getopt-Long-2.40-2.el7.noarch,perl-Filter-1.49-3.el7.x86_64,perl-File-Temp-0.23.01-3.el7.noarch,perl-File-Path-2.09-2.el7.noarch,perl-Exporter-5.68-3.el7.noarch,perl-Encode-2.51-7.el7.x86_64,perl-constant-1.27-2.el7.noarch,perl-Carp-1.26-244.el7.noarch,perl-Text-ParseWords-3.29-4.el7.noarch,perl-Pod-Perldoc-3.20-4.el7.noarch,perl-podlators-2.5.1-3.el7.noarch,perl-Pod-Escapes-1.04-292.el7.noarch,perl-parent-0.225-244.el7.noarch,perl-HTTP-Tiny-0.033-3.el7.noarch,libXfont-1.5.2-1.el7.x86_64,libgfortran-4.8.5-16.el7.x86_64,teamd-1.25-5.el7.x86_64,m17n-lib-1.6.4-14.el7.x86_64,libteam-1.25-5.el7.x86_64,libnetfilter_conntrack-1.0.6-1.el7_3.x86_64,libcdio-10.2+0.90-11.el7.x86_64,iw-4.3-1.el7.x86_64,iptables-1.4.21-18.el7.x86_64,iproute-3.10.0-87.el7.x86_64,sysvinit-tools-2.88-14.dsf.el7.x86_64,lm_sensors-libs-3.4.0-4.20160601gitf9185e5.el7.x86_64,libyaml-0.1.4-11.el7_0.x86_64,libxkbcommon-x11-0.7.1-1.el7.x86_64,libxkbcommon-0.7.1-1.el7.x86_64,libvpx-1.3.0-5.el7_0.x86_64,libvisual-0.4.0-16.el7.x86_64,libthai-0.1.14-9.el7.x86_64,libref_array-0.1.5-27.el7.x86_64,libnfnlink-1.0.1-4.el7.x86_64,libmpcdec-1.2.6-12.el7.x86_64,libevdev-1.5.6-1.el7.x86_64,libcollection-0.6.2-27.el7.x86_64,libbasicobjects-0.1.1-27.el7.x86_64,hostname-3.13-3.el7.x86_64,cdparanoia-libs-10.2-17.el7.x86_64,soundtouch-1.4.0-9.el7.x86_64,redhat-menus-12.0.2-8.el7.noarch,pcre2-10.23-2.el7.x86_64,mesa-private-llvm-3.9.1-3.el7.x86_64,libusal-1.1.11-23.el7.x86_64,libnl-1.1.4-3.el7.x86_64,liberation-sans-fonts-1.07.2-15.el7.noarch,libedit-3.0-12.20121213cvs.el7.x86_64,libdv-1.0.0-17.el7.x86_64,libcnfig-1.4.9-5.el7.x86_64,ethtool-4.8-1.el7.x86_64,dosfstools-3.0.20-9.el7.x86_64,make-3.82-23.el7.x86_64,libunistring-0.9.3-9.el7.x86_64,libcdio-0.92-1.el7.x86_64,mozjs24-24.2.0-7.el7.x86_64,mozjs17-17.0.0-19.el7.x86_64,libmng-1.0.10-14.el7.x86_64,xorg-x11-server-utils-7.7-20.el7.x86_64,xmlsec1-1.2.20-5.el7.x86_64

Red Hat Server Release 7.5

Red Hat Enterprise Linux Server 7.5 packages:

GConf2.x86_64, GeolP.x86_64, ModemManager.x86_64, ModemManager-glib.x86_64, NetworkManager.x86_64, NetworkManager-adsl.x86_64, NetworkManager-config-server.noarch, NetworkManager-glib.x86_64, NetworkManager-libnm.x86_64, NetworkManager-libreswan.x86_64, NetworkManager-libreswan-gnome.x86_64, NetworkManager-ppp.x86_64, NetworkManager-team.x86_64, NetworkManager-tui.x86_64, NetworkManager-wifi.x86_64, ORBit2.x86_64, PackageKit.x86_64, PackageKit-glib.x86_64, PackageKit-gstreamer-plugin.x86_64, PackageKit-gtk3-module.x86_64, PackageKit-yum.x86_64, PyYAML.x86_64, Red_Hat_Enterprise_Linux-Release_Notes-7-en-US.noarch, abattis-cantarell-fonts.noarch, abrt.x86_64, abrt-addon-ccpp.x86_64, abrt-addon-kerneloops.x86_64, abrt-addon-pstoreoops.x86_64, abrt-addon-python.x86_64, abrt-addon-vmcore.x86_64, abrt-addon-xorg.x86_64, abrt-cli.x86_64, abrt-console-notification.x86_64, abrt-dbus.x86_64, abrt-desktop.x86_64, abrt-gui.x86_64, abrt-gui-libs.x86_64, abrt-libs.x86_64, abrt-python.x86_64, abrt-tui.x86_64, accountsservice.x86_64, accountsservice-libs.x86_64, acl.x86_64, adwaita-cursor-theme.noarch, adwaita-gtk2-theme.x86_64, adwaita-icon-theme.noarch, adwaita-qt5.x86_64, aic94xx-firmware.noarch, alsa-firmware.noarch, alsa-lib.x86_64, alsa-plugins-pulseaudio.x86_64, alsa-tools-firmware.x86_64, alsa-utils.x86_64, anaconda-core.x86_64, anaconda-gui.x86_64, anaconda-tui.x86_64, anaconda-user-help.noarch, anaconda-widgets.x86_64, appstream-data.noarch, at.x86_64, at-spi2-atk.x86_64, at-spi2-core.x86_64, atk.x86_64, atkmm.x86_64, attr.x86_64, audit.x86_64, audit-libs.x86_64, audit-libs-python.x86_64, augeas-libs.x86_64, authconfig.x86_64, avahi.x86_64, avahi-glib.x86_64, avahi-gobject.x86_64, avahi-libs.x86_64, avahi-ui-gtk3.x86_64,

baobab.x86_64 basesystem.noarch bash.x86_64 bash-completion.noarch bc.x86_64 bind-libs.x86_64 bind-libs-lite.x86_64 bind-licnse.noarch bind-utils.x86_64 binutils.x86_64 biosdevname.x86_64 blktrace.x86_64 bluez.x86_64 boost-date-time.x86_64 boost-system.x86_64 boost-thread.x86_64 bridge-utils.x86_64 brlapi.x86_64 brltty.x86_64 btrfs-progs.x86_64 bzip2.x86_64 bzip2-libs.x86_64 ca-certificates.noarch cairo.x86_64 cairo-gobject.x86_64 cairomm.x86_64 caribou.x86_64 caribou-gtk2-module.x86_64 caribou-gtk3-module.x86_64 cdparanoia-libs.x86_64 celt051.x86_64 checkpolicy.x86_64 cheese.x86_64 cheese-libs.x86_64 chkconfig.x86_64 chrony.x86_64 3 cjkuni-uming-fonts.noarch cloud-init.x86_64 cloud-utils-growpart.noarch clutter.x86_64 clutter-gst2.x86_64 clutter-gst3.x86_64 clutter-gtk.x86_64 cogl.x86_64 color-filesystem.noarch colord.x86_64 colord-gtk.x86_64 colord-libs.x86_64 compat-cheese314.x86_64 compat-gnome-desktop314.x86_64 compat-libcap1.x86_64 compat-libstdc33.i686 compat-libstdc33.x86_64 control-center.x86_64 control-center-filesystem.x86_64 copy-jdk-configs.noarch coreutils.x86_64 cpio.x86_64 cpp.x86_64 cracklib.x86_64 cracklib-dicts.x86_64 crash.x86_64 crda.x86_64 createrepo.noarch cronie.x86_64 cronie-anacron.x86_64 crontabs.noarch cryptsetup.x86_64 cryptsetup-libs.x86_64 cryptsetup-python.x86_64 cups.x86_64 cups-client.x86_64 cups-filesystem.noarch cups-filters.x86_64 cups-filters-libs.x86_64 cups-libs.x86_64 cups-pk-helper.x86_64 curl.x86_64 cyrus-sasl.x86_64 cyrus-sasl-gssapi.x86_64 cyrus-sasl-lib.x86_64 cyrus-sasl-md5.x86_64 cyrus-sasl-plain.x86_64 cyrus-sasl-scam.x86_64 dbus.x86_64 dbus-glib.x86_64 dbus-libs.x86_64 dbus-python.x86_64 dbus-x11.x86_64 dconf.x86_64 dejavu-fonts-common.noarch dejavu-sans-fonts.noarch dejavu-sans-mono-fonts.noarch dejavu-serif-fonts.noarch deltarpm.x86_64 desktop-file-utils.x86_64 device-mapper.x86_64 device-mapper-event.x86_64 device-mapper-event-libs.x86_64 device-mapper-libs.x86_64 device-mapper-multipath.x86_64 device-mapper-multipath-libs.x86_64 device-mapper-persistent-data.x86_64 dhclient.x86_64 dhcp-

common.x86_64 dhcp-libs.x86_64 diffutils.x86_64 dleyna-connector-dbus.x86_64 dleyna-core.x86_64 dleyna-server.x86_64 dmidecode.x86_64 dmraid.x86_64 dmraid-events.x86_64 dnsmasq.x86_64 dosfstools.x86_64 dotconf.x86_64 dracut.x86_64 dracut-config-generic.x86_64 dracut-config-rescue.x86_64 dracut-network.x86_64 dvd+rw-tools.x86_64 dyninst.x86_64 e2fsprogs.x86_64 e2fsprogs-libs.x86_64 ebttables.x86_64 ed.x86_64 elfutils.x86_64 elfutils-default-yama-scope.noarch elfutils-libelf.x86_64 elfutils-libs.x86_64 emacs-filesystem.noarch empathy.x86_64 enchant.x86_64 enscript.x86_64 eog.x86_64 peak.x86_64 ethtool.x86_64 evince.x86_64 evince-nautilus.x86_64 evolution-data-server.x86_64 exempi.x86_64 exiv2-libs.x86_64 expat.x86_64 farstream.x86_64 farstream02.x86_64 fcoe-utils.x86_64 festival.x86_64 festival-freebsoft-utils.noarch festival-lib.x86_64 festival-speechtools-libs.x86_64 festvox-slt-arctic-hts.noarch fftw-libs-double.x86_64file.x86_64 file-libs.x86_64 file-roller.x86_64 file-roller-nautilus.x86_64 filesystem.x86_64 findutils.x86_64 fipscheck.x86_64 fipscheck-lib.x86_64 firefox.x86_64 firewall-config.noarch firewalld.noarch firewalld-filesystem.noarch firstboot.x86_64 flac-libs.x86_64 flatpak.x86_64 flatpak-libs.x86_64 flite.x86_64 folks.x86_64 fontconfig.x86_64 fontpackages-filesystem.noarch fprintd.x86_64 fprintd-pam.x86_64 freerdp-libs.x86_64 freetype.x86_64 frei0r-plugins.x86_64 fros.noarch fuse.x86_64 fuse-libs.x86_64 fxload.x86_64 gamin.x86_64 gavl.x86_64 gawk.x86_64 gcc.x86_64 gcc-c++.x86_64 gcr.x86_64 gd.x86_64 gdb.x86_64 gdbm.x86_64 gdisk.x86_64 gdk-pixbuf2.x86_64 gdm.x86_64 gedit.x86_64 genisoimage.x86_64 geoclue2.x86_64 geoclue2-libs.x86_64 geocode-glib.x86_64 gettext.x86_64 gettext-libs.x86_64 ghostscript.x86_64 ghostscript-cups.x86_64 ghostscript-fonts.noarch giflib.x86_64 gjs.x86_64 glade-libs.x86_64 glib-networking.x86_64 glib2.x86_64 glibc.i686 glibc.x86_64 glibc-common.x86_64 glibc-devel.i686 glibc-devel.x86_64 glibc-headers.x86_64 glibmm24.x86_64 glusterfs.x86_64 glusterfs-api.x86_64 glusterfs-cli.x86_64 glusterfs-client-xlators.x86_64 glusterfs-libs.x86_64 glx-utils.x86_64 gmp.x86_64 gnome-abrt.x86_64 gnome-bluetooth.x86_64 gnome-bluetooth-libs.x86_64 gnome-boxes.x86_64 gnome-calculator.x86_64 gnome-classic-session.noarch gnome-clocks.x86_64 gnome-color-manager.x86_64 gnome-contacts.x86_64 gnome-desktop3.x86_64 gnome-dictionary.x86_64 gnome-dictionary-libs.x86_64 gnome-disk-utility.x86_64 gnome-font-viewer.x86_64 gnome-getting-started-docs.noarch gnome-icon-theme.noarch gnome-icon-theme-extras.noarch gnome-icon-theme-symbolic.noarch gnome-initial-setup.x86_64 gnome-keyring.x86_64 gnome-keyring-pam.x86_64 gnome-menus.x86_64 gnome-online-accounts.x86_64 gnome-packagekit.x86_64 gnome-packagekit-common.x86_64 gnome-packagekit-installer.x86_64 gnome-packagekit-updater.x86_64 gnome-python2.x86_64 gnome-python2-bonobo.x86_64 gnome-python2-canvas.x86_64 gnome-python2-gnome.x86_64 gnome-python2-gnomevfs.x86_64 gnome-screenshot.x86_64 gnome-session.x86_64 gnome-session-xsession.x86_64 gnome-settings-daemon.x86_64 gnome-shell.x86_64 gnome-shell-extension-alternate-tab.noarch gnome-shell-extension-apps-menu.noarch gnome-shell-extension-common.noarch gnome-shell-extension-launch-new-instance.noarch gnome-shell-extension-places-menu.noarch gnome-shell-extension-top-icons.noarch gnome-shell-extension-user-theme.noarch gnome-shell-extension-window-list.noarch gnome-software.x86_64 gnome-system-log.x86_64 gnome-system-monitor.x86_64 gnome-terminal.x86_64 gnome-terminal-nautilus.x86_64 gnome-themes-standard.x86_64 gnome-tweak-tool.noarch gnome-user-docs.noarch gnome-vfs2.x86_64 gnome-video-effects.noarch gnome-weather.noarch gnu-free-fonts-common.noarch gnu-free-mono-fonts.noarch gnu-free-sans-fonts.noarch gnu-free-serif-fonts.noarch gnupg2.x86_64 gnutils.x86_64 gobject-introspection.x86_64 gom.x86_64 google-crosextra-caladea-fonts.noarch google-crosextra-carlito-fonts.noarch gperftools-libs.x86_64 gpgme.x86_64 gpm-libs.x86_64

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libXrender.x86_64 libXres.x86_64 libXt.x86_64 libXtst.i686 libXtst.x86_64 libXv.x86_64
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libcom_err.x86_64 libconfig.x86_64 libcroco.x86_64 libcurl.x86_64 libdaemon.x86_64
libdb.x86_64 libdb-utils.x86_64 libdmapsharing.x86_64 libdmx.x86_64 libdnet.x86_64
libdrm.x86_64 libdv.x86_64 libdvdnav.x86_64 libdvdread.x86_64 libdwarf.x86_64 libedit.x86_64
libepoxy.x86_64 liberation-fonts-common.noarch liberation-mono-fonts.noarch liberation-sans-
fonts.noarch liberation-serif-fonts.noarch libestr.x86_64 libevdev.x86_64 libevent.x86_64
libexif.x86_64 libfastjson.x86_64 libffi.x86_64 libfontenc.x86_64 libfprint.x86_64 libgcab1.x86_64
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libkcc-data.x86_64 libldb.x86_64 liblouis.x86_64_4 liblouis-python.noarch libmbim.x86_64
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0.1.5-29.el7 libreport.x86_64 libreport-anaconda.x86_64 libreport-cli.x86_64 libreport-
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Windows Server 2008 R2 Datacenter

B3161949,KB3161958,KB3170106,KB3170455,KB3172605,KB3177186,KB3177467,KB3179573,KB3181988,KB3185319,KB3210131,KB4014504,KB4019990,KB4025252,KB4034733,KB4036586,KB4040685,KB4040980,KB976902,KB982018,KB4041681

Windows Server 2016 Datacenter

Windows 10 Experience

Microsoft Windows Hotfixes

KB2896496,KB2919355,KB2919442,KB2934520,KB2938066,KB2938772,KB2949621,KB2954879,KB2955164,KB2959626,KB2965500,KB2967917,KB2969339,KB2971203,KB2973351,KB2973448,KB2975061,KB2975719,KB2977765,KB2978041,KB2978126,KB2984006,KB2989647,KB2989930,KB2993100,KB2995004,KB2995388,KB2996799,KB2998174,KB2999226,KB3000483,KB3000850,KB3003057,KB3004361,KB3004365,KB3004545,KB3012199,KB3012702,KB3013172,KB3013769,KB3013791,KB3013816,KB3014442,KB3019978,KB3021910,KB3022345,KB3022777,KB3023222,KB3023266,KB3024751,KB3024755,KB3029603,KB3030377,KB3030947,KB3032663,KB3033446,KB3035126,KB3036612,KB3037579,KB3037924,KB3038002,KB3038701,KB3041857,KB3042085,KB3044374,KB3044673,KB3045634,KB3045685,KB3045717,KB3045719,KB3045755,KB3045992,KB3045999,KB3046017,KB3046737,KB3048043,KB3054169,KB3054203,KB3054256,KB3054464,KB3055323,KB3055343,KB3055642,KB3059316,KB3059317,KB3060681,KB3060793,KB3061512,KB3063843,KB3064209,KB3068708,KB3071756,KB3074228,KB3074548,KB3075220,KB3075853,KB3077715,KB3078405,KB3078676,KB3080042,KB3080149,KB3082089,KB3083325,KB3083711,KB3083992,KB3084135,KB3084905,KB3086255,KB3087041,KB3087137,KB3091297,KB3092601,KB3092627,KB3094486,KB3095701,KB3097997,KB3098779,KB3099834,KB3100473,KB3102429,KB3102467,KB3102812,KB3103616,KB3103696,KB3103709,KB3109103,KB3109976,KB3110329,KB3112148,KB3112336,KB3115224,KB3118401,KB3121261,KB3121461,KB3121918,KB3122654,KB3123245,KB3126033,KB3126434,KB3126587,KB3127226,KB3128650,KB3133043,KB3133690,KB3133924,KB3134179,KB3134815,KB3135449,KB3137061,KB3137728,KB3138602,KB3138615,KB3139164,KB3139398,KB3139914,KB3140219,KB3140234,KB3141092,KB3145384,KB3145432,KB3146604,KB3146723,KB3146751,KB3147071,KB3148851,KB3153704,KB3155784,KB3156059,KB3156418,KB3159398,KB3161949,KB3161958,KB3162343,KB3162835,KB3169704,KB3170455,KB3172614,KB3172729,KB3173424,KB3175024,KB3178539,KB3179574,KB3179948,KB3186539,KB3186568,KB3192137,KB3195387,KB3199209,KB3199986,KB3210135,KB3211320,KB4013418,KB4014510,KB4023834,KB4024847,KB4033428,KB4034681,KB4035631,KB4049065,KB4089510,KB4093137,KB4103720,KB4132216

Citrix Server (XenApp Server 7.6 Enterprise)

Citrix Presentation Server

Citrix Windows Server 2012 R2 Standard

Windows Hotfixes:

KB2966826,KB2966828,KB2968296,KB2972103,KB2972213,KB2973114,KB2978122,KB3023219,KB3037576,KB3072307,KB3074545,KB3097992,KB3103699,KB3122651,KB3127222,KB3135985,KB3142026,KB3159398,KB3161949,KB3161958,KB3162343,KB3162835,KB3164294,KB3169704,KB3170455,KB3172614,KB3172729,KB3173424,KB3174644,KB3175024,KB3178539,KB3179574,KB3184122,KB3185319,KB3188732,KB3192392,KB3197873,KB3203884,KB3205400,KB3210132,KB3210135,KB4012204,KB4012213,KB4014329,KB4014556,KB4014574,KB4014581,KB4014590,KB4015547,KB4019213,KB4022717,KB4025333,KB4033369,KB4033428,KB4034672,KB4038793,KB4040956,KB4040967,KB4040972,KB4040981,KB4041687,KB4041777,KB4048961,KB4054522,KB4054854,KB4093110,KB4093115,KB4095515,KB4095875,KB4096236,KB4096417,KB4103729,KB4103725.

Citrix App Server

Citrix Windows Server 2008 R2 Standard

Windows Hotfixes:

KB2849697,KB2849696,KB2841134,KB3172605,KB3177467,KB3185319,KB4019990,KB4040980,KB4095514,KB4095874,KB4130978,KB4230450,KB4284867,KB4284842.

Citrix app server Windows 2012

Windows Hotfixes:

KB2894856,KB2896496,KB2920189,KB2934520,KB2938066,KB2954879,KB2955164,KB2958262,KB2959626,KB2961072,KB2962409,KB2962806,KB2965500,KB2967917,KB2971203,KB2973351,KB2973448,KB2975061,KB2975719,KB2976627,KB2977765,KB2978041,KB2978126,KB2979576,KB2984006,KB2989930,KB2993100,KB2995004,KB2995388,KB2996799,KB2998097,KB2998174,KB2999226,KB3000850,KB3002657,KB3003057,KB3004361,KB3004365,KB3004394,KB3004545,KB3006137,KB3011780,KB3012199,KB3012235,KB3012702,KB3013172,KB3013410,KB3013531,KB3013538,KB3013769,KB3013791,KB3013816,KB3014029,KB3014442,KB3015696,KB3016074,KB3018133,KB3018467,KB3019215,KB3019978,KB3020338,KB3021910,KB3021952,KB3022777,KB3022796,KB3023222,KB3023266,KB3023562,KB3024751,KB3024755,KB3027209,KB3029438,KB3029603,KB3029803,KB3030377,KB3030947,KB3032323,KB3032359,KB3032663,KB3033446,KB3033889,KB3034344,KB3034348,KB3035017,KB3035126,KB3035131,KB3035132,KB3035527,KB3035553,KB3036228,KB3036612,KB3037579,KB3037924,KB3038002,KB3038562,KB3039066,KB3041857,KB3042085,KB3042553,KB3043812,KB3044132,KB3044374,KB3044673,KB3045171,KB3045634,KB3045685,KB3045717,KB3045719,KB3045746,KB3045755,KB3045992,KB3045999,KB3046002,KB3046017,KB3046049,KB3046359,KB3046737,KB3047255,KB3048043,KB3048097,KB3048778,KB3049989,KB3050267,KB3050514,KB3054169,KB3054203,KB3054256,KB3054464,KB3055323,KB3055343,KB3055642,KB3057839,KB3058168,KB3058515,KB3059316,KB3059317,KB3060383,KB3060681,KB3060716,KB3060746,KB3060793,KB3061468,KB3061512,KB3061518,KB3063843,KB3064209,KB3065013,KB3065820,KB3065822,KB3065988,KB3066441,KB3067505,KB3068457,KB3068708,KB3069114,KB3069392

,KB3070102,KB3071663,KB3071756,KB3072595,KB3072630,KB3072633,KB3073874,KB3074228,KB3074548,KB3074886,KB3075220,KB3075249,KB3075516,KB3076895,KB3076949,KB3077715,KB3078601,KB3078676,KB3079777,KB3079904,KB3080042,KB3080149,KB3082089,KB3082353,KB3083325,KB3083992,KB3084135,KB3084905,KB3086255,KB3087038,KB3087039,KB3087041,KB3087088,KB3087137,KB3087390,KB3087916,KB3089023,KB3092627.

Client

Client Windows 10 Enterprise

Windows Hotfixes:

KB4103729,KB4103721.

Client Windows 10 Pro

Windows Hotfixes:

KB3211320,KB4013418,KB4033637,KB4034662,KB4035631,KB4034658,KB3186568,KB3211320,KB4013418,KB4033637,KB4035631,KB4038806,KB4038782,KB3211320,KB4013418,KB4033637,KB4035631,KB4049065,KB4074595,KB4074590,KB3150513,KB3199986,KB3211320,KB4013418,KB4018483,KB4033631,KB4049065,KB4049411,KB4074595,KB4015217,KB3199986,KB3211320,KB4013418,KB4023834,KB4093110,KB4093137,KB4093119,KB3211320,KB4013418,KB4033393,KB4033637,KB4035631,KB4049065,KB4054855,KB4074595,KB4093110,KB4132216,KB4093120,KB3199986,KB3211320,KB4013418,KB4093110,KB4093137,KB4093119,KB3186568,KB3211320,KB4033637,KB4035631,KB4048951,KB4049065,KB4132216,KB4048953.

Client Windows 7 Pro

Windows Hotfixes:

KB2952664,KB3000483,KB3042058,KB3072305,KB3074543,KB3080079,KB3080149,KB3084135,KB3086255,KB3092601,KB3092627,KB3093513,KB3097989,KB3101722,KB3102429,KB3107998,KB3108371,KB3108381,KB3108664,KB3109103,KB3109560,KB3110329,KB3115858,KB3121255,KB3121461,KB3122648,KB3126446,KB3126587,KB3127220,KB3133977,KB3137061,KB3138378,KB3138612,KB3138910,KB3139398,KB3139914,KB3140245,KB3147071,KB3150220,KB3150513,KB3155178,KB3156016,KB3156019,KB3159398,KB3161102,KB3161949,KB3161958,KB3163245,KB3170455,KB3170735,KB3172605,KB3177467,KB3179573,KB3181988,KB3184143,KB3210131,KB4014504,KB4019990,KB4020322,KB4025252,KB4025337,KB4040980,KB4041681.

Standalone/Personal Workstation

Windows 7 workstation

Windows Hotfixes:

KB2305420,KB2393802,KB2425227,KB2475792,KB2479628,KB2479943,KB2484033,KB2485376,KB2488113,KB2491683,KB2492386,KB2503665,KB2505438,KB2506014,KB2506143,KB2506212,KB2506928,KB2507618,KB2509553,KB2511250,KB2511455,KB2515325,KB2518869,KB2522422,KB2524375,KB2529073,KB2532531,KB2533552,KB2534111,KB2536275,KB2536276,KB2539635,KB2541014,KB2544893,KB2545698,KB2547666,KB2552343,KB2556532,KB2560656,KB2563227,KB2564958,KB2567680,KB2570947,KB2572077,KB2574819,KB2579686,KB2584146,KB2585542,KB2588516,KB2592687,KB2603229,KB2604115,KB2618451,KB2619339,KB2620704,KB2620712,KB2621440,KB2631813,KB2633873,KB2633952,KB2639308,KB2639417,KB2640148,KB2641653,KB2641690,KB2644615,KB2645640,KB2647518,KB2647753,KB2653956,KB2654428,KB2655992,KB2656356,KB2656373,KB2656411,KB2658846,KB2659262,KB2660075,KB2660465,KB2660649,KB2661254,KB2665364,KB2667402,KB2670838,KB2676562,KB2677070,KB2679255,KB2685811,KB2685813,KB2685939,KB2686831,KB2688338,KB2690533,KB2691442,KB2695962,KB2698365,KB2699779,KB2705219,KB2706045,KB2709630,KB2709715,KB2709981,KB2712808,KB2718704,KB2719033,KB2719857,KB2719985,KB2724197,KB2726535,KB2727528,KB2729094,KB2729452,KB2731771,KB2731847,KB2732059,KB2732487,KB2732500,KB2735855,KB2736233,KB2736422,KB2739159,KB2741355,KB2742599,KB2743555,KB2749655,KB2750841,KB2753842,KB2756822,KB2756921,KB2757638,KB2758857,KB2761217,KB2763523,KB2769369,KB2770660,KB2773072,KB2778344,KB2779562,KB2785220,KB2786081,KB2786400,KB2789645,KB2790113,KB2790655,KB2791765,KB2798162,KB2799494,KB2799926,KB2800095,KB2803821,KB2804579,KB2807986,KB2808679,KB2809215,KB2813170,KB2813347,KB2813430,KB2813956,KB2819745,KB2820197,KB2820331,KB2823180,KB2829361,KB2830290,KB2830477,KB2832414,KB2833946,KB2834140,KB2834886,KB2835361,KB2835364,KB2836502,KB2836942,KB2836943,KB2839894,KB2840149,KB2840631,KB2841134,KB2843630,KB2844286,KB2845187,KB2845690,KB2846960,KB2847077,KB2847311,KB2847927,KB2849470,KB2849696,KB2849697,KB2850851,KB2852386,KB2853952,KB2855844,KB2857650,KB2859537,KB2861191,KB2861698,KB2861855,KB2862152,KB2862330,KB2862335,KB2862966,KB2862973,KB2863058,KB2863240,KB2864058,KB2864202,KB2868038,KB2868116,KB2868623,KB2868626,KB2868725,KB2871997,KB2872035,KB2872339,KB2875783,KB2876284,KB2876331,KB2882822,KB2883150,KB2884256,KB2887069,KB2888049,KB2891804,KB2892074,KB2893294,KB2893519,KB2893984,KB2894844,KB2898857,KB2900986,KB2901112,KB2904266,KB2908783,KB2909210,KB2911501,KB2912390,KB2913152,KB2913431,KB2913602,KB2916036,KB2918077,KB2918614,KB2919469,KB2922229,KB2923545,KB2926765,KB2928562,KB2929437,KB2929733,KB2929755,KB2929961,KB2930275,KB2931356,KB2937610,KB2939576,KB2943357,KB2952664,KB2957189,KB2957503,KB2957509,KB2957689,KB2961072,KB2965788,KB2966583,KB2968294,KB2970228,KB2971850,KB2972100,KB2972211,KB2972280,KB2973112,KB2973201,KB2973337,KB2973351,KB2976627,KB2976897,KB2977292,KB2977728,KB2978092,KB2978120,KB2978668,KB2978742,KB2979570,KB2980245,KB2981580,KB2982378,KB2984972,KB2984976,KB2984981,KB2985461,KB2987107,KB2990214,KB2991963,KB2992611,KB2993651,KB2993958,KB2994023,KB2999226,KB3000483,KB3001554,KB3002885,KB3003057,KB3003743,KB3004361,KB3004375,KB3005607,KB3006121,KB3006137,KB3006226,KB3006625,KB3008627,KB3008923,KB3009736,KB3010788,KB3011780,KB3013126,KB3013410,KB3013455,KB3013531,KB3014406,KB3019215,KB3019978,KB3020338,KB3020369,KB3020370,KB3020388,KB302

1674,KB3021917,KB3022345,KB3022777,KB3023215,KB3023266,KB3023562,KB3023607,KB3029944,KB3030377,KB3031432,KB3032323,KB3032655,KB3033889,KB3033890,KB3033929,KB3034344,KB3035126,KB3035131,KB3035132,KB3035583,KB3036493,KB3037574,KB3039066,KB3040272,KB3042058,KB3042553,KB3045171,KB3045645,KB3045685,KB3045999,KB3046002,KB3046017,KB3046049,KB3046269,KB3046306,KB3046482,KB3048070,KB3048761,KB3050265,KB3051768,KB3054476,KB3055642,KB3057154,KB3057839,KB3059317,KB3060716,KB3061518,KB3063858,KB3064209,KB3065979,KB3065987,KB3067505,KB3067903,KB3068708,KB3069114,KB3069392,KB3069762,KB3070102,KB3070738,KB3071756,KB3072305,KB3072630,KB3072633,KB3074543,KB3075220,KB3075226,KB3075249,KB3075851,KB3076895,KB3076949,KB3077715,KB3078601,KB3078667,KB3079757,KB3079904,KB3080079,KB3080149,KB3080446,KB3081320,KB3083324,KB3083710,KB3083992,KB3084135,KB3086255,KB3087039,KB3087918,KB3088195,KB3092601,KB3092627,KB3093513,KB3097877,KB3097966,KB3097989,KB3099862,KB3100213,KB3101246,KB3101722,KB3101746,KB3102429,KB3102810,KB3107998,KB3108371,KB3108381,KB3108664,KB3108669,KB3108670,KB3109094,KB3109103,KB3109560,KB3110329,KB3112148,KB3112343,KB3115858,KB3118401,KB3121212,KB3121255,KB3121461,KB3121918,KB3122648,KB3123479,KB3123862,KB3124000,KB3124001,KB3124280,KB3125574,KB3126446,KB3126587,KB3126593,KB3127220,KB3133977,KB3134214,KB3135445,KB3135983,KB3137061,KB3138378,KB3138612,KB3138901,KB3138910,KB3138962,KB3139398,KB3139914,KB3139923,KB3139940,KB3140245,KB3140410,KB3140735,KB3142024,KB3142042,KB3145739,KB3146706,KB3146963,KB3147071,KB3148851,KB3149090,KB3150220,KB3150513,KB3153171,KB3153199,KB3153731,KB3155178,KB3156013,KB3156016,KB3156017,KB3156019,KB3156417,KB3159398,KB3161102,KB3161561,KB3161949,KB3161958,KB3162835,KB3163245,KB3164033,KB3164035,KB3167679,KB3168965,KB3170455,KB3170735,KB3172605,KB3175024,KB3177186,KB3177467,KB3177725,KB3178034,KB3179573,KB3181988,KB3182203,KB3184122,KB3184143,KB3185319,KB3185911,KB3188730,KB3188740,KB3191566,KB3192391,KB3197867,KB3205394,KB3210131,KB3212642,KB4012204,KB4012212,KB4014504,KB4014565,KB4014573,KB4014579,KB4014661,KB4015546,KB4018271,KB4019263,KB4019990,KB4020322,KB4021558,KB4022719,KB4022722,KB4025337,KB4034679,KB4034733,KB4038779,KB4040685,KB4040966,KB4040980,KB4041678,KB4047206,KB4048960,KB4049068,KB4051956,KB4052978,KB4054176,KB4054518,KB4054521,KB4054998,KB4056568,KB4056897,KB4074587,KB4074736,KB4074837,KB4088878,KB4089187,KB4092946,KB4093108,KB4093118,KB4095514,KB4095874,KB4096040,KB4103712,KB4103718,KB4103768,KB4130978,KB4230450,KB4284826,KB4284867,KB4338423,KB4338612,KB4338818,KB4338823,KB4339093,KB958488,KB971033,KB976002,KB976902,KB976932,KB982018.

Windows 10 Pro 64-bit Workstation

Windows Hotfixes:

KB2479943,KB2484033,KB2488113,KB2491683,KB2505438,KB2506014,KB2506212,KB2506928,KB2509553,KB2511250,KB2522422,KB2533623,KB2534111,KB2545698,KB2547666,KB2552343,KB2560656,KB2563227,KB2564958,KB2574819,KB2579686,KB2585542,KB2592687,KB2603229,KB2604115,KB2620704,KB2621440,KB2631813,KB2639308,KB2640148,KB2653956,KB2654428,KB2656356,KB2660075,KB2667402,KB2670838,KB2685811,KB2685939,KB2690533,KB2698365,KB2705219,KB2706045,KB2719857,KB2726535,KB2727528,KB2729094,KB2729452,KB2731771,KB2732059,KB2736422,KB2742599,KB2750841,KB2758857,KB2761217,KB276

3523,KB2770660,KB2773072,KB2786081,KB2789645,KB2791765,KB2798162,KB2799926,KB2800095,KB2807986,KB2808679,KB2813430,KB2820331,KB2830477,KB2834140,KB2836942,KB2836943,KB2840149,KB2840631,KB2841134,KB2843630,KB2847927,KB2849696,KB2849697,KB2852386,KB2853952,KB2857650,KB2861698,KB2862152,KB2862330,KB2862335,KB2864202,KB2868038,KB2868116,KB2871997,KB2882822,KB2884256,KB2888049,KB2891804,KB2892074,KB2893294,KB2893519,KB2894844,KB2900986,KB2908783,KB2911501,KB2918077,KB2919469,KB2928562,KB2929733,KB2931356,KB2937610,KB2943357,KB2966583,KB2968294,KB2972100,KB2972211,KB2973112,KB2973201,KB2973351,KB2977292,KB2978120,KB2978742,KB2984972,KB2991963,KB2992611,KB3000483,KB3003743,KB3004361,KB3004375,KB3010788,KB3011780,KB3019978,KB3021674,KB3022777,KB3023215,KB3030377,KB3031432,KB3035126,KB3035132,KB3037574,KB3042553,KB3045685,KB3046017,KB3046269,KB3055642,KB3059317,KB3060716,KB3067903,KB3071756,KB3072305,KB3074543,KB3075220,KB3076895,KB3078601,KB3080446,KB3084135,KB3086255,KB3092601,KB3093513,KB3097989,KB3101722,KB3108371,KB3108381,KB3108664,KB3109103,KB3109560,KB3110329,KB3115858,KB3122648,KB3124275,KB3126587,KB3127220,KB3135173,KB3136561,KB3138612,KB3138910,KB3139398,KB3139914,KB3140741,KB3140768,KB3147458,KB3150220,KB3150513,KB3154132,KB3155178,KB3156016,KB3156019,KB3161102,KB3161949,KB3161958,KB3170455,KB3172729,KB3173428,KB3176935,KB3176936,KB3176937,KB3181403,KB3186568,KB3192391,KB3197867,KB3199209,KB3199986,KB3205394,KB3211320,KB3212642,KB4012212,KB4013418,KB4014504,KB4014573,KB4014579,KB4015217,KB4015220,KB4018483,KB4019263,KB4019264,KB4019472,KB4020821,KB4022405,KB4022632,KB4022714,KB4022715,KB4022730,KB4023834,KB4025339,KB4025376,KB4032188,KB4033393,KB4033637,KB4034658,KB4034662,KB4035631,KB4035632,KB4038782,KB4038806,KB4041689,KB4041691,KB4043961,KB4048951,KB4048953,KB4048955,KB4049065,KB4049179,KB4051613,KB4051963,KB4053577,KB4054022,KB4054517,KB4055237,KB4055994,KB4056887,KB4056890,KB4057247,KB4058043,KB4058702,KB4074595,KB4087256,KB4088785,KB4090914,KB4093107,KB4093110,KB4093432,KB4099989,KB4103721,KB4103729,KB4131372,KB4132216,KB4132650,KB4284819,KB4287903,KB958488,KB976902.

Windows 10 Enterprise

Windows Hotfixes:

KB3186568,KB4022405,KB4022730,KB4033631,KB4033631,KB4033637,KB4033637,KB4035631,KB4049011,KB4049411,KB4054505,KB4054507,KB4056887,KB4057144,KB4103720,KB4103729,KB4103729,KB4132216,KB4338832,KB4343669,KB4345421.

LAC/E module

Windows 7.0 SP1 64-bit Pro

Windows Hotfixes:

KB3135983,KB3138612,KB3138910,KB3139398,KB3139914,KB3141092,KB3142024,KB3146706,KB3146963,KB3149090,KB3150220,KB3155178,KB3156016,KB3156017,KB3156019,KB3159398,KB3161561,KB3161949,KB3161958,KB3170455,KB3172605,KB3177186,KB3177467,KB3188730,KB3192391,KB3197867,KB3205394,KB3210131,KB3212642,KB4012212,KB4014504,KB4014565,KB4014573,KB4014579,KB4014661,KB4015546,KB4019263,KB4020322,KB4021558,KB4022722,KB4025337,KB4034679,KB4034733,KB976002,KB976902,KB982018,KB4034664.

Windows 10 64-bit Pro

Windows Hotfixes:

KB3150513,KB3161102,KB3172729,KB3173428,KB3181403,KB4035632,KB4038806,KB4038783,KB4022405,KB4025376,KB4132649,KB4287903,KB4284830.

Windows 10 64-bit Enterprise

Windows Hotfixes:

KB4013418,KB4033393,KB4033631,KB4049065,KB4049411,KB4054855,KB4093110,KB4093137,KB4093119,KB4013418,KB4033393,KB4033631,KB4049065,KB4049411,KB4054855,KB4088785,KB4088787,KB3211320,KB4013418,KB4033637,KB4035631,KB4049065,KB4074595,KB4074590,KB4013418,KB4033393,KB4033631,KB4049065,KB4049411,KB4054855,KB4093137,KB4103729,KB4103723.

Windows 10 Enterprise 2016 LTSC, 64-bit (LAC/E 16)

Windows Hotfixes:

KB3186568,KB4033631,KB4049065,KB4049411,KB4054507,KB4132216,KB4287903,KB4284880.