



Empower 3.6.0

Release Notes

General information

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Contact Waters with enhancement requests or technical questions regarding the use, transportation, removal, or disposal of any Waters product. You can reach us via the Internet, telephone, fax, or conventional mail.

Waters contact information

Contacting medium	Information
Internet	The Waters website includes contact information for Waters locations worldwide. Visit www.waters.com
Telephone and fax	From the USA or Canada, phone 800-252-4752, or fax 508-872-1990. For other locations worldwide, phone and fax numbers appear in the Waters website.
Conventional mail	Waters Corporation Global Support Services 34 Maple Street Milford, MA 01757 USA

Updated information

Refer to the Waters website (www.waters.com) and click **Support > Support Documents and Downloads** for updates to this document.

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Empower 3.6.0

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.

Naming convention

Starting with Empower 3.6.0, the naming convention for Empower releases is `Empower XX.YY.ZZ.QQ`, where:

- `XX` = Major Release version, for example, Empower 3.YY.ZZ.QQ - Major Release 3;
- `YY` = Minor Release number, for example, Empower 3.6.ZZ.QQ - Major Release 3, Minor Release 6;

- **ZZ** = Maintenance Release number, for example, Empower 3.6.0.QQ - Major Release 3, Minor Release 6, Maintenance Release 0;
- **QQ** = Hotfix Release, for example, Empower 3.6.0.0 - Major Release 3, Minor Release 6, Maintenance Release 0, Hotfix 0.

System and software requirements

Empower 3.6.0 software supports Windows 10 Professional and Enterprise (Personal, Acquisition Client, and LAC/E devices), Windows Server 2016 (Standard), and Red Hat Enterprise Linux Server 8.0.

Note: Support includes English, Japanese, Simplified Chinese, and Korean distributions of Empower 3.6.0 software.

Specifically, Empower 3.6.0 supports these platforms and operating systems:

Platform	Operating systems and components
Personal workstation	• Windows 10 Professional or Enterprise, 64-bit • Windows 10 Enterprise LTSC Build 1607 • Oracle 19c^a
Empower client	• Windows 10 Professional or Enterprise, 64-bit • Oracle 19c^a
Citrix environment	• Windows Server 2016 Standard, version 1607, build 14393 (on the Virtual Delivery Agent (VDA) server) • Citrix Virtual Delivery Agent (VDA) 7.15 • Citrix XenApp 7.15 LTSR CU2 • Citrix Receiver 4.9
Database server	• Windows Server 2016 Standard, version 1607, build 14393 • Red Hat Enterprise Linux Server 8.0 • Oracle 19c^a
File server	• Windows Server 2016 Standard

Platform	Operating systems and components
LAC/E device	- Windows 10 Professional or Enterprise, 64-bit - Oracle 19c^a - Configuration 15 and Configuration 16 are both supported with Windows 10 Enterprise Long Term Service Branch (LTSB) Build 1607 Notes: - Configuration 16 comprises both eLAC/E and cLAC/E. - Empower 3.6.0 supports Configuration 15 and Configuration 16 LAC/E devices.
Virtualization technology	Empower 3.6.0 was tested using VMware vSphere ESXi 6.7 EP 04.

a. Embedded Oracle versions are 19.7.0.0.0. for the Oracle database and 19.3.0.0.0 for the Oracle client. The Oracle version required for RedHat is 19.7.0.0.0. The Oracle database is installed on server and Empower Personal installations. Oracle clients are installed on Empower Server, Personal, Empower client, and LAC/E installations.

Note: The following Windows 10 versions were used to run Empower 3.6.0 tests with Empower Client, Personal, and LAC/E: 1803, 1903, 1909, and 2004. Additionally, Windows 10 Enterprise 1607 LTSB was used to run tests with LAC/E devices.

Important: The installation of Empower LAC/E 3.6.0 is not supported on Windows 7.

See also: The *Empower 3.6.0 Installation and Configuration Guide* (715006976).

Driver compatibility

Empower 3.6.0 supports Driver Pack 2019 Release 2 Service Release 1, Waters Driver Pack 2020 Release 1, and Agilent Instrument Control Framework Support Layer v3.3 on Windows 10.

See also: For information on the Waters drivers, refer to the following documents available on the Waters website (www.waters.com > Support > Support Documents and Downloads):

- *Waters Driver Pack 2019 Release 2 Installation and Configuration Guide* (715006278)
- *Waters Driver Pack 2019 Release 2 Service Release 1 Analytical Release Notes* (715006741)
- *Waters Driver Pack 2020 Release 1 Installation and Configuration Guide* (715006278)
- *Agilent Instrument Control Framework Support Layer v3.3 Release Notes* (715006563)

Recommendation: For Empower 3.6.0, Waters recommends using only instrument drivers that are compatible with Windows 10.

NuGenesis SDMS LMS compatibility

Empower 3.6.0 is compatible with NuGenesis 9.0.2 (NG 9.0.2) and NuGenesis 9.1 LMS (NG 9.1) components as follows:

- The NuGenesis LMS base kit (SDMS) requires either NuGenesis SDMS 9.0.2 or NuGenesis SDMS 9.1 for printing functionality.
- The NuGenesis LMS Option kit (ELN and Connectors) for NG SDMS 9.0.2 requires NG LMS 9.0.2, NG LMS Empower Interface 2.0.2, or NG LMS Connectors 2.0.2.
- The NuGenesis LMS Option kit (ELN and Connectors) for NG SDMS 9.1 requires NG LMS 9.1, NG LMS Empower Interface 2.1, or NG LMS Connectors 2.1.
- The NuGenesis SDMS 9.0-9.1 Data Adapters Release 4 (NG SDMS 9.0-9.1 DAR4) and NG SDMS 9.0-9.1 DAR4 HF1.

Note: You must apply NuGenesis SDMS 9.0-9.1 DAR4 HF1 for Empower 3.6.0 support.

See also: The *NuGenesis LMS 9.0.2 Release Notes* (716006320), the *NuGenesis LMS 9.1 Release Notes* (715006815), and the *NuGenesis LMS 9.1 Installation and Configuration Guide* (715006816) for complete information.

Note: When using Empower 3.6.0, SDMS users require the NuGenesis SDMS Win 10 Client on Windows 10.

Legend for the following tables:

T	Tested - Both software entries were tested and structurally validated as part of a software release. The test was performed by either the Empower or the NuGenesis program, depending on the software release.
I	Incompatible - The two software entries will not work together.
*	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 install a newer version of Empower software.

Table 1–1: NuGenesis SDMS and Empower compatibility matrix

NuGenesis SDMS version	Empower version															
	E2 FR 5	E3	E3 SR 1	E3 FR 1	E3 FR 2	E3 SR 2	E3 FR 3	E3 FR 4	E3 FR 4 Cl d	E3 FR 4 Cl d 1.1	E3 SR 3	E3 FR 5	E3 SR 4	E3 FR 5/ SR 4 Cl d 2.0	E3 SR 5	E 3.6 .0
NG8 SDMS/ DAR0	T	*	I	T	I	I	I	I	I	I	I	I	I	I	I	I
NG8 SMDS SR1/DAR1	T	*	Data Ad apt ers Hot fix ava ilab le	T	*	*	I	I	I	I	I	I	I	I	I	I
NG SDMS FR1/DAR2	T	*	I	*	*	T	*	I	I	I	I	I	I	I	I	I
NG8 SDMS SR2/DAR2	T	*	I	*	*	*	T	I	I	I	I	I	I	I	I	I
NG8 SDMS SR2/DAR3	T	*	I	*	*	*	T	I	I	I	I	I	I	I	I	I
NG8 SDMS SR2 Win10/ DAR3 HF1	T	*	I	*	*	*	*	T	T	T	*	I	I	I	I	I
NG 8 SDMS SR2 Win10	*	*	I	*	*	*	*	T	*	T	*	T	T	*	*	*
NG8 SDMS SR2 Win10/ DAR3 HF2	T	*	I	*	*	*	*	T	*	T	T	I	I	I	I	I

Table 1–1: NuGenesis SDMS and Empower compatibility matrix (continued)

NuGenesis SDMS version	Empower version															
	E2 FR 5	E3	E3 SR 1	E3 FR 1	E3 FR 2	E3 SR 2	E3 FR 3	E3 FR 4	E3 FR 4 Cl d	E3 FR 4 Cl d 1.1	E3 SR 3	E3 FR 5	E3 SR 4	E3 FR 5/ SR 4 Cl d 2.0	E3 SR 5	E 3.6 .0
NG8 SDMS SR2 Win10/ DAR3 HF3	*	*		*	*	*	*	T	*	*	T	Tested with Service Not e ^a	Tested with Service Not e ^a	*	*	*
NG 9.0 SDMS	^b	*		*	*	*	T	*	*	*	T	T	T	*	*	*
NG 9.0 DAR1	^b	To be tested in DAR-2 ^c		To be tested in DAR-2 ^c	To be tested in DAR-2 ^c	Tested with Service Not e ^a	T	T	*	*	T	Tested with Service Not e ^a	Tested with Service Not e ^a	*	*	*
NG 9.0.2 DAR3	*	*		*	*	*	*	*	*	*	*	*	*	T	T	*
NG 9.0.2 DAR4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
NG 9.1 DAR4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

a. The remote data adapter included in NG 9.0 DAR1 requires a manual configuration step described in a service note.

b. E2 FR5 operates on Windows Server 2003 and Windows XP, which are incompatible with NG LMS 9.0.

c. These versions of Empower were to be supported by NG 9.0 DAR-1. As noted, they were not explicitly tested and there is an issue that will be corrected in NG 9.0 DAR2.

Table 1–2: NuGenesis LMS and Empower compatibility matrix

NuGenesis LMS version	Empower version															
	E2 FR 5	E3	E3 SR 1	E3 FR 1	E3 FR 2	E3 SR 2	E3 FR 3	E3 FR 4	E3 FR 4 Cl ou d	E3 FR 4 Cl ou d 1.1	E3 SR 3	E3 FR 5	E3 SR 4	E3 FR 5/ SR 4 Cl d 2.0	E3 SR 5	E 3.6 .0
NG LMS 8 SR2 and all hotfixes	*	*	*	*	*	T	T	*a	^b	^b	^c	^c	^c	*		
NG LMS 8 Empower Interface 1.1 HF2 and earlier releases	*	*	*	*	*	*	T	*a	^b	^b	^c	^c	^c	*		
NG LMS 8 Connectors 1.1 HF1 and earlier releases						*	T	*a	^b	^b	^c	^c	^c	*		
NG LMS 9	^d	*	*	*			T	*a	^b	^b	T	T	T	*	*	*
NuGenesis LMS Empower-Interface 2.0	^d	*	*	*	*	*	T	*a	^b	^b	T	T	T	*	*	*
NG LMS Connectors 2.0	^d					*	T	*a	^b	^b	T	T	T	*	*	*
NG LMS 9.0.2		*		*	*	*	T	*a	^b	^b	T	T	T	T	*	*
NuGenesis LMS Empower-Interface 2.0.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	T	T

Table 1–2: NuGenesis LMS and Empower compatibility matrix (continued)

NuGenesis LMS version	Empower version															
	E2 FR 5	E3	E3 SR 1	E3 FR 1	E3 FR 2	E3 SR 2	E3 FR 3	E3 FR 4	E3 FR 4 Cl ou d	E3 FR 4 Cl ou d 1.1	E3 SR 3	E3 FR 5	E3 SR 4	E3 FR 5/ SR 4 Cl d 2.0	E3 SR 5	E 3.6 .0
NG LMS Connectors 2.0.2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	T	T
NuGenesis LMS Empower-Interface 2.1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	T
NG LMS Connectors 2.1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	T

- a. Supported on Windows 7 clients only.
- b. The NuGenesis LMS 8 SR-2 LMS Option kit is not included in the Empower cloud deployments.
- c. The NuGenesis LMS 8 SR-2 Option kit does not support Windows 10, therefore Empower versions deployed exclusively on Windows 10 clients are not compatible.
- d. E2 FR5 operates on Windows Server 2003 and Windows XP, which are incompatible with NG LMS 9.0.

Waters Data Converter compatibility

Empower is compatible with Waters Data Converter 2.1 HF2 (WDC 2.1 HF2) as follows:

Table 1–3: Waters Data Converter and Empower compatibility matrix

WDC Version	Empower Version												
	E2 FR 5	E3	E3 SR 1	E3 FR 1	E3 FR 2	E3 SR 2	E3 FR 3	E3 FR 4	E3 FR 4 Cld	E3 FR 4 Cld 1.1	E3 SR 3	E3 FR 5	E 3.6. 0
WDC 2.1 HF2	T	T	*	*	T	*	*	*	*	*	*	T	T

Legend:

T	Tested - Both software entries were tested and structurally validated as part of a software release. The test was performed by either the Empower, NuGenesis, or WDC Programs, depending on the software release.
*	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 install a newer version of Empower software.

Requirement: When you install WDC 2.1 HF2 on Windows 10, you must run both the installer and the installation qualification `Check.bat` file using an account with System Administrator role.

Instrument support

Ethernet and serial instruments

Empower 3.6.0 supports Waters Driver Pack 2019 Release 2 Service Release 1, Waters Driver Pack 2020 Release 1, and Agilent Instrument Control Framework Support Layer v3.3.

See also: For information on the Waters drivers and on the Agilent Instrument Control Framework Support Layer, refer to the following documents:

- *Waters Driver Pack 2019 Release 2 Installation and Configuration Guide* (715006278)
- *Waters Driver Pack 2019 Release 2 Service Release 1 Analytical Release Notes* (715006741)
- *Waters Driver Pack 2020 Release 1 Installation and Configuration Guide* (715006278)
- *Agilent Instrument Control Framework Support Layer v3.3 Release Notes* (715006563)

Recommendation: For Empower 3.6.0, Waters recommends using only instrument drivers that are compatible with Windows 10.

To further align our products, after the release of Empower 3 Feature Release 5 Service Release 4, Waters will no longer offer Empower defect corrections or enhancements related to IEEE control in any release of Empower. As a result, support for IEEE instrument control will cease in all versions of Empower after the release of Empower 3 Feature Release 5 Service Release 4. If you use IEEE instrument control beyond Empower 3 Feature Release 5 Service Release 4, it was not tested.

The instruments in the following table are no longer supported.

Table 1–4: Instruments no longer supported

Instrument	As of this release:
410 RI detector	Empower 3
486 TUV detector	Empower 3
996 PDA detector	Empower 3
474 fluorescence detector	Empower 3
5890 gas chromatograph	Empower 3 FR3
7673 automatic liquid sampler	Empower 3 FR3
Waters ZQ 2000 mass detector	Empower 3 FR3
Waters ZQ 4000 mass detector	Empower 3 FR3
Waters EMD1000 mass detector	Empower 3 FR3

Support for Agilent GC modules 6850, 6890, and 7890

Prior to Windows 10, the Agilent 6850, 6890, and 7890 GC modules were controlled by either an instrument driver built directly into Empower or by a legacy Instrument Control Software (ICS) driver. Additionally, the 6850 and 6890 used either RS-232 serial control or RS-232 serial/edgeport USB driver control. To control these modules in an Empower Windows 10 environment, Waters recommends installing the Agilent drivers available with our Instrument Control Framework (ICF) Support Layer version 3.0 and later, which uses Ethernet communication. To enable Ethernet communication with the 6850 or 6890 modules, install the Ethernet conversion kits available from Agilent. For more information on ICF Support Layer drivers, see www.waters.com > Support > Support Documents and Downloads, search for "ICF", and filter the search results by Content Type = Downloads.

Deployment notes

Before you install the application

You can install Empower 3.6.0 as a new installation on a system where no Chromatography Data Software (CDS) is currently installed. You cannot upgrade a previous version of Empower software to Empower 3.6.0.

Restrictions:

- For existing installations, in-place upgrades are not available.
- You can only perform a system object export on the database server. Waters recommends using the system object export and import utilities. If you do not perform the system object

export and the subsequent object import, you must manually recreate any objects you want to use with Empower 3.6.0 (such as systems, users, nodes, and so on).

Review the *Empower 3.6.0 Installation and Configuration Guide* (715006976) for complete installation instructions and the *Waters Ethernet Instrument Getting Started Guide* (71500074403).

Installation changes

The following installation changes take effect with Empower 3.6.0.

- Empower Mobile is no longer supported.
- Sample Set Generator does not currently install on Windows 10.
- When you install Empower server, you can only perform a full installation, including Oracle software. If Oracle is already installed, the Empower server installer stops.
- For more information on restoring projects, see the topic "Restoring projects" in the Empower Online Information System.

Version information

You can view specific version information for Empower 3.6.0 in the following locations:

- Empower version (3.6.0)
 - **Help > About**
 - Information icon on the Empower login screen
- Empower Product version (7.0.3471.917)
 - Installation Log
 - **Control Panel > Add/Remove Programs > Empower**
 - **Settings > Apps & Features > Empower**
- Software Build version (Empower 3 Software Build 3471)
 - Verify Files
 - Installation Log
 - **Settings > Apps & Features > Empower**
 - Registry (HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Waters\Empower\SetupVersion)
- Database version (7.60.00.00)

- **Help > About**
- Verify Files
- Information icon on the Empower login screen
- Oracle Production version (View the [Upgraded Oracle support](#) section)

Default projects

A default project containing example data for training and troubleshooting purposes is included with the software media when you purchase Empower. Additional projects are also available on the Waters Marketplace (<https://marketplace.waters.com>).

New features and enhancements

Empower 3.6.0 includes the following new features and enhancements.

Upgraded Oracle Support

For all Empower 3.6.0 configurations, the Oracle version is 19c. Server platforms run Oracle database version 19.7.0.0.0. Empower Personal workstations, clients, and LAC/E devices run Oracle client version 19.3.0.0.0.

Container and Pluggable Databases

Empower 3.6.0 implements the Oracle 19c Container Database (CDB) and Pluggable Database (PDB) infrastructure to your environment. This infrastructure creates a single database (CDB) that can contain multiple databases (PDBs) and isolate them from one another. You can consolidate all databases in your environment to a Container Database. With this infrastructure, you can perform tasks such as database operations, backups, and software deployments faster.

For more information on Container and Pluggable Databases, refer to the Oracle website (<https://docs.oracle.com/>).

Waters Password Reset Utility

The Waters Password Reset Utility is an application on the Empower media used to reset the following user account passwords located in the Container Database:

- Sys
- System
- C##WATERS_WDMVIEWS

You can open the Waters Password Reset Utility from the `AdministratorScripts` directory on the Empower media or you can copy and use the application from the directory on any computer with an Empower Client or Server.

Reset the user account passwords after you install Empower 3.6.0, and then periodically, according to your organization's security policies and standard operating procedures. The Waters Password Reset utility requires that new passwords must be between 4 and 30 characters and must not contain the following: \$, %, /, \, [,], @.

Note: The Sys password must match the WDM account password DBM Script User Password.

NuGenesis LMS integration

Empower 3.6.0 supports improved integration with future NuGenesis LMS releases. You can set certain registry keys to add the following new features to Empower.

Note: The following new features are not available with currently available NuGenesis LMS versions but will be available with a future NuGenesis LMS release.

- You can upload data in the Results tab of the Project window from Empower to LMS and use the Date Uploaded to LMS column to view the upload status. The Date Uploaded to LMS column is selectable in report tables.
- In Configuration Manager, you can view the status of your systems by adding the System Status filter in the View Filter Editor. The System Status is also visible when you access Run Samples. If you run samples with a system that has the Acceptable status, the Run Samples window opens. If the system you choose does not have the Acceptable status, a warning message displays with the reason from LMS.
- You can add custom LMS menus to each window in Empower. The custom LMS menu is the same in both QuickStart and Pro.

Operating system changes

Empower 3.6.0 does not support these operating systems:

- Windows 7 on an Empower Personal workstation, Empower Client, or LAC/E
- Red Hat Enterprise Linux Server 7.6

Configuration changes

This section does not apply for this release of this product.

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.

INFEMP-4588 (CRI-301)

Previously, if you specified a username and left the password field blank, and then attempted to log in to Empower, a failed login attempt was logged in the System Audit Trail and Message Center.

Now, if the password field is blank, the login attempt does not proceed and an error message reminds you to type your password.

Note: This is only relevant if a password is required based on your System Policy Settings.

Also reported as PCS 53324.

INFEMP-5437 (CRI-394)

Previously, in the View Filter Editor for Project Audit Trail, not all actions were available in the Action column.

Now, all actions are available in the Action column.

INFEMP-6746 (CRI-1148)

Previously, when you used a Sample Value Type of Concentration and calculated a calibration curve using x axis values of Amount, or when you used a Sample Value Type of Amount and calculated a calibration curve using x axis values of Concentration, the '% Deviation' Peak Field calculation did not account for the injection volume. Empower used the injection volume to convert concentrations to amounts and vice versa. This conversion happened as needed everywhere except when calculating % Deviation.

This only affected the peak's % Deviation value when the "Sample Values Used in Calculations" field in the Component tab of the processing method differed from the X Value in the processing method's component.

Now, Empower calculates % Deviation correctly.

Also reported as PCS 55670.

INFEMP-6973 (CRI-822)

Previously, if an instrument in your instrument method was controlled using an embedded instrument driver, such as Alliance instruments, when you edited the instrument method, an `Attempted an unsupported operation` error displayed.

Now, you can edit the instrument method and no error displays.

INFEMP-7226 (CRI-1482)

Previously, when you locked channels with the Signoff 2 process, channels with a Control sample type or channels that were processing may not have locked.

Now, when you lock channels with the Signoff 2 process, all appropriate channels are locked.

Also reported as PCS 55238.

INFEMP-7232 (CRI-1486)

Previously, the Africa/Cairo time zone incorrectly used Daylight Savings Time.

Now, the Africa/Cairo time zone no longer uses Daylight Savings Time.

Also reported as PCS 55269.

INFEMP-7266 (CRI-1519)

Previously, when you changed the minimum value of a Custom Field at four or more places to the right of the decimal, you were not prompted for an audit trail comment and the change was not recorded in the Project Audit Trail.

Now, you are prompted for an Audit Trail comment and the action is recorded in the Project Audit Trail.

Also reported as PCS 56576.

INFEMP-7286 (CRI-1441)

Previously, in QuickStart, when you opened a Sample Set Method, a `Method in sample set not valid for this system` error may have displayed.

Now, the method opens and no error message is displayed.

Also reported as PCS 53981.

INFEMP-7310 (CRI-1212)

Previously, when you changed the locked or unlocked state in a custom field and then clicked **Cancel**, the state of the custom field did not return to its original locked or unlocked state.

Now, when you click **Cancel** in the Save Changes to Custom Field dialog, the locked check box remains in the same state, the warning message does not display, and a new audit trail entry is not created.

INFEMP-8335

Previously, in Column Properties, when you both increased Data Precision to 14 and selected Use Exponential Notation for values beyond 14 decimal places, the appropriate number of significant digits did not display in the Sample History log.

Now, the appropriate number of significant digits displays in the Sample History log.

INFEMP-8336

A user with a User Type that does not exist can no longer log in to Empower.

INFEMP-10079 (CRI-1775)

Previously, in Citrix environments, the Signoff Results button failed intermittently and the created PDF was not stored in the database.

The Signoff Results button now works consistently in Citrix environments with larger PDF reports and the created PDF is stored in the database.

INFEMP-10864 (CRI-1106)

Previously, the Moroccan time zone did not automatically adjust the clock for daylight savings time during Ramadan.

Now, the clock automatically adjusts during Ramadan.

INFEMP-10900 (CRI-1157)

You can install Empower on computers with Windows 10 operating systems, including Windows 10 Education, that have partitions greater than 2TB.

INFEMP-11084 (CRI-2388)

Previously, a potentially serious security issue could occur when **Don't allow multiple logons** was not enabled in Empower System Policies.

Now, the security issue no longer occurs.

INFEMP-12002

Previously, after you uninstalled Empower software from a Windows 10 device that had Oracle Client preinstalled, the preinstalled Oracle Client version was not functional. This only applied if you installed Oracle Client before you installed Empower.

Now, when you uninstall Empower software, the preinstalled Oracle Client version is functional.

INFEMP-12537 (CRI-2707)

Previously, when you selected **Run Samples Using A Template** and clicked Run Samples in the Walk-Up window, Run Samples failed and Empower stopped responding.

Now, in the Walk-Up window, **Run Samples Using A Template** works as expected and Empower functions properly.

INFEMP-12572 (CRI-2246)

Previously, when you typed Japanese characters in a Method name or System name field and then pressed `Enter`, the characters displayed as different or illegal characters in the Method name field and the System name dialog.

Now, Japanese characters display as intended.

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.

INFEMP-2188 (CRI-309)

When a user logs in to Empower 3 Feature Release 4 Service Release 3 and higher via Citrix, a new Citrix Node Type is created in Empower. If a user attempts to log in to Empower via Citrix and the user does not have the Create Node privilege, they see the error message `Your user profile does not allow you to create a new node. Please contact your Administrator.`

Node privileges were added in Empower 3 Feature Release 4 Service Release 3 and were intended to allow administrators to prevent general users from modifying nodes. This differs from the way node privileges were previously managed in a Citrix environment.

Also reported as PCS 56677.

INFEMP-3120

When you run Verify Files on an Empower node, the Oracle Database Version displayed in Verify Files is `Oracle Database 19c Enterprise Edition Release 19.0.0.0.0`, which is the major version. The actual product version installed is `19.7.0.0.0`.

INFEMP-3976

After uninstalling Empower Enterprise Server, the `C:\Program Files (x86)\Waters\WDM` directory is still present, but the directory is empty. Also, Waters Database Manager is still present in the Start menu.

Solution:

- Delete the `WDM` folder manually.
- Delete Waters Database Manager from the Start menu by deleting the Waters Database Manager folder from the following location: `%programdata%\Microsoft\Windows\Start Menu\Programs`.

INFEMP-6021 (CRI-582)

A processing method can incorrectly have a Named Group with duplicate peak names, but peak names should be unique within a Named Group. Duplicate peak names can affect calculations. You can edit the Named Group to remove any duplicate names.

Also reported as PCS numbers 54441, 55718, 54846, 45427.

INFEMP-6794 (CRI-1134)

After you install Empower Personal on a workstation and attempt to log on to Empower or the Waters Licensing Wizard, the log on attempt may fail and the `Credential cannot be verified at this time` error message may appear.

Solution: In Services, set the Startup Type of the Oracle Listener Service to **Automatic (Delayed Start)**. Power-on the computer, wait until the status of the Oracle listener service is Running, log in to Empower, and then start the Waters Licensing Wizard.

INFEMP-6969 (CRI-474)

Editing a sample set custom field causes a new sample set ID to be created, as expected. If this is done post-acquisition, then the new sample set method does not include the history associated with the original sample set. In Preview, the edited sample set custom field history is available in the sample set report group, but it is not available in the sample set method report group. If the sample set custom field is edited during acquisition, the acquired data is also split between two sample sets.

Also reported as PCS numbers 55326, 56686, 54069, 53506, 53433, 54487, 54947, 54698, 55905, 56713, 56710, 56335, 55851, 56424, 56499, 53560, 56034, 56683.

INFEMP-6975 (CRI-609)

In Empower 3.6.0, Waters Database Manager (WDM) may optionally be set to back up the Empower Raw Data in addition to the Database. However, projects deleted from Empower are not automatically removed from the Raw Data backup location, which might result in unexpected disk capacity utilization. Appropriately trained administrators can manually remove the Raw Data from the backup location for projects removed from Empower.

INFEMP-7003 (CRI-1103)

Exporting the channel data and then importing the channel data using the CDW format changes retention time by one data point. All other values, such as Height and Area, remain the same.

INFEMP-7247 (CRI-1500)

RMAN backups fail if the database alias (WAT12 or WAT18 by default) is changed in the `tnsnames.ora` file located at `\Oracle\Oracle12c\network\admin` or `\Oracle\Oracle18c\network\admin`. An error code associated with the failure is recorded in the backup log file.

Also reported as PCS 55824.

INFEMP-7495

When installing a Personal Workstation, the system incorrectly creates two Defaults projects in the Projects folder: one when the installation starts and the other when the installation finishes. The expected behavior is for only one Defaults project to be created.

INFEMP-7499

In Report Publisher, with a GPC project, when you add the Internal Std Peak Table from the Internal Standard Groups, the Report Publisher window closes unexpectedly. The expected behavior is for the system to add the table to the main page of the report and to inform the user through the report log that the table contains information that does not match the reported data.

INFEMP-7782

In the Korean version of the About Pro window, the Installed Service Packs and the Installed Options boxes do not have scroll bars.

INFEMP-7831

In the Review window, with a GPCVLS project, when the **Show All Slices** option is selected in the **Distribution** tab and a custom **dwt/d(logM)** field is created, the value displayed in the custom field should match the value from the **dwt/d(logM)** column. However, the value in the custom field differed.

INFEMP-8221

In Run Samples, in the In-Needle Auto Additions editor, when a user specifies incomplete information in the Vial or InjVol column, the system correctly displays the `Entry in row %d is incomplete. Enter a valid location and a volume message`, where %d represents the row number. In the Japanese interface, due to an error in translating the message, the %d value is not converted into a number and is displayed as such.

INFEMP-8222

In the Korean, Chinese, and Japanese versions, a hotkey label used to access the Empower Help is present on the Help button and works as expected. In the English version, the hotkey label is not displayed, but functions as expected.

INFEMP-8354 (CRI-1866)

When bringing more than 30 3D results into Report Publisher, the following messages appear in the Message Center: `Not enough storage is available to process this command` and `Chrom map view of file failed`. This can occur when bringing results in from different sample sets. If less than 30 results are brought into Report Publisher, no error messages appear.

INFEMP-8492

In Run Samples, when you select a project, select the second system in the Chromatographic Systems box, and then click **Use Walk-Up interface**, a prompt appears indicating that the service date for the system has been reached. If you select **No** at this prompt, an error message appears and the Walk-Up window fails to close automatically.

INFEMP-8498

In Review, with an ApexTrack processing method, when you click **Show Events**, right-click either the Start or the End vertical lines, and select **Modify Integration Event** or **Delete Integration Event** from the context menu, an `Encountered an improper argument` error appears.

Solution: Modify the Start and End lines by repositioning them on the plot. You can also modify or delete the lines by modifying or deleting the values of the End and Start times from the **Integration** tab of the processing method window.

INFEMP-8573

When you log in and select a chromatographic system that is in use, and then click **Use Walk-Up Interface**, the system allows you to queue samples and sample sets, but does not provide any information on the status of the existing queue.

INFEMP-8601

Default Guest user types can select and open the **Manage Defaults** option from Report Publisher with non-FAT projects. With FAT projects, even if the option is available, nothing happens when selecting the **Manage Defaults** option.

INFEMP-8754

In the QuickStart interface, when project access is set to World as Guest, users with the Backup project privilege cannot back up projects using the **Manage > Backup Current Project** menu option.

Solution: Back up projects from Configuration Manager using the **Manage > Configuration** menu option.

INFEMP-8915

When you open Run Samples using a chromatographic system that does not allow In-Needle Auto Additions, when you press **Options** in the Single tab, the Auto Additions field is present in the Options table.

INFEMP-9122

When running Verify Files on a Windows 10 Pro machine, the checksum file shows the operating system name as Windows Enterprise instead. The same difference appears on Empower SystemsQT for Empower software reports that contain Software installation information.

INFEMP-9915

When you open the Sample Set Method Editor and select Transfer in the Prep Type field, the Transfer dialog opens but you cannot make changes to the table.

INFEMP-10993

If you use a monitor with 4k resolution and set scaling over 100%, when you move a toolbar or control panel in Empower, you see a rectangle up and to the left of the toolbar or control panel you are moving.

Solution: To select where to move the toolbar or control panel, use the location of the cursor instead of the rectangle.

INFEMP-11383

On the Import/Export tab of Waters Database Manager, when you select **Datapump Export > Schemas > Millennium > Finish**, no `Export.dmp` files are created. When you attempt to view the log in the Datapump Job History, an error message is displayed. Even though no log or export files are created, the Datapump Export was successful.

INFEMP-11519

If you install Microsoft KB4577015 on Windows 10 Enterprise 2016 LTSC Version 1607 or Windows Server 2016, an error occurs when you attempt to access **Local Security Policies > Local Policies > Security Options**. This prevents the verification of the security settings the Empower installer implements and the ability to manually configure the security settings required by several platforms, including BC LAC/E. This issue does not affect the installation of Empower.

Solution: Uninstall KB4577015 or install Microsoft KB4580346.

INFEMP-11560

The Waters Network Configuration Assistant default user account, System, cannot be used to set up a service name to run Empower.

Solution: Use another account defined in the Pluggable Empower Database to set up a service name.

INFEMP-11774

When you launch the Waters Email Service installer in Chinese, Japanese, or Korean, some text does not display correctly.

INFEMP-11990

When you open a Processing Method in the method editor and delete a Named Group from the Components table, the method editor stops responding.

INFEMP-12180 (CRI-2505)

If you export a report method that contains a table with many rows in ASCII format, when you open the report, a carriage return is added to a row and changes the alignment of the following row.

Solution: Edit the report method set with one or more of the following:

- Align the report method components inside the report method margins.
- Remove the chromatograms from the report method.
- Edit the tables and align column names in a single row.

INFEMP-12711

When you use the Japanese IME and type a half-width Japanese character not accepted by Empower, the cursor fails.

Solution: When this issue occurs, change the IME mode to English and type an English character.

INFEMP-13017

When you type more than one Korean character in the New user group dialog field, the first letter of the second character overwrites the first character, and an error message appears.

Solution: Type the user group name in a text file, copy, and then paste the user group name into the New user group dialog field.

INFEMP-13419

The copyright date visible in Empower applications is not current.

Test configurations

This application update was tested on the following system configurations.

Windows database server

Windows Server 2016 64-bit, Standard

Windows Hotfixes:

KB3186568,KB3192137,KB3199986,KB4035631,KB4049065,KB4091664,KB4093137,KB4132216,KB4465659,KB4485447,KB4565912,KB4571694,KB4494175,KB4509091,KB4520724,KB4550994,KB4576750,KB4577015,KB4512517,KB4498947,KB4540723,KB4541329,KB4565511,KB4033393,KB4521858,KB4562561,KB4054590,KB4480961,KB4556813

Red Hat Linux database server

Red Hat Server, Release 8.0

Red Hat Enterprise Linux Server 8.0 packages:

gnupg2-smime-2.2.9-1.el8.x86_64 cyrus-sasl-plain-2.1.27-0.3rc7.el8.x86_64
libdnf-1.12-26.el8.x86_64 perl-Date-Manip-6.60-2.el8.noarch libraw1394-2.1.2-5.el8.x86_64
ibus-gtk3-1.5.19-4.el8.x86_64 pcp-selinux-4.3.0-4.el8_0.x86_64 python3-
systemd-234-8.el8.x86_64 rsync-3.1.3-4.el8.x86_64 libmspack-0.7-0.1.alpha.el8.x86_64 dhcp-
libs-4.3.6-30.el8.x86_64 keyutils-1.5.10-6.el8.x86_64 urw-base35-nimbus-roman-
fonts-20170801-10.el8.noarch pcp-pmda-postgresql-4.3.0-4.el8_0.x86_64 liberation-mono-
fonts-2.00.3-4.el8.noarch at-spi2-atk-2.26.2-1.el8.x86_64 dos2unix-7.4.0-3.el8.x86_64 kbd-
misc-2.0.4-8.el8.noarch plymouth-core-libs-0.9.3-12.el8.x86_64 perl-File-Path-2.15-2.el8.noarch
python3-rtslib-2.1.fb69-3.el8.noarch pcp-pmda-gpfs-4.3.0-4.el8_0.x86_64 python-srpm-
macros-3-37.el8.noarch genisoimage-1.1.11-39.el8.x86_64 gnu-free-serif-
fonts-20120503-18.el8.noarch curl-7.61.1-8.el8.x86_64 fwupd-1.1.4-1.el8.x86_64 perl-XML-
Parser-2.44-11.el8.x86_64 python3-cryptography-2.3-2.el8.x86_64 pcp-pmda-
summary-4.3.0-4.el8_0.x86_64 hplip-common-3.18.4-7.el8.x86_64 libblockdev-
nvdim-2.19-7.el8.x86_64 sil-nuosu-fonts-2.1.1-14.el8.noarch openssl-
pkcs11-0.4.8-2.el8.x86_64 libosinfo-1.2.0-5.el8.x86_64 libstdc++-devel-8.2.1-3.5.el8.x86_64

python3-pip-9.0.3-13.el8.noarch pcp-pmda-mailq-4.3.0-4.el8_0.x86_64
basesystem-11-5.el8.noarch libblockdev-crypto-2.19-7.el8.x86_64 iwl3945-
firmware-15.32.2.9-92.el8.1.noarch libutempter-1.1.6-14.el8.x86_64 gnome-shell-extension-apps-
menu-3.28.1-8.el8.noarch libselinux-utils-2.8-6.el8.x86_64 gom-0.3.3-5.el8.x86_64 qemu-
kvm-2.12.0-65.module+el8.0.0+4084+cceb9f44.5.x86_64 libcom_err-1.44.3-2.el8.x86_64 kernel-
modules-4.18.0-80.el8.x86_64 xorg-x11-utils-7.5-28.el8.x86_64 os-prober-1.74-6.el8.x86_64
speex-1.2.0-1.el8.x86_64 python3-webencodings-0.5.1-6.el8.noarch pcp-pmda-
papi-4.3.0-4.el8_0.x86_64 libjpeg-turbo-1.5.3-7.el8.x86_64 bluez-obexd-5.50-1.el8.x86_64 nss-
sysinit-3.44.0-7.el8_0.x86_64 json-glib-1.4.4-1.el8.x86_64 gnome-initial-
setup-3.28.0-8.el8.x86_64 perl-HTML-Tagset-3.20-33.el8.noarch libgphoto2-2.5.16-3.el8.x86_64
cockpit-system-185.1-1.el8_0.noarch libffi-3.1-18.el8.x86_64 kernel-4.18.0-80.11.2.el8_0.x86_64
gsettings-desktop-schemas-3.28.1-1.el8.x86_64 cpp-8.2.1-3.5.el8.x86_64
hypervvssd-0-0.27.20180415git.el8.x86_64 rhnlib-2.8.6-8.module+el8.0.0.z
+3494+e6f475f6.noarch lcms2-2.9-2.el8.x86_64 python3-slip-0.6.4-11.el8.noarch bind-export-
libs-9.11.4-17.P2.el8_0.1.x86_64 harfbuzz-1.7.5-3.el8.x86_64 openssh-
server-7.8p1-4.el8.x86_64 gnome-keyring-pam-3.28.2-1.el8.x86_64 shim-x64-15-8.x86_64
sed-4.5-1.el8.x86_64 pulseaudio-utils-11.1-22.el8.x86_64 python3-libs-3.6.8-4.el8_0.x86_64 perl-
Fedora-VSP-0.001-9.el8.noarch python3-libreport-2.9.5-6.el8.x86_64 sssd-
common-2.2.3-20.el8.x86_64 perl-parent-0.237-1.el8.noarch python3-
rpm-4.14.2-11.el8_0.x86_64 xmlrpc-c-1.51.0-5.el8.x86_64 samba-client-4.11.2-13.el8.x86_64
tar-1.30-4.el8.x86_64 cups-client-2.2.6-25.el8.x86_64 iptables-1.8.2-9.el8_0.1.x86_64
NetworkManager-bluetooth-1.14.0-14.el8.x86_64 libpipeline-1.5.0-2.el8.x86_64
libpciaccess-0.14-1.el8.x86_64 libpeas-loader-python3-1.22.0-6.el8.x86_64 libvirt-daemon-driver-
storage-scsi-4.5.0-24.3.module+el8.0.0+4084+cceb9f44.x86_64 kernel-
core-4.18.0-80.el8.x86_64 kpatch-0.6.1-1.el8.noarch libXfixes-devel-5.0.3-7.el8.x86_64 iso-
codes-3.79-2.el8.noarch libnma-1.8.10-5.el8.x86_64 python3-dnf-plugin-
spacewalk-2.8.5-11.module+el8.0.0.z+3494+e6f475f6.noarch perl-Pod-
Perldoc-3.28-396.el8.noarch libglvnd-gles-1.0.1-0.9.git5baa1e5.el8.x86_64 spice-
gtk3-0.35-7.el8.x86_64 python3-kickstart-3.16.4-1.el8_0.noarch python3-
blockdev-2.19-7.el8.x86_64 smartmontools-6.6-3.el8.x86_64 giflib-5.1.4-3.el8.x86_64 perl-
Git-2.18.1-3.el8.noarch hwdata-0.314-8.0.el8.noarch qt5-qtbase-gui-5.11.1-5.el8.x86_64
iptstate-2.2.6-6.el8.x86_64 libverto-0.3.0-5.el8.x86_64 libevdev-1.5.9-5.el8.x86_64
gd-2.2.5-6.el8.x86_64 keybinder3-0.3.2-4.el8.x86_64 yelp-xsl-3.28.0-2.el8.noarch perl-XML-
LibXML-2.0132-2.el8.x86_64 ed-1.14.2-4.el8.x86_64 acl-2.2.53-1.el8.x86_64
libvisual-0.4.0-24.el8.x86_64 pcp-pmda-prometheus-4.3.0-4.el8_0.x86_64
iputils-20180629-1.el8.x86_64 urw-base35-standard-symbols-ps-fonts-20170801-10.el8.noarch
udisks2-iscsi-2.8.0-2.el8.x86_64 symlinks-1.4-19.el8.x86_64 perl-Socket-2.027-2.el8.x86_64
fuse-common-3.2.1-12.el8.x86_64 pcp-pmda-nginx-4.3.0-4.el8_0.x86_64
xfsprogs-4.19.0-2.el8.x86_64 libstoragemgmt-1.6.2-9.el8.x86_64 metacity-3.28.0-1.el8.x86_64
julietaula-montserrat-fonts-7.200-2.el8.noarch perl-IO-Socket-IP-0.39-5.el8.noarch elfutils-
libs-0.174-6.el8.x86_64 pcp-pmda-mysql-4.3.0-4.el8_0.x86_64 python3-
chardet-3.0.4-7.el8.noarch ghc-srpm-macros-1.4.2-7.el8.noarch totem-pl-
parser-3.26.1-2.el8.x86_64 gutenprint-doc-5.2.14-3.el8.x86_64 mozjs52-52.9.0-1.el8.x86_64
libmount-2.32.1-8.el8.x86_64 pcp-pmda-apache-4.3.0-4.el8_0.x86_64 rpm-ostree-
libs-2018.8-2.el8.x86_64 publicsuffix-list-dafsa-20180723-1.el8.noarch gnome-
shell-3.28.3-10.el8.x86_64 iwl2000-firmware-18.168.6.1-92.el8.1.noarch

libnetfilter_conntrack-1.0.6-5.el8.x86_64 kbd-2.0.4-8.el8.x86_64 pcp-webapp-
blinkerlights-4.3.0-4.el8_0.noarch passwd-0.80-2.el8.x86_64 libxml2-2.9.7-5.el8.x86_64
subscription-manager-initial-setup-addon-1.23.8-35.el8.x86_64 gvfs-
client-1.36.2-2.el8_0.1.x86_64 openjpeg2-2.3.0-8.el8.x86_64 dbus-1.12.8-7.el8.x86_64 pcp-
export-pcp2graphite-4.3.0-4.el8_0.x86_64 gssproxy-0.8.0-5.el8.x86_64 gvnc-0.9.0-1.el8.x86_64
libnl3-3.4.0-4.el8.x86_64 python36-3.6.8-2.module+el8.0.0+2975+e0f02136.x86_64 perl-
Compress-Raw-Bzip2-2.081-1.el8.x86_64 libusb-1.0.22-1.el8.x86_64 cups-
filters-1.20.0-14.el8_0.1.x86_64 sane-backends-1.0.27-19.el8.x86_64 libwayland-
server-1.15.0-1.el8.x86_64 gedit-3.28.1-3.el8.x86_64 gvfs-smb-1.36.2-2.el8_0.1.x86_64
libdvdnav-5.0.3-8.el8.x86_64 microcode_ctl-20180807a-2.20190618.1.el8_0.x86_64
polycoreutils-python-utils-2.8-16.1.el8.noarch libmicrohttpd-0.9.59-2.el8.x86_64
pcre-8.42-4.el8.x86_64 subscription-manager-plugin-container-1.23.8-35.el8.x86_64
flatpak-1.0.6-3.el8_0.x86_64 xcb-util-keysyms-0.4.0-7.el8.x86_64 avahi-glib-0.7-19.el8.x86_64
net-snmp-libs-5.8-7.el8_0.2.x86_64 espeak-ng-1.49.2-4.el8.x86_64 iscsi-initiator-utils-
iscsiuio-6.2.0.876-7.gitf3c8e90.el8.x86_64 libxcb-1.13-5.el8.x86_64
libsss_certmap-2.0.0-43.el8_0.3.x86_64 libdw-2.0180129-4.el8.x86_64 redhat-
logos-80.7-1.el8.x86_64 libsmbclient-4.11.2-13.el8.x86_64 rhnsd-5.0.35-3.module
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 policy-3.14.1-61.el8_0.2.noarch libreport-web-2.9.5-6.el8.x86_64 perl-HTTP-
 Tiny-0.074-1.el8.noarch gnome-terminal-3.28.2-3.el8.x86_64 zip-3.0-23.el8.x86_64 theora-
 tools-1.1.1-21.el8.x86_64 libvirt-daemon-driver-interface-4.5.0-24.3.module

+el8.0.0+4084+cceb9f44.x86_64 glusterfs-client-xlators-3.12.2-40.2.el8.x86_64
git-2.18.1-3.el8.x86_64

Empower File Server

Windows Server 2016 64-bit, Standard

Windows Hotfixes:

KB3186568,KB3192137,KB3199986,KB4035631,KB4049065,KB4091664,KB4093137,
KB4132216,KB4465659,KB4498947,KB4509091,KB4540723,KB4565912,KB4576750,
KB4541329

Citrix Server (XenApp Server 7.15 Enterprise)

Citrix Presentation Server

Citrix Windows Server 2016 64-bit, Standard

Windows Hotfixes:

KB3186568,KB3192137,KB3199986,KB4035631,KB4049065,KB4093137,KB4132216,
KB4520724,KB4537759,KB4550994,KB4576750,KB4556813

Citrix App Server

Citrix Windows Server 2016 64-bit, Standard

Windows Hotfixes:

KB3186568,KB3192137,KB3199986,KB4035631,KB4049065,KB4093137,KB4132216,
KB4494175,KB4550994,KB4561600,KB4565912,KB4576750,KB4577015

Citrix Client

Citrix Windows 10 Pro 64-bit

Citrix Receiver 4.9 version 14.9.0.2539

Windows Hotfixes:

KB4578974,KB4513661,KB4516115,KB4517245,KB4521863,KB4524244,KB4537759,KB4538674,KB4541338,KB4552152,KB4560959,KB4561600,KB4565554,KB4569073,KB4576751,KB4577670,KB4580325,KB4577671

Client

Windows 10 Pro 64-bit, Professional

Windows Hotfixes:

KB4576947,KB4517245,KB4561600,KB4576751,KB4577062,KB4576484,KB4497165,KB4513661,KB4516115,KB4521863,KB4537759,KB4541338,KB4552152,KB4559309,KB4560959,KB4569073,KB4574727,KB4565554,KB4534132,KB4551762,KB4562900,KB4559004,KB4552924,KB4470788,KB4480056,KB4487038,KB4489907,KB4493478,KB4493510,KB4562562,KB4561608,KB4569751,KB4565351,KB4565483,KB4524569,KB4538674,KB4565633,KB4503308,KB4506472,KB4508433,KB4509096,KB4515383,KB4497727,KB4570723,KB4533002,KB4552931,KB4560960,KB4577670,KB4577671,KB4578974,KB4580325

Standalone/Personal Workstation

Windows 10 Pro 64-bit, Professional

Windows Hotfixes:

KB4576947,KB4497165,KB4513661,KB4516115,KB4517245,KB4521863,KB4524569,KB4537759,KB4538674,KB4560959,KB4561600,KB4565554,KB4576751,KB4574727,KB4497727,KB4565633,KB4498523,KB4503308,KB4515530,KB4552152,KB4565483,KB4569751,KB4569073,KB4565351,KB4570723,KB4541338,KB4559309,KB4552931,KB4560960,KB4576754,KB4577670,KB4577671,KB4578974,KB4580325,KB4580980

LAC/E device

Windows 10 Enterprise LTSC 1607

Windows Hotfixes:

KB4576484,KB4513661,KB4516115,KB4517245,KB4521863,KB4524569,KB4561600,KB4565554,KB4576751,KB4574727,KB4576947,KB4497165,KB4537759,KB4541338,

KB3186568,KB4033631,KB4049065,KB4049411,KB4054507,KB4346087,KB4520724,
KB4524244,KB4565912,KB4576750,KB4537764,KB4577015,KB4562900,KB4559004,
KB4577015,KB4569751,KB4569073,KB4565351,KB4537479,KB4346084,KB4456655,
KB4486153,KB4486155,KB4503308,KB4509094,KB4512509,KB4509091,KB4550994,
KB4550929,KB4565633,KB4498523,KB4515530,KB4552152,KB4565483,KB4580325,
KB4580346,KB4497727,KB4559309,KB4533002,KB4552931,KB4560959,KB4560960