

RELEASE NOTES

NI Requirements Gateway

Version 2012

These release notes contain NI Requirements Gateway 2012 system requirements, installation instructions, information about new features, and other changes since Requirements Gateway 1.1.

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Getting Started

The best way to familiarize yourself with Requirements Gateway is to explore the *Guide to Requirements Gateway Documentation* topic in the *NI Requirements Gateway Help*, which contains links to all the Requirements Gateway documentation in electronic format. Select **Start»All Programs»National Instruments»Requirements Gateway»NI Requirements Gateway Help** or select **Help»NI Requirements Gateway Help** in the main window to access the *NI Requirements Gateway Help*.

Recommended System Requirements

National Instruments recommends the system requirements described in Table 1 to run Requirements Gateway 2012.

Table 1. Recommended and Minimum System Requirements

Requirement	Recommended	Minimum
Processor	1 GHz 32-bit or 64-bit	Pentium III, Celeron 866 MHz, or equivalent
Memory	512 MB	256 MB
Disk space for TestStand	70 MB	—
Video adapter	Super video graphics array (SVGA) resolution or higher	1024 × 768 resolution

Use the Microsoft Windows operating systems and service packs described in Table 2 with Requirements Gateway 2012:

Table 2. Recommended and Required Windows Operating System Service Packs

Operating System	Recommended Service Pack	Required Service Pack	Comments
Windows 7 (32- and 64-bit), including Starter Edition	Service Pack 1	—	Refer to the <i>Requirements Gateway and Windows 7/Vista</i> section of this document for more information about using Requirements Gateway on Windows 7/Vista.
Windows Vista (32- and 64-bit) Business, Enterprise, or Ultimate	Service Pack 2	Service Pack 1	
Windows XP	—	Service Pack 3	—
Windows Server 2008 R2 (64-bit)	—	Service Pack 2	Requirements Gateway supports only R2 editions of Windows Server.
Windows Server 2003 R2 (32-bit)	—	Service Pack 2	

Requirements Gateway does not support Guest user accounts on Windows. Requirements Gateway supports Administrator and Limited accounts on Windows 7/Vista and Administrator, Power Users, and Users accounts on Windows XP.



Note This version of Requirements Gateway supports, and was tested with, the latest operating system service packs that were available at the time this version of Requirements Gateway was released. National Instruments recommends using TestStand with the latest operating system service pack.

Use the National Instruments application development environments (ADEs) listed in Table 3 with Requirements Gateway 2012:

Table 3. Supported ADE Versions

ADE	Supported	Allowed but Not Supported
LabVIEW	2012, 2011 SP1, 2010 SP1, 2009 SP1	2011, 2010, 2009
LabVIEW Unit Test Framework Toolkit	2012, 2011 SP1, 2010, 2009 SP1	2011, 2009
LabWindows™/CVI™	2012, 2010 SP1, 2009 SP1	2010, 2009, 9.0, 8.5
NI TestStand™	2012, 2010 SP1, 4.2.1	—



Note National Instruments recommends using Requirements Gateway with the latest National Instruments ADE service pack.

Use the Microsoft software listed in Table 4 with Requirements Gateway 2012:

Table 4. Supported Microsoft Applications

Application	Versions Supported	Versions Allowed but Not Supported
Microsoft Internet Explorer	7.0 or later	—
Microsoft Word	2010, 2007	2003, 2002, 2000, 97
Microsoft Excel	2010, 2007	2003, 2002, 2000, 97
Microsoft Access	2010, 2007	2003, 2002, 2000, 97
Microsoft Visio	2010, 2007	2003, 2002

Use the following third-party products with Requirements Gateway 2012:

- Telelogic DOORS 9.2–7.1
You can use DOORS 8.0 only if you have installed Patch 5.
- IBM Rational RequisitePro 7.0.1 or 7.0

Requirements Gateway 2012 also supports PDFs you create using Adobe Acrobat. Refer to the [PDF Type Changes](#) section of this document and to the *NI Requirements Gateway Help* for more information about using PDFs with Requirements Gateway 2012.



Note Requirements Gateway 2012 was not tested for compatibility with other versions of these third-party applications but might be compatible with other versions.

Requirements Gateway exposes an ActiveX interface, but the interface is intended for internal use only and is not supported. National Instruments reserves the right to remove or modify the interface without notice.

Installation Instructions

Unless you specify another location during installation, the installation program copies files to the <Program Files>\National Instruments\Requirements Gateway 2012 directory.



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

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

Complete the following steps to install Requirements Gateway.

1. Log in as a user with administrator privileges.
2. Insert the Requirements Gateway 2012 installation media and follow the instructions that appear on the screen.

Refer to the *Known Issues* section of the `Readme.html` file, located on the Requirements Gateway media and in the <Requirements Gateway>\Doc directory, for possible solutions to any problems you might encounter while installing Requirements Gateway.

Activating Requirements Gateway Licenses

After you install Requirements Gateway, you must use the NI Activation Wizard to activate the software. You must have the serial number and the name of the software kit to activate Requirements Gateway. You can find both of these items on the Certificate of Ownership card included in the software kit. You must also have an `ni.com` User Profile to activate a Requirements Gateway license. Refer to the *Activating Your Software* topic in the *NI Requirements Gateway Help* for more information about how to activate Requirements Gateway.

If you do not activate a valid license, Requirements Gateway runs in Evaluation Mode and continues to prompt you to activate a license on each subsequent launch. In Evaluation Mode, you can use all the features of the product for 7 days. You can use an `ni.com` User Profile to extend the evaluation period for an additional 45 days. You can activate a license at any point during or after the evaluation period.



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.

Installing Additional Software Components

Requirements Gateway 2012 installs the following additional software components:

- LabWindows/CVI 2010 SP1 Run-Time Engine
- NI Update Service
- NI License Manager

Upgrading to Requirements Gateway 2012

When you upgrade to a new version of Requirements Gateway, you can install the new version on the same computer that already has an existing version of Requirements Gateway installed. Use the Requirements Gateway Install Utility to configure the active version of Requirements Gateway when you install or uninstall a particular version of Requirements Gateway.

Installing Multiple Versions of Requirements Gateway on the Same Computer

You can install Requirements Gateway on a computer that contains a previous Requirements Gateway version, but you cannot install Requirements Gateway 2012 in the same directory as a previous Requirements Gateway version. You must first uninstall a previous Requirements Gateway version to install Requirements Gateway 2012 in the same directory.

Only one version of Requirements Gateway can be active at a time. Use the Requirements Gateway Install Utility to specify the active version of Requirements Gateway. Select **Start» All Programs»National Instruments»Requirements Gateway»Install Utility** to launch the Requirements Gateway Install Utility, which is located at `C:\Program Files\National Instruments\Shared\NIRGUtility\NIRGUtility.exe`.

(Windows 7/Vista) Windows 7/Vista launches a User Account Control (UAC) elevation prompt for you to manually resolve when you launch the utility.



Note You must always use the Requirements Gateway Install Utility to configure the version of Requirements Gateway you want to use after you uninstall a different version of Requirements Gateway. If you do not run the utility after you uninstall Requirements Gateway 2012, National Instruments does not guarantee that the remaining version of Requirements Gateway still associates with the existing Requirements Gateway files.

Requirements Gateway and Windows 7/Vista

To comply with Windows 7/Vista restrictions on writing to the Program Files directory and to improve usability for Windows XP users who do not have permission to write to the Program Files directory, Requirements Gateway 1.1 or later installs some files in different locations from previous versions of Requirements Gateway. Refer to the *Directory Relocation* section of the *NI Requirements Gateway 1.1 Release Notes* for more information about directory location changes. Refer to the National Instruments website at ni.com/info and enter the Info Code NIRG11Notes to locate the *NI Requirements Gateway 1.1 Release Notes*.

Behavior Changes

Requirements Gateway includes the following behavior changes between version 1.1 and version 2012.



Note Refer to the *NI Requirements Gateway Help* for more information about behavior changes between earlier versions of Requirements Gateway.

- The MATRIXx type is obsolete in Requirements Gateway 2012. Requirements Gateway 2012 is the last version to allow analysis of project documents that use the MATRIXx type. Refer to the *NI Requirements Gateway Help* for more information about using MATRIXx files in a Requirements Gateway project.
- The Word and Excel types include the following changes:
 - Requirements Gateway no longer specifies a separate WordX type for Microsoft Word 2007 or later (.docx) files or a separate ExcelX type for Microsoft Excel 2007 or later (.xlsx) files. The Word type now supports both .docx and .doc files, and the Excel type now supports both .xlsx and .xls files.

In addition, the WordX and ExcelXML conversion tools you can select on the Analysis tab of the Types pane of the Configuration dialog box when you create a custom type are obsolete in Requirements Gateway 2012. If in a previous version of Requirements Gateway you created a custom type that used the WordX or ExcelXML conversion tool, National Instruments recommends that you update the type to use the WordWithStyles or ExcelWithColNumbers conversion tool instead.
 - You can now select the **With Rich Text** variable from the Variable column on the Details tab of the Project pane of the Configuration dialog box to add information to the intermediate file about the color, bold, italic, underlined, and strikethrough properties of the captured text. You can include this information in a report.

- For the DOORS Basic and DOORS Advanced types, you can now select the following variables from the Variable column on the Details tab of the Project pane of the Configuration dialog box:
 - **Profile**—The profile you want to use for connecting to the DOORS database. Enter the profile name in the Value column. You can also select a profile for the database from the **Profile** ring control in the Select DOORS module dialog box.
 - **With External links**—Captures external links specified in a DOORS module. You must create a custom DOORS type and define a link or requirement element that can analyze the external links. Refer to Chapter 5, *Customizing Types*, of the *Getting Started with NI Requirements Gateway* manual and to the *NI Requirements Gateway Help* for more information about creating custom types.

What's New in Requirements Gateway 2012

This section describes the new features in Requirements Gateway 2012 and other changes since Requirements Gateway 1.1.

User Interface Enhancements

Requirements Gateway 2012 includes enhancements to the main window and Configuration dialog box.

Main Window Enhancements

Requirements Gateway 2012 includes the following enhancements in the main window:

- The Management view includes the following changes:
 - A new Overall Quality pane displays a status bar that specifies the percentage of covered requirements.
 - The new Project Overview pane displays a graphical overview of project documents.
 - The Tree View, Project Summary, and Available Analysis Reports panes no longer exist.
 - The Information pane replaces the Selection Info pane.
 - The Rule Check pane replaces the Rules Check pane.
 - Use the new Link Details view to create additional references between requirements and covering documents. Refer to the [Link Details View](#) section of this document for more information about the Link Details view.
- The Graphical view context menu now includes the following options:
 - **Evaluate**—Launches the Evaluate dialog box, in which you can evaluate expressions using an OTScript evaluator. Refer to the *NI Requirements Gateway Help* for more information about OTScript.
 - **Reload**—Refreshes the information Requirements Gateway displays for a project.

- The context menus for the Coverage Analysis, Impact Analysis, and Graphical views include the following changes:
 - The **Delete** option replaces the **Remove** option.
 - The **Delete selected attributes** option replaces the **Remove selected attributes** option.
- The Edit menu includes the following changes:



Note The full list of options varies depending on the view you select.

- Use the new **Add Text** option when you select the Coverage Analysis or Impact Analysis view to add text to a selected element. The added text appears in the Text section of the Coverage Analysis, Impact Analysis, Graphical, and Link Details views, and on the Text and Added text tabs of the Requirement Details view.
The **Add Text** option also appears in the context menu of the Coverage Analysis and Impact Analysis views.
- The **Delete** option replaces the **Remove** option.

Refer to the *NI Requirements Gateway Help* for more information about all the options available in the Edit menu.

- The View menu no longer includes options to display the Management, Coverage Analysis, Impact Analysis, Graphical, and Requirement Details views. Click the tabs in the main window to display the views.
- The Reports menu now includes a **Requirement Details»Requirement Attributes** option, which you can select to generate a report that lists the requirements, attributes, and attribute values for one or more selected documents in the Requirements Gateway project.

Requirements Gateway defines the structure for the Requirement Attributes report in the `Requirement Details.xml` file located in the `<Requirements Gateway>\config\doc_models` directory. You can use the Reports pane of the Configuration dialog box to customize the Requirement Attributes report. Refer to the *Creating a Custom Report Model* section of Chapter 4, *Generating Reports*, of the *Getting Started with NI Requirements Gateway* manual and to the *NI Requirements Gateway Help* for more information about customizing reports.

- The Help menu no longer includes the **Documentation»Customization Guide** and **Documentation»Coupling Documents** options. This content now resides in the *NI Requirements Gateway Help*. Refer to the [Documentation Enhancements](#) section of this document for more information about changes to documentation organization in Requirements Gateway 2012.
- The main window toolbar includes the following changes:
 - The **Options** button moved from the left of the Filter Selection ring control to the right of the **Edit Snapshots** button.
 - The icons of the **Added Information** and **Export Document to DOORS** buttons have changed.

Link Details View

Click the new **Link Details** tab in the main window to create additional references between requirements and covering documents without modifying project document source files.

To use the Link Details view, you must first use the Types pane of the Configuration dialog box to create a type for added elements and define at least one reference element for the type for added elements. You must then use the Project pane of the Configuration dialog box to apply the type for added elements to a modification file for the covering document.

Then, complete the following steps to create a reference in the Link Details view:

1. On the From pane of the Link Details view, use the **Document** ring control to select the covering document for which you created a type for added elements and for which you specified a modification file that uses the type for added elements.
2. Expand the document in the **Document content** control and select the section of the document you want to use to cover an upstream requirement.
3. From the **Link type** ring control, select the reference element of the type for added elements you created.
4. On the To pane, expand the upstream document in the **Requirements** control and select the requirement you want to cover.
5. Place a checkmark next to the requirement you want to cover. Requirements Gateway creates a reference between the requirement you select on the To pane and the covering document section you select on the From pane.

Requirements Gateway includes the new reference when calculating coverage percentage in the Requirements Gateway project.

If the type for added elements applied to the covering document defines a reference attribute element and values for the reference attribute, you can complete the following steps to use the Link Details view to add a reference attribute to a reference you created.

1. In the Link Details view, select the same covering document section on the From pane, the same reference type from the **Link type** ring control on the From pane, and the same requirement on the To pane that you used to create the reference.
2. Select the requirement in the **Requirements** control on the To pane. The Reference Attributes control on the To pane becomes available.
3. Click the **Value** column of the Reference Attributes control and select a value you defined for the reference attribute element.

The Link Details view provides the following additional functionality:

- Click the **History** tab on the From pane to display the history of references you created or deleted.
- Use the **Filter** control on the To pane to enter a case-sensitive string or regular expression you want to use to filter the requirements that appear in the Requirements control. For example, enter the string `REQ1` to show only requirements that contain the text `REQ1`, or enter the regular expression `^PS_.*2$` to show only requirements that begin with the string `PS` and end with the character `2`.

- If a requirement in the Requirements control displays a green square instead of a checkmark, the covering document covers the requirement using a reference of a type other than the reference you selected from the **Link type** ring control. Hover the cursor over the green square to display a tooltip that specifies the type of reference that covers the requirement.
- When you enable the **Comment cover link creation and deletion in Link Details view** option on the General tab of the Options pane of the Configuration dialog box, Requirements Gateway launches the Link Creation dialog box when you place a checkmark next to the requirement you want to cover or remove an existing checkmark. Enter a comment associated with the creation or deletion of the reference and click **OK**. The comment appears on the History tab of the From pane and on the Information tab of the To pane for the selected requirement.

Refer to the *NI Requirements Gateway Help* for more information about using and creating types for added elements, modification files, and regular expressions, and for information about the options available in the Edit menu or context menu for the Link Details view.

Configuration Dialog Box Enhancements

Requirements Gateway 2012 includes the following enhancements in the Configuration dialog box:

- The Project pane contains the following enhancements:
 - The new **Covers** tab contains the following options for a covering link you select on the Project pane:
 - **Source->Target**—Specifies the kind of covering link and the linked project documents.
 - **Kind**—Specifies one of the following types for the link:
 - **Cover**—The link contributes to the calculated coverage percentage of the project.
 - **Dependency**—The link relates the documents but does not contribute to the calculated coverage percentage. For example, you might want to include a project document that relates to another project document but that does not cover any requirements.
 - **Category**—Specifies one of the following analysis categories for the link:
 - Satisfy
 - Validate
 - Implement
 - The **Modification Files** tab replaces the **Modification Documents** tab.
- The Filters pane contains the following enhancements:
 - Use the new Parameters section to review, add, or remove parameters defined in a project. When you apply a filter that contains a parameter to a project, you can enter the parameter value in the Filter parameters dialog box. Requirements Gateway displays only the requirements that correspond to the value.
 - Enable the new **Hide children of filtered elements** option on the Conditions tab when you do not want to display the child elements of filtered elements.

- The Options pane contains the following enhancements:
 - Enable the **Comment cover link creation and deletion in Link Details view** option to add a comment to a reference you create or delete using the Link Details tab. Refer to the [Link Details View](#) section of this document for more information about the Link Details tab.
 - Use the options on the new Connections tab to define user profiles for connecting to a DOORS database.
- The menu bar contains a new Tool menu. Select **Tool»Evaluate** to evaluate expressions using an OTScript evaluator.

LabVIEW Type Improvements

Requirements Gateway 2012 supports capturing traceability information directly from LabVIEW classes and opening a VI in the context of a LabVIEW project. Requirements Gateway 2012 also launches an analysis progress dialog box when analyzing LabVIEW files and improves the general performance of the LabVIEW type.

LabVIEW Class Support

When you specified a LabVIEW document in Requirements Gateway 1.1, you could capture traceability information from the following locations in a LabVIEW class (`.lvclass`) file only if the class file was included in a LabVIEW project (`.lvproj`) file. You could not specify to use only a class file for a LabVIEW document.

- Documentation field of the LabVIEW class file
- Documentation field or caption for a custom control (`.ctl`) file associated with the LabVIEW class file
- Documentation field of a method VI that belongs to the LabVIEW class

When you specify a LabVIEW document in Requirements Gateway 2012, you can now specify to use only a class file for a LabVIEW document. Click the **File Browse** button in the File or Directory column on the Project pane of the Configuration dialog box to launch the Select Files to Include in Document dialog box. Click the **Add LabVIEW File** button and browse to the `.lvclass` file you want to use, or click the **Add Directory** button to select a directory that contains multiple LabVIEW files, including `.lvclass` files.

When Requirements Gateway analyzes the project and displays the results in the main window, Requirements Gateway displays a LabVIEW class as a section element.

When you enable the **Include SubVIs in Document** option in the Select Files to Include in Document dialog box and the LabVIEW class includes a method VI that contains a subVI, and you return to the main window and reload the project, Requirements Gateway displays a subVI directory under the LabVIEW class. If the subVI contains a class constant and the requirement or reference statement is located in the Description field of the constant, Requirements Gateway analyzes only the instance of the class constant on the block diagram—and not the full `.lvclass` or `.ctl` file to which the constant belongs—and displays the constant as a child of the block diagram of the VI in the main window.

Refer to the *LabVIEW Help* for more information about LabVIEW classes, class constants, method VIs, and LabVIEW projects. Refer to the *NI Requirements Gateway Help* for more information about section elements.

Opening LabVIEW Files in the Context of a LabVIEW Project

In Requirements Gateway 1.1, when you double-clicked a VI or control in a LabVIEW project, Requirements Gateway opened only the LabVIEW file.

In Requirements Gateway 2012, when you double-click a VI or control in a LabVIEW project, Requirements Gateway opens the VI or control and the Project Explorer window of the LabVIEW project so that you can review the project, including any settings in the project that affect the VI or control. The project name and the target name appear in the status bar of the front panel of the VI or control in LabVIEW.

When you modify and save a VI or control in a LabVIEW project, Requirements Gateway 2012 prompts you to reanalyze the project.

Refer to the *LabVIEW Help* for more information about the Project Explorer window.

Displaying LabVIEW File Analysis Progress

Requirements Gateway 2012 launches a progress dialog box when analyzing LabVIEW files. The progress dialog box specifies the Requirements Gateway project document and the LabVIEW file (.vi, .lvproj, .lvclass, .lvlib, .llb, .ctl, .vit, or .ctt) Requirements Gateway is currently analyzing. You cannot use LabVIEW or Requirements Gateway until analysis completes and the progress dialog box closes.

LabVIEW Type Performance Improvements

Requirements Gateway 2012 improves the performance of the VIs that Requirements Gateway uses to analyze LabVIEW front panels and block diagrams for traceability information.

- In Requirements Gateway 1.1, the LabVIEW type reanalyzes every file when reloading a document. In Requirements Gateway 2012, the LabVIEW type caches the results of an analysis, and Requirements Gateway analyzes changed files only the next time you reload the project.
- Requirements Gateway 2012 improves the management of loading and unloading VIs it analyzes.
- Requirements Gateway 2012 installs precompiled analysis VIs for LabVIEW 2009 SP1 (32-bit), and installs source-only analysis VIs for LabVIEW 2010 or later to precompile when first used.

LabVIEW UTF Types

In Requirements Gateway 1.1, you could integrate the LabVIEW Unit Test Framework (UTF) Toolkit with Requirements Gateway only if the UTF type files were included in the same directory in which you saved a Requirements Gateway project. You could find the type files and examples that demonstrate how to use the LabVIEW Unit Test Framework Toolkit with Requirements Gateway in the <LabVIEW>\examples\Unit Test Framework\NI Requirements Gateway directory when you installed the LabVIEW Unit Test Framework Toolkit 2011.

In Requirements Gateway 2012, you can directly integrate the LabVIEW Unit Test Framework Toolkit 2012 with Requirements Gateway, which supports the following UTF types:

- UTF Test Definition (.lvtest) type
- UTF Test Vector Definition (.lvvect) type

To use the new UTF types installed with Requirements Gateway 2012 in a project that uses the old UTF types shipped in the LabVIEW Unit Test Framework Toolkit 2011, remove the old type files from the directory in which you previously saved the project.

You typically use a UTF Test Definition and optionally a UTF Test Vector Definition document in conjunction with a LabVIEW document to cover requirements in an upstream document. You can also optionally use a document of the NI ATML TR type to specify a UTF report file that also covers requirements in an upstream document. Refer to the *NI ATML TR Type* section of this document for more information about using the NI ATML TR type.

When you add a UTF test or test vector document to a project, click the **File Browse** button in the File or Directory column on the Project pane of the Configuration dialog box to launch the Browse for Folder dialog box, in which you can select a directory that contains the UTF files you want to use to cover requirements.

The UTF Test Definition and UTF Test Vector Definition types define the following document settings you configure on the Details tab of the Project pane of the Configuration dialog box:

- **File or Directory**—A directory that contains UTF test or test vector files.

The UTF Test Definition type defines the following default traceability elements:

- **Section**—The UTF test files within directories and the VIs under test.
- **Reference**—The text [Covers: reqid1] [Covers: reqid2] in a UTF test file, which you can find when you open a UTF test file in a text editor. Use the Requirement ID column on the Configuration page of the Test Properties dialog box in the LabVIEW Unit Test Framework Toolkit to list the requirement IDs, separated by semicolons, that you want the test to cover.
- **Text**—The descriptive wording associated with UTF test files.

The UTF Test Vector Definition type defines the following default traceability elements:

- **Section**—The UTF test vector files within directories.
- **Reference**—The text [Covers: reqid1] [Covers: reqid2] in a UTF test vector file, which you can find when you open a UTF test vector file in a text editor. Use the Requirement ID column in the Test Vector File Properties dialog box in the LabVIEW Unit Test Framework Toolkit to list the requirement IDs, separated by semicolons, that you want the test vector to cover.

Refer to the *NI Requirements Gateway Help* for more information about using the UTF types. You can also refer to the <Requirements Gateway Public>\Examples\Unit Test Framework directory for examples of using the UTF types. Refer to the *LabVIEW Help* for more information about tests, test vectors, and test results in the LabVIEW Unit Test Framework Toolkit.

NI ATML TR Type

In Requirements Gateway 1.1, you could specify the following project configuration in which a downstream document of the TestStand XML Reports type covered an upstream document of the TestStand type:

- The TestStand document included a sequence file that contained a step that could generate a result as a requirement, using the unique ID of the step as the requirement ID.
- The TestStand XML Reports document specified a TestStand XML report file that contained a step result that covered the requirement step in the sequence file. The TestStand XML Reports type supported only XML results, not Automatic Test Markup Language (ATML), HTML, or ASCII reports.

In Requirements Gateway 2012, you can use a downstream document of the NI ATML TR type to specify any XML file that conforms to the non-finalized version 5.0 or the approved version 2.02 of the ATML Test Results and Session Information schema, such as a TestStand ATML Test Results (TR) report file or LabVIEW UTF report file. The ATML file must specify a step result that references the ID of a step defined as a requirement in an upstream TestStand document or specify a test result that references the ID of a requirement in an upstream specification document.



Note The ATML report file TestStand generates conforms to the non-finalized version 5.0 or the approved version 2.02 of the ATML Test Results and Session Information schema. You can use only TestStand 2012 or later to generate a report that conforms to the non-finalized version 5.0 of the schema. Because version 5.0 of the ATML Test Results and Session Information schema is not yet finalized, generated reports comply with the release candidate version of the schema. Refer to the National Instruments website at ni.com/info and enter the Info Code `tsatmltr5` for up-to-date information about TestStand support for ATML Test Results 5.0 reports.

The ATML report file that a LabVIEW UTF test generates conforms to only the approved version 2.02 of the schema.



Note National Instruments does not guarantee that the NI ATML TR type is compatible with ATML files generated by other external applications.

When you add an NI ATML TR document to a project, click the **File Browse** button in the File or Directory column on the Project pane of the Configuration dialog box to launch the Select Files to Include in Document dialog box, in which you can select the ATML report file or directory of ATML report files you want to use.

The NI ATML TR type defines the following document settings you configure on the Details tab of the Project pane of the Configuration dialog box:

- **File or Directory**—An ATML report file (`.xml`) or a directory that contains ATML report files. For a directory, you can specify whether to include subdirectories.
- **Variable**—Defines the following document variable:
 - **Category**—Assigns an analysis category to the NI ATML TR document. Select a category from the ring control in the Value column. Use the Overall Quality pane of

the Management view to review the use of analysis categories in a project. Refer to the [Categorizing Project Documents and Covering Links](#) section of this document for more information about categories.

The NI ATML TR type defines the following default traceability elements:

- **Section**—The results in an ATML report file, the ATML files within a directory, and the critical failure stack for failing UUTs or results sets.
- **Reference**—A result with a unique ID that refers to a step in a TestStand sequence file or to a requirement in an upstream specification document.



Note To use a TestStand ATML report file to cover a step in a TestStand 2012 sequence file, you must enable the **Include TestStand Extension Elements** option on the Contents tab of the Report Options dialog box in TestStand 2012 before you generate the ATML report and use it in a Requirements Gateway project.

- **Attribute**—Indicates UUT, result set, UTF coverage, and test or step result information.
- **Reference Attribute**—Indicates the status of a test or step result in a TestStand ATML report. The NI ATML TR type does not define a reference attribute element for a LabVIEW UTF report file.

In the main window, Requirements Gateway displays the selected ATML report file or directory as a child of the NI ATML TR document, and each ATML report file displays the critical failure stack for failing UUTs or result sets.

Refer to the *NI TestStand Help* or to the ATML website at grouper.ieee.org/groups/scc20/tii for more information about ATML and the Test Results and Session Information schema. Refer to the [LabVIEW UTF Types](#) section of this document and to the *NI Requirements Gateway Help* for more information about the UTF types.

Code C++ and Code C# Types

Requirements Gateway 2012 includes Code C++ and Code C# types for capturing traceability information defined in functions, namespaces, and classes in `.cpp` or `.cs` source files.

When you add a Code C++ or Code C# document to a project, click the **File Browse** button in the File or Directory column on the Project pane of the Configuration dialog box to launch the Browse for Folder dialog box, in which you can select a directory that contains the source files you want to use to cover requirements.

The Code C++ and Code C# types define the following document settings you configure on the Details tab of the Project pane of the Configuration dialog box:

- **File or Directory**—A directory that contains source files (`.cpp`, `.cs`, or `.h`).
- **Variables**—Defines the following document variables:
 - **Category**—Assigns an analysis category to the C++ or C# document. Select a category from the ring control in the Value column. Use the Overall Quality pane of the Management view to review the use of analysis categories in a project. Refer to the

Categorizing Project Documents and Covering Links section of this document for more information about categories.

- **Prompt when files change**—Specifies whether Requirements Gateway prompts you to reload the project when you modify the source file. Enable the option in the Value column to use this variable.
- **Includes function body**—Captures the full body text of a function from a C++ or C# source file and includes the body text in the intermediate file so you can track changes to traceability information stored within the function text. Enable the option in the Value column to use this variable.

The Code C++ and Code C# types define the following default traceability elements:

- **Section**—A directory, source file, function, namespace, or class.
- **Reference**—A comment in a C++ or C# file that uses the syntax `// Implements reqid` or `/* Implements reqid */`. The Code C++ or Code C# type analyzes the comments associated with a file and the functions in the file and associates traceability information with the file or with a function in the file using the following criteria:
 - If the comment or a block of comments immediately precedes a function, with no intervening blank lines, the comment is associated with the function.
 - If the comment or a block of comments immediately precedes a function but one or more blank lines exist between the comment and the function, the comment is associated with the file.
 - If the comment or a block of comments exists within the function, the comment is associated with the function.



Note By default, the Code C++ and Code C# types do not capture requirements. You can create a custom type if you want to capture requirements defined in functions, namespaces, and classes in `.cpp` or `.cs` source files. Refer to Chapter 5, *Customizing Types*, of the *Getting Started with NI Requirements Gateway* manual and to the *NI Requirements Gateway Help* for more information about creating custom types.

In the main window, Requirements Gateway displays the selected directory as a child of the Code C++ or Code C# document, and the directory and its subdirectories contain the included source files. Each source file also displays all the functions, namespaces, and classes included in the file.

To add reference information directly to a C++ or C# file, insert the correct syntax for a Code C++ or Code C# reference into the file. In Requirements Gateway, right-click an upstream requirement covered by a downstream Code C++ or Code C# document and select **Copy For» Code C++ Comment** or **Copy For»Code C# Comment** from the context menu to copy the correct syntax for a reference to the clipboard. You can then navigate to the source file and paste the reference.

DOORS Full Hierarchy Type

In addition to the DOORS Basic and DOORS Advanced types, Requirements Gateway 2012 includes a new DOORS Full Hierarchy type, which you can use to browse a specified DOORS module for DOORS traceability elements.

The DOORS Full Hierarchy type captures the full hierarchy of objects in the module as a hierarchy of requirements in the XML intermediate file. Use the DOORS Full Hierarchy type when you want to capture every object in a module instead of only the objects identified as requirements.

The DOORS Full Hierarchy type defines the same document variables on the Details tab of the Project pane of the Configuration dialog box as the DOORS Basic and DOORS Advanced types.

Refer to the *NI Requirements Gateway Help* for more information about the DOORS Full Hierarchy type.

PDF Type Changes

The Adobe PDF type in Requirements Gateway 1.1 or earlier is now a more generic PDF type in Requirements Gateway 2012. Use the PDF type to browse a PDF file for traceability information. The PDF type specifies the same syntax for traceability information as the former Adobe PDF type.



Note To use the new PDF type in Requirements Gateway 2012, you must install Java Runtime Environment version 6, which you can download from the Java website at www.java.com.

The new PDF type defines a new conversion tool, PdfCvTxt, for converting a PDF source file to a text intermediate file. The Adobe PDF type in Requirements Gateway 1.1 or earlier used a Pdf conversion tool, which is obsolete in Requirements Gateway 2012.

Because of the change in conversion tools, you must update any projects you created using Requirements Gateway 1.1 or earlier to use the new PDF type, as follows:

- When you first open in Requirements Gateway 2012 a project that used the default Adobe PDF type in Requirements Gateway 1.1 or earlier, Requirements Gateway prompts you to reanalyze the project. Click **Yes** to convert documents of the Adobe PDF type to documents of the new PDF type.
- When you first open in Requirements Gateway 2012 a project that used a customized version of the Adobe PDF type in Requirements Gateway 1.1 or earlier, Requirements Gateway prompts you to reanalyze the project. Click **Yes** to update the custom type to use the PdfCvTxt conversion tool. If you click **No**, Requirements Gateway does not update the custom type and you cannot use the custom type in Requirements Gateway 2012 unless you manually update the conversion tool the custom type uses to use the PdfCvTxt conversion tool.

The Adobe PDF type in Requirements Gateway 1.1 or earlier defined a **Notes format** document variable on the Details tab of the Project pane of the Configuration dialog box. The new PDF type does not support the Notes format document variable and instead specifies an **Options** variable. Select the **Options** variable and click the button in the Value column to launch the PDF Conversion Options dialog box, in which you can specify options for analyzing the specified PDF file.

If you used the **Notes format** variable for a PDF document in Requirements Gateway 1.1 or earlier to capture traceability information from comments or pop-up notes in a PDF file and you want to achieve the same functionality in Requirements Gateway 2012, enable the **With annotations** option on the Options tab of the PDF Conversion Options dialog box.

You can also enable the **With cells format** option on the Options tab of the PDF Conversion Options dialog box to capture traceability information from table cells in a PDF file.

Refer to the *NI Requirements Gateway Help* for more information about all the options in the PDF Conversion Options dialog box and for information about capturing traceability information from comments or pop-up notes or from table cells in a PDF file.

Categorizing Project Documents and Covering Links

You can assign an analysis category to a project document or a covering link between documents. For example, you can specify that a project document is a specification document, that a covering document describes the solution for the specification, and that the covering link between the documents specifies the implementation relationship between the documents. Use the Overall Quality pane of the Management view to review the use of analysis categories in a project.

Assigning a Category to a Document

Complete the following steps to assign a category to a project document.

1. Select a document on the Project pane of the Configuration dialog box.
2. On the Details tab, select the **Category** variable from the Variable ring control.
3. Select one of the following categories from the **Value** ring control:
 - Requirements
 - Specification
 - Design
 - Tests
 - Coding
4. Click **OK** to apply the changes to the project and close the Configuration dialog box.

You can also assign a category to a folder you add to the project on the Project pane. The category you assign to a folder also applies to any document that the folder contains and for which you have not already assigned a category. If the folder contains a document for which you have already assigned a category, the document retains its category even if you assign a different category to the folder.

Use the Overall Quality pane of the Management view to review the coverage of requirements for each document category in the project. When you select a categorized document in the Management view, the Information pane lists the type and category of the document.

Assigning a Category to a Link

Complete the following steps to assign a category to a link.

1. Select a covering link between two documents on the Project pane of the Configuration dialog box.
2. Click the **Covers** tab.
3. Select one of the following categories from the **Category** ring control:
 - Satisfy
 - Validate
 - Implements
4. Click **OK** to apply the changes to the project and close the Configuration dialog box.

Unassigning a Category

To unassign a category from a document or folder, select the blank option from the **Value** ring control on the Details tab of the Project pane. To unassign a category from a link, select the blank option from the **Category** ring control on the Covers tab.

Documentation Enhancements

Requirements Gateway documentation includes the following enhancements:

- The following documents previously available as PDFs no longer exist. The content now resides in the *NI Requirements Gateway Help*.
 - *NI Requirements Gateway Customization Guide*
 - *Coupling Microsoft Access with NI Requirements Gateway*
 - *Coupling Adobe Acrobat with NI Requirements Gateway*
 - *Coupling Checksum with NI Requirements Gateway*
 - *Coupling Code Files with NI Requirements Gateway*
 - *Coupling Telelogic DOORS with NI Requirements Gateway*
 - *Coupling Microsoft Excel with NI Requirements Gateway*
 - *Coupling LabVIEW with NI Requirements Gateway*
 - *Coupling LabWindows/CVI with NI Requirements Gateway*
 - *Coupling NI MATRIXx with NI Requirements Gateway*
 - *Coupling IBM Rational RequisitePro with NI Requirements Gateway*
 - *Coupling NI TestStand with NI Requirements Gateway*
 - *Coupling Microsoft Visio with NI Requirements Gateway*
 - *Coupling Microsoft Word with NI Requirements Gateway*

- The following chapters of the *Getting Started with NI Requirements Gateway* manual no longer exist. The content now resides in the *NI Requirements Gateway Help*:
 - Chapter 6, *Using NI Requirements Gateway with NI TestStand*
 - Chapter 7, *Using NI Requirements Gateway with MATRIXx*
 - Chapter 8, *Using NI Requirements Gateway with LabVIEW*
 - Chapter 9, *Using NI Requirements Gateway with LabWindows/CVI*
 - Chapter 10, *Using NI Requirements Gateway with Telelogic DOORS*
 - Appendix A, *Third-Party Types Overview*
- The table of contents in the *NI Requirements Gateway Help* has been reorganized. National Instruments welcomes feedback on the changes to the *NI Requirements Gateway Help*. You can use the new feedback link located at the bottom of each help topic to submit feedback about that specific help topic or other help-related issues.

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