

RELEASE NOTES

TestStand

Version 2017

These release notes contain TestStand 2017 system requirements, licensing information, and installation instructions. The release notes also contain instructions for migrating to the current version of TestStand and information about new features and other changes since TestStand 2016 SP1.

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Getting Started

The best way to familiarize yourself with TestStand is to explore the *Guide to TestStand Documentation* topic in the *TestStand Help*, which contains links to all the TestStand documentation in electronic format. You can access the *TestStand Help* in the following ways:

- Select **Help»TestStand Help** in the TestStand Sequence Editor.
- **(Windows 8.1)** Click the **NI Launcher** tile on the Start screen and select **TestStand»Documentation»TestStand Help**.
- **(Windows 10 or 7)** Select **Start»All Programs»National Instruments»TestStand»Documentation»TestStand Help**.

Software Requirements

Refer to the following sections for information about the software National Instruments requires or supports for use with TestStand 2017.

Recommended System Requirements

National Instruments recommends the system requirements described in the following table to run TestStand 2017.

Table 1. Recommended and Minimum System Requirements

Requirement	Recommended	Minimum
Processor	Pentium G1 or equivalent	Pentium 4/M or equivalent
Memory	2 GB	1 GB
Disk space for TestStand (32- or 64-bit)	1 GB	—
Disk space for Microsoft .NET Framework version 4.6, if not already installed	2.5 GB	—
Disk space for device drivers from the National Instruments Device Drivers DVD	Amount of space required varies depending on the drivers you install. Install only the drivers necessary for the hardware you will use.	—
Video adapter	—	1024 x 768 resolution

Supported Microsoft Windows Operating Systems and Recommended Service Packs

Use the Microsoft Windows operating systems and service packs described in the following table with TestStand 2017. You can run 32-bit TestStand 2017 on 32-bit Microsoft Windows operating systems or on 64-bit Windows operating systems, as shown in the following table. 64-bit TestStand 2017 requires a 64-bit version of Windows 7 or later or Windows Server 2008 or later.

Table 2. Supported Microsoft Windows Operating Systems

Operating System	Edition	Service Pack (or equivalent)	Comments
Windows 10	Professional, Enterprise	Build 1703	For more information about NI support for Windows 10, visit ni.com/windows10 .
Windows 8.1	Professional, Enterprise	—	Refer to the <i>How to Use NI Software with Microsoft Windows 8.1</i> section of the <i>TestStand 2017 Readme</i> for more information about using TestStand on Windows 8.1. For more information about NI support for Windows 8.1, visit ni.com/windows8 .
Windows 7	Starter, Professional, Enterprise, Ultimate	SP1	Refer to the <i>TestStand and Windows 7/ Vista</i> section of the <i>NI TestStand Version 2012 Release Notes</i> for more information about using TestStand on Windows 7. Visit ni.com/info and enter the Info Code <code>exgmjr</code> to locate the <i>NI TestStand 2012 Release Notes</i> .
Windows Server 2012 (64-bit)	Enterprise	R2	TestStand supports only R2 editions of Windows Server.
Windows Server 2008 (64-bit)	Enterprise	R2	



Note National Instruments recommends that you install Microsoft Hotfix 2588507 for 64-bit Windows operating systems. Visit ni.com/info and enter the Info Code `mshotfix` for more information about Microsoft Hotfix 2588507.

Supported Microsoft Software

Use the following Microsoft software with TestStand 2017:

- Microsoft Internet Explorer 11, 10, 9, or 8
- Microsoft Visual Studio 2017, 2015, 2013, or 2012
- Microsoft .NET Framework 4.6.2

TestStand includes features that automate Visual Studio for debugging, generating, and editing code module source code. Visual Studio Express Editions do not support these features.

The .NET and Microsoft Foundation Class (MFC) examples include projects and solutions created in Visual Studio 2012.

Supported National Instruments Software

Use the National Instruments application development environments (ADEs) described in the following tables with 32-bit TestStand and 64-bit TestStand:

Table 3. Supported National Instruments Software for 32-bit TestStand 2017

Software	Supported	Allowed but not Supported	Comments
LabVIEW (32- and 64-bit)	2017 SP1, 2016, 2015 SP1, 2014 SP1, 2013 SP1	2017, 2015, 2014, 2013, 2012 SP1, 2011 SP1	<p>LabVIEW examples and user interfaces use files created with LabVIEW 2014 SP1.</p> <p>TestStand API support files for LabVIEW use files saved with LabVIEW 2012 SP1.</p> <p>TestStand 32-bit supports calling 32-bit VIs using LabVIEW 32-bit RTE, and 32- and 64-bit VIs using the LabVIEW ADE.</p>
LabWindows™ / CVI™	2017, 2015 SP1, 2015, 2013 SP2, 2012 SP1	2013 SP1, 2013, 2012 and earlier	<p>LabWindows™/CVI™ examples, user interfaces, and API use files created with LabWindows™ / CVI™ 2013 SP2.</p> <p>TestStand 32-bit supports calling only 32-bit code modules.</p>
NI Switch Executive	15.1, 3.6, 3.5	—	—

Table 4. Supported National Instruments Software for 64-bit TestStand 2017

Software	Supported	Allowed but not Supported	Comments
LabVIEW (32- and 64-bit)	2017 SP1, 2016, 2015 SP1, 2014 SP1, 2013 SP1	2017, 2015, 2014	LabVIEW examples and user interfaces use files created with LabVIEW 2014 SP1. TestStand API support files for LabVIEW use files saved with LabVIEW 2013 SP1. TestStand 64-bit supports calling 64-bit VIs using LabVIEW 64-bit RTE, and 32- and 64-bit VIs using the LabVIEW ADE.
LabVIEW NXG (64-bit)	2.0	—	—
LabWindows™/CVI™	2017, 2015 SP1, 2015, 2013 SP2	2013 SP1 and earlier	LabWindows™/CVI™ examples, user interfaces, and API use files created with LabWindows™/CVI™ 2013 SP2. TestStand 64-bit supports calling only 64-bit code modules.
NI Switch Executive	15.1	—	—

TestStand can execute code modules developed with versions of ADEs other than the listed supported versions, but National Instruments performs only limited testing with earlier versions of ADEs. TestStand might be able to execute code modules developed with versions of ADEs later than the listed supported versions, but National Instruments cannot ensure support for versions released after TestStand 2017. Visit ni.com/info and enter the Info Code `tslcp` for more information about the TestStand life cycle policy.

Recommended Database Client Software

Use the following recommended database client software with the database components included with TestStand:

- **Microsoft Access—(32-bit TestStand)** Use the Microsoft Jet 4.0 Object Linking and Embedding Database (OLE DB) Provider. **(64-bit TestStand)** Use the Microsoft Office 12.0 Access Database Engine OLE DB Provider. You can download this provider from the Microsoft website at www.microsoft.com.



Note You cannot install the Microsoft Office 12.0 Access Database Engine OLE DB Provider with 32-bit Microsoft Office. Visit ni.com/info and enter the Info Code `64TSaccdb` to access the National Instruments support article,

Using *Microsoft Access Databases with 64-bit TestStand*, for more information about installing this provider.

- **Microsoft SQL Server**—Use the SQL Server Native Client 10.0 or later or the Microsoft OLE DB Provider for SQL Server provider.
- **Oracle**—Use the latest Oracle Provider for OLE DB and Oracle Client software. National Instruments recommends Oracle Client 12c Release 1, version 12.1.0.1.0 or later. You can download the Oracle Provider from the Oracle website at www.oracle.com.



Note National Instruments does not recommend using the Microsoft OLE DB Provider for Oracle because it does not support all the OLE DB features TestStand requires.



Note Oracle recommends using Oracle Provider 11.1.0.6.0 or later if you want to read 64-bit integer values stored in NUMBER columns.

- **MySQL**—Use the MySQL Open Database Connectivity (ODBC) Driver 5.1 or later.
- **Sybase SQL Anywhere**—Use the Adaptive Server Anywhere ODBC Driver 10.0 or later.

Activating TestStand Licenses

After you install TestStand, you must use the NI Activation Wizard to activate the software or initiate the evaluation period for the software.

National Instruments offers a variety of licenses for the different ways you can use TestStand in development and deployment applications. You can select from the following types of licenses:

- TestStand Development System License
- TestStand Custom Sequence Editor License
- TestStand Debug Deployment Environment License
- TestStand Base Deployment Engine License

In most cases, when you first install TestStand, you activate a TestStand Development System License. Use the other licenses to activate TestStand on computers to which you deploy TestStand custom sequence editors or user interfaces you develop.

Contact a local National Instruments representative for more information or for questions about specific licensing needs.



Note If you upgrade TestStand with a service pack release by installing TestStand or a deployment that includes the TestStand Engine, the TestStand Engine on the computer becomes unlicensed. You must reactivate the license on the computer. A TestStand Development System License or a Debug Deployment Environment License must be current with the Standard Service Program (SSP) to reactivate a service pack license. You can reactivate a Custom Sequence Editor License for a service pack upgrade, even if the SSP for the original license lapsed. A TestStand Base Deployment License does not require SSP to reactivate a service pack license.

Refer to the *Licensing Options for TestStand Systems* section of Chapter 1, *Introduction to TestStand*, of the *Getting Started with TestStand* manual for information about how to use the available licenses when you build a TestStand-based test solution. Use the following descriptions only as a reference for the licensing options. Visit ni.com/activate for more information about activating TestStand licenses. Visit ni.com/teststand to purchase a TestStand license.



Note This document does not replace the National Instruments Software License Agreement installed in the `<Program Files>\National Instruments\Shared\MDF\Legal\license\NIReleased` directory.

TestStand Evaluation Package

When you run TestStand in Evaluation Mode, the software expires after 7 days. You can generate a User Profile at ni.com to extend the evaluation period for an additional 45 days.

The Evaluation Mode software runs as a fully functional TestStand Development System during the evaluation period. You can activate a license at any point during or after the evaluation period.

TestStand Development System License (777777-35)

Activate the TestStand Development System License to develop and edit test sequences and to save sequence files within the TestStand Sequence Editor, within a TestStand custom sequence editor, or programmatically using the TestStand API. This license also grants the right to develop custom sequence editors and operator interfaces. You must have an ni.com User Profile to activate a TestStand Development System license.

TestStand Custom Sequence Editor License (777775-35)

Activate the TestStand Custom Sequence Editor License to develop and edit test sequences and sequence files within a custom sequence editor or programmatically using the TestStand API.

TestStand Debug Deployment Environment License (779851-35)

The TestStand Debug Deployment Environment License offers the most flexibility for deploying TestStand and LabVIEW-based, LabWindows/CVI-based, and Measurement Studio-based systems.

Activate this license to install the development versions of TestStand, LabVIEW, LabWindows/CVI, Measurement Studio, and any corresponding add-on toolkits on a single test station so you can debug deployed test applications on the test station. This license grants the right to make minor edits to fix bugs in deployed test applications but does not grant the right to perform any development tasks using TestStand, LabVIEW, LabWindows/CVI, or Measurement Studio on the test station.

You cannot activate and deactivate the TestStand Debug Deployment Environment License and reuse it on multiple computers. If you need to use a single debug license across multiple

computers, contact National Instruments for more information about the Concurrent TestStand Debug Deployment Environment License.

TestStand Base Deployment Engine License (777774-35)

The TestStand Base Deployment Engine License is the minimum license required for all deployed TestStand-based applications. Activate this license to deploy the TestStand Runtime, a TestStand Operator Interface, and sequence files to the single test station to which the license applies. This license does not grant the right to perform any development tasks using the TestStand Sequence Editor, a TestStand custom sequence editor, or the TestStand API.

Installation Instructions

Unless you specify another location during installation, the TestStand installer copies core files to <Program Files>\National Instruments\TestStand 2017.



Note If you uninstall one bitness of a TestStand version, National Instruments recommends that you use the TestStand Version Selector to reactivate the remaining bitness of that version and launch TestStand to properly register its components.



Note You cannot install TestStand to a network path or a mapped network path. You must install TestStand on a local computer.

National Instruments recommends exiting all programs before running the TestStand installer. Applications that run in the background, such as virus scanning utilities, might cause the installer to take longer than necessary to complete.

Complete the following steps to install TestStand.

1. Log on as an administrator or as a user with administrator privileges.
2. Insert the TestStand installation media and follow the instructions that appear on the screen.

National Instruments recommends installing the complete TestStand program. If you perform a custom installation and do not install all the TestStand features, you can run the installation program again later to install additional features.



Note If you do not install some TestStand features and then you later use the standard Windows Control Panel facility for adding and removing programs to install the features, the features might not correctly register, and TestStand will display a COM error the next time you launch TestStand. This error occurs even if you restart the computer after you use the Windows Control Panel to install the features. National Instruments recommends that you reactivate TestStand using the TestStand Version Selector after you install the features.

Installing Additional Software Components



Note TestStand includes the device driver software on a DVD. If you require device driver software on CDs, visit ni.com/info and enter the Info Code `drivercd`.

TestStand installs the following additional software components:

- .NET Framework 4.6.2
- LabVIEW 2016 Run-Time Engine (RTE) and LabVIEW 2014 SP1 RTE
- LabWindows™/CVI™ 2017 RTE
- LabWindows™/CVI™ SQL Toolkit 2.3 RTE
- National Instruments Session Manager
- NI Update Service
- NI License Manager
- TestStand Version Selector



Note TestStand can use newer versions of the LabVIEW RTE when you install LabVIEW on a development system. You can include newer versions of the LabVIEW RTE in deployments using the Drivers and Components dialog box of the TestStand Deployment Utility. Refer to the *TestStand Help* for more information about the Drivers and Components dialog box.

The National Instruments Device Driver DVD contains the following suggested components:

- National Instruments Measurement & Automation Explorer (MAX)
- Interchangeable Virtual Instrument (IVI) Compliance Package (ICP)

To use IVI, download and install IVI-compliant drivers from the Instrument Driver Network, located at ni.com/devzone/idnet.

Installing Multiple Versions of TestStand on the Same Computer

You can install TestStand 2017 on a computer that contains a previous TestStand version, but you cannot install TestStand 2017 over a previous TestStand version. You cannot install TestStand 2017 in the default installation directory for a previous version of TestStand. For example, TestStand 2017 does not install in `<Program Files>\National Instruments\TestStand 2016`. If you installed a previous version of TestStand in a non-default directory, you can uninstall the previous version of TestStand and install TestStand 2017 to that directory.

Related Information

[Migrating to the Current Version of TestStand](#) on page 10

Using the TestStand Version Selector

The TestStand Version Selector application indicates the active version of TestStand and can activate a different version of TestStand. Although you can install more than one version of TestStand on a computer, only one version of TestStand can be active and can run at a time.

The TestStand Version Selector application, `TSVerSelect.exe`, is located in the `<Program Files>\National Instruments\Shared\TestStand Version Selector` directory. You can launch the TestStand Version Selector in the following ways:

- **(Windows 8.1)** Click the **NI Launcher** tile on the Start screen and select **TestStand Shared»TestStand Version Selector**.
- **(Windows 10 or 7)** Select **Start»All Programs»National Instruments»TestStand Shared»TestStand Version Selector**.

The Current Active Version control shows the currently active version of TestStand. Select a version in the **Installed TestStand versions** control and click the **Make Active** button to activate a specific version of TestStand. The **Path where 32-bit version is installed** and **Path where 64-bit version is installed** controls show the locations of the selected version of TestStand. When activation is complete, the selector displays a message to indicate success or display any warnings. Click the **Launch 32-bit** or **Launch 64-bit** button to run the sequence editor application for the active version of TestStand.

If you activate TestStand 2017 and run a TestStand User Interface from a previous TestStand version, the user interface uses the TestStand 2017 Engine, step types, and components. If you activate a previous TestStand version and run a TestStand 2017 User Interface or the sequence editor, those applications do not function correctly.



Note The TestStand Version Selector does not typically require administrator privileges to activate a specific version of TestStand on Microsoft Windows 10/8.1/7. To require administrator privileges for using the TestStand Version Selector, add the `/reqadmin` command-line option to the selector shortcut.

Refer to the *TestStand Help* for more information about using the TestStand Version Selector.

Upgrading TestStand 2017 Beta to TestStand 2017

Before you install the final release version of TestStand 2017, you must first uninstall TestStand 2017 Beta and then manually delete the `<TestStand Public>\TestStand 2017\User Interfaces` directory.

Migrating to the Current Version of TestStand

If you are upgrading from TestStand 2010 or later, you can use the TestStand Migration Utility to migrate customizations and configuration settings from the earlier version of TestStand. You can also upgrade manually. Visit ni.com/info and enter the Info Code `tsmigrate` for more information about migrating to the current version of TestStand, including information about tasks you need to perform to upgrade manually from TestStand 4.2.1 or earlier.

You can also migrate from 32-bit TestStand 2017 to 64-bit TestStand 2017 or from 64-bit TestStand 2017 to 32-bit TestStand 2017. Refer to the Cross-Bitness Migration section of this document for more information about migrating to or from 64-bit TestStand 2017.

Migrating from TestStand 2010 or Later Using the TestStand Migration Utility

Complete the following steps to use the TestStand Migration Utility to copy settings, configuration, and public component files from the directories of TestStand 2010 or later to the current version of TestStand.

1. Launch the TestStand Migration Utility.

Platform	Description
Windows 8.1	Click the NI Launcher tile on the Start screen and select TestStand»Tools»Compatibility»TestStand Migration Utility .
Windows 10 or 7	Select Start»All Programs»National Instruments»TestStand»Tools»Compatibility»TestStand Migration Utility .

If you have more than one version of TestStand installed on the computer, the utility launches a dialog box in which you can specify the previous version of TestStand from which you want to migrate.



Note When you migrate from TestStand 2010 SP1 or TestStand 2010 to the current version of TestStand, the utility migrates the report and database options to the format for result processing configuration options for the current version of TestStand. Refer to the *TestStand Help* for more information about the using the TestStand Migration Utility. Visit ni.com/info and enter the Info Code `tsmigrate` for more information about using the utility to migrate result processing configuration options.

2. Select the previous version of TestStand.

The utility checks the computer for all the files you can migrate to determine whether the files have changed since installation. The utility launches a status indicator dialog box during this process. When the utility finishes checking the files for changes, the utility main window launches.

3. Use the **Files to Copy** control to select the files you want to copy.

By default, the utility selects files you added or modified in the previous version of TestStand.

4. Expand the directories in the Files to Copy control to view the files you can migrate and whether those files have changed since installation.

The Conflicts column includes any conflicts that might affect the migration of the files you specify.



Note The utility overwrites any file you create or modify in the current version of TestStand if the file also exists in the corresponding directory of the

previous version of TestStand and if you select the file in the Files to Copy control. Although the utility creates a backup copy of all overwritten files, verify that the utility will not overwrite any files you intend to keep in the version of TestStand to which you are migrating.

5. Click **Migrate Files** to begin the migration.

When the migration completes successfully, the utility generates a text file report that contains the results of the migration, including where the utility stored the file backups and which files were moved.



Note Consider the following behavior when using the TestStand Migration Utility:

- The utility only moves files and does not update any other information or settings, such as registry keys.
- If the `<TestStand Public>\Components` directory of the previous version of TestStand includes files installed by an installer other than the TestStand installer, you might need to use that specific installer to move the files for the files to function and uninstall properly from the `<TestStand Public>\Components` directory of TestStand 2017. National Instruments recommends that you use an installer that targets TestStand 2017 to install any such components instead of using the utility to copy the components. However, some installed components can function properly when copied to another directory and are safe to migrate with the utility.
- The Migration Utility does not copy files in the `<TestStand>\Examples`, `<TestStand>\Tutorial`, or `<TestStand>\AdapterSupport` directories. These directories do not appear in the Files to Migrate column of the utility.

Cross-Bitness Migration

National Instruments recommends upgrading to 64-bit TestStand 2017 from a prior 32-bit version in two steps. First, upgrade to 32-bit TestStand 2017 and validate that the system works as expected. Then, migrate from 32-bit TestStand 2017 to 64-bit TestStand 2017. Performing the upgrade in two steps can help isolate the root cause of issues you encounter.

Migrating to 64-bit TestStand 2017 might require additional manual steps after the Migration Utility completes. You must update bitness-specific files to support the new architecture. For example, if the Migration Utility copies a LabWindows/CVI DLL code module from 32-bit TestStand to 64-bit TestStand, 64-bit TestStand cannot load the 32-bit DLL. You must replace the 32-bit DLL with an equivalent 64-bit DLL. Additionally, code modules you place or install under the `<TestStand Public>` directory might require additional work depending on the type and implementation of the code module.

Refer to the *64-bit TestStand and Migrating from 32-bit TestStand* book in the *Fundamentals* book of the *TestStand Help* for more information about migrating between 32- and 64-bit TestStand.

Migrating TestStand 2010 SP1 or Earlier Result Processing Options to the Current Version of TestStand

The TestStand 2012 or later process models include significant changes to implement a plug-in architecture for model sequence files. TestStand 2012 or later uses the plug-in mechanism to decouple result processing from the process models. As part of this change, the result processing options move from the `TestStandModelReportOptions.ini` and `TestStandDatabaseOptions.ini` files into a single `ResultProcessing.cfg` file, located in the `<TestStand Application Data>\Cfg` directory, that stores configuration information for all result processing model plug-ins.

The result processing options files from TestStand 2010 SP1 or earlier are not compatible with TestStand 2012 or later process models. Refer to the *Process Model Result Processing Plug-in Architecture* section of the *TestStand 2012 New Features* topic in the *TestStand Help* for more information about the TestStand 2012 or later process models. Refer to the *Using the Legacy Model Switcher Tool* section of the *TestStand 2012 New Features* topic in the *TestStand Help* for more information about using the Legacy Model Switcher tool to use the equivalent legacy TestStand 2010 process models.

The following table describes the migration actions you can select in the TestStand Migration Utility to migrate the result processing configuration options from TestStand 2010 SP1 or earlier to the current version of TestStand.



Note The utility does not support migrating the configuration files from TestStand 2010 SP1 or earlier if you modified the `ReportOptions` or `DatabaseOptions` data types defined in the default process models.

Table 5. Migration Actions

Migration Action	Description
Apply to new models	Creates a new configuration in a configuration set named Migrated from TestStand <Version> . The utility automatically selects a unique name for the configuration if the utility has already used the default name in a previously completed migration. Refer to the migration report for the specific configuration names the utility uses.
Apply to legacy models	Copies the options files from TestStand 2010 SP1 or earlier to the current TestStand directory so you can use the previous configurations with the equivalent legacy TestStand 2010 process models in the current version of TestStand. When you migrate database options, the utility renames <code>TestStandDatabaseOptions.ini</code> to <code>TestStandDatabaseSchemas.ini</code> .
Apply to new and legacy models	Adds a new configuration in the Migrated from TestStand <Version> configuration set and copies the options files from a previous version of TestStand.

If you are upgrading from TestStand 4.2.1 or earlier, you can manually migrate result processing options for use with TestStand 2012 or later process models or the equivalent legacy TestStand 2010 process models. Visit ni.com/info and enter Info Code `tsmigrate` for more information about manually migrating result processing options to TestStand 2017.

Behavior Changes in TestStand 2017

TestStand 2017 introduces the following behavior changes since TestStand 2016 SP1:



Note Refer to the *TestStand 2017 Compatibility and Known Issues* topic in the *TestStand Help* for more information about behavior changes between earlier versions of TestStand.

- In TestStand 2017 and later, the HTBasic Adapter is hidden by default. You can enable the HTBasic Adapter in 32-bit TestStand by selecting **Configure»Adapters** and opening the **HTBasic Adapter Configuration** Dialog Box.

What's New in TestStand 2017

Refer to the *TestStand 2017 New Features* topic in the *TestStand Help* or visit ni.com/info and enter the Info Code `ts2017new` for more information about each of the following new features and other changes since TestStand 2016 SP1:

- Data Streams Step Types
- Crash Recovery for TestStand Applications

- TestStand Deployment Utility New Features
- Early Access Support for LabVIEW NXG
 - LabVIEW NXG Adapter
 - TestStand LabVIEW NXG Conversion Utility
 - TestStand API in LabVIEW NXG
 - Operator Interfaces in LabVIEW NXG

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