Windows Installer Tip: New Project Validation Options in InstallShield 2008

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Introduction

An important step in the release process for an installation project is to validate the completed MSI database. Microsoft provides a collection of ICE (internal consistency evaluator) tests for detecting many common errors and inconsistencies that can occur when authoring a Windows Installer installation. The Windows Installer help library describes all of the predefined tests. Some of the common errors and warnings that arise are:
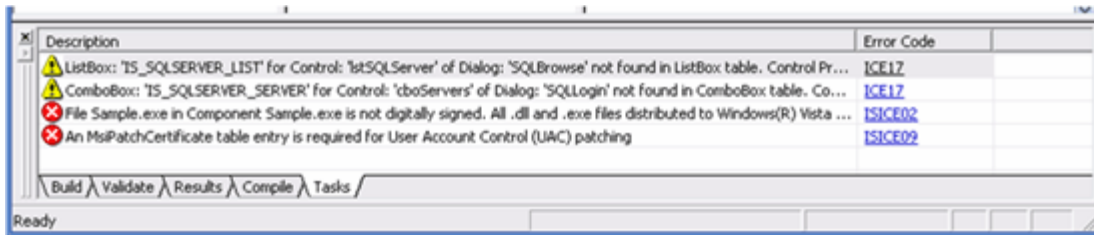
- **ICE09**: Validates that components being installed to [SystemFolder] are marked as permanent.
- **ICE33**: Warns if any of the project's registry information would be better suited for a more specific table (usually related to COM or file-type information).
- **ICE86**: Warns if the AdminUser property is used in a condition (instead of the usually preferred Privileged property).

To perform validation on an MSI database, pull down the Build menu, select Validate, and then select the desired validation suite. The Windows 2000 and Windows XP logo validation suites test only for conditions required by those specific logo programs. The Full MSI Validation Suite and the new Windows Vista Validation Suite (plus InstallShield ICEs) test for additional potential errors.
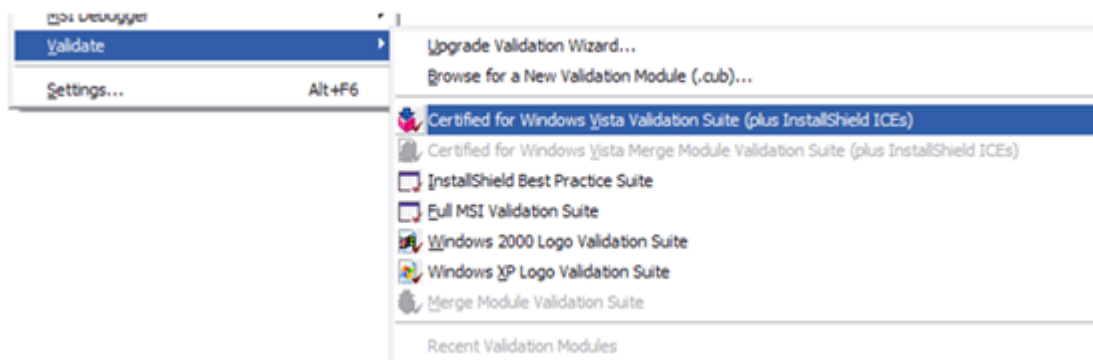

Validation is performed on the completed MSI database and not the .ism project file, and thus you cannot perform ICE validation if your project encounters any build errors.

Validation progress information is displayed in the output window. When validation is complete, any errors or warnings that occur are displayed in the Tasks tab of the output window, as illustrated in the following figure. Clicking the hyperlinked rule name in the Error Code column displays information about that rule from the Flexera Software Knowledge Base.

Description	Error Code
⚠ ListBox: 'IS_SQLSERVER_LIST' for Control: 'lstSQLServer' of Dialog: 'SQLBrowse' not found in ListBox table. Control Pr...	ICE17
⚠ ComboBox: 'IS_SQLSERVER_SERVER' for Control: 'cboServers' of Dialog: 'SQLLogin' not found in ComboBox table. Co...	ICE17
❌ File Sample.exe in Component Sample.exe is not digitally signed. All .dll and .exe files distributed to Windows(R) Vista ...	ISICE02
❌ An MsiPatchCertificate table entry is required for User Account Control (UAC) patching	ISICE09

Build ∖ Validate ∖ Results ∖ Compile ∖ Tasks ∕

Ready

Validating a Project after Every Build

By default, you initiate ICE validation manually, as described above. To specify that ICE validation should be performed automatically after each build, pull down the Tools menu, select Options, and then select the Validation tab. Next, select the "Perform validation using" check box and select the desired validation suite.
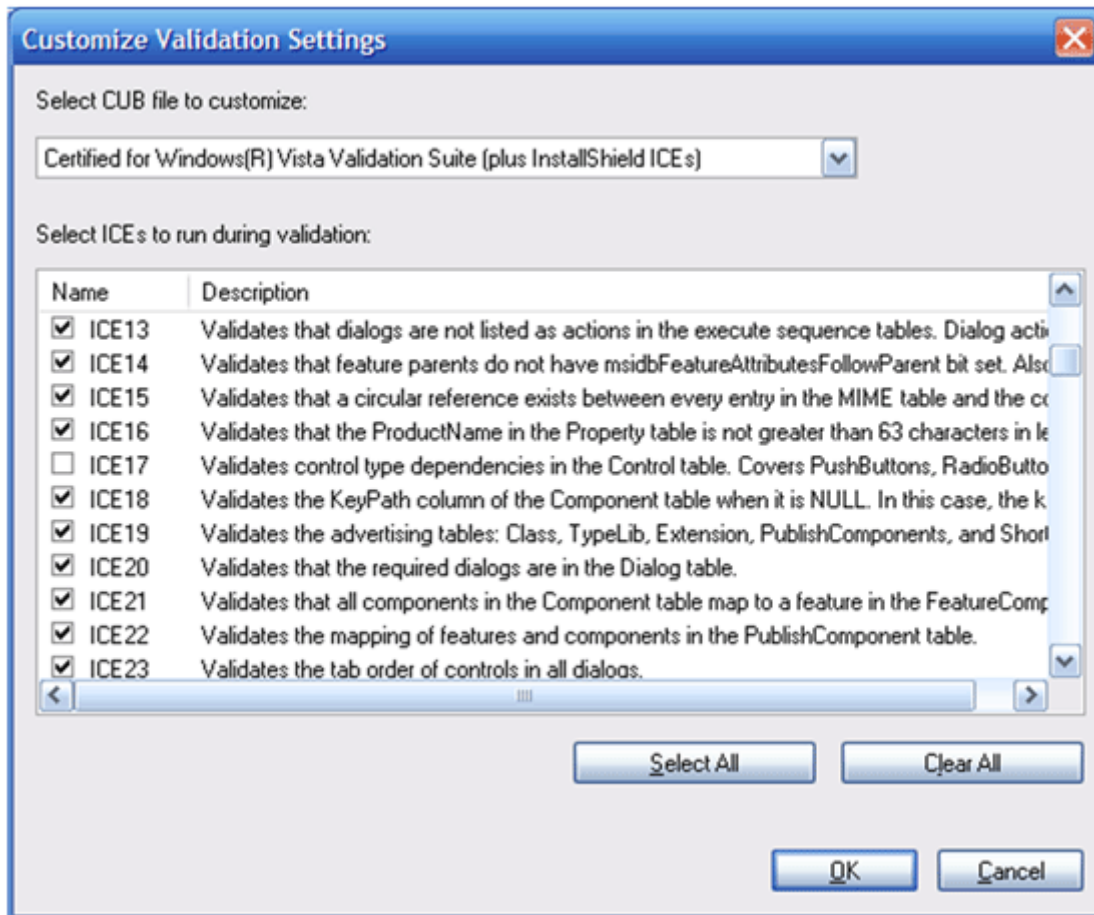

Naturally, performing validation after each build adds time to the build process, but can assist in catching potential errors earlier in the project development cycle.

Customizing Validation

InstallShield 2008 provides the ability to specify which validation rules to run when performing ICE validation. To select which tests to perform, click the Customize button on

the Validation tab of the Options panel, pictured above.
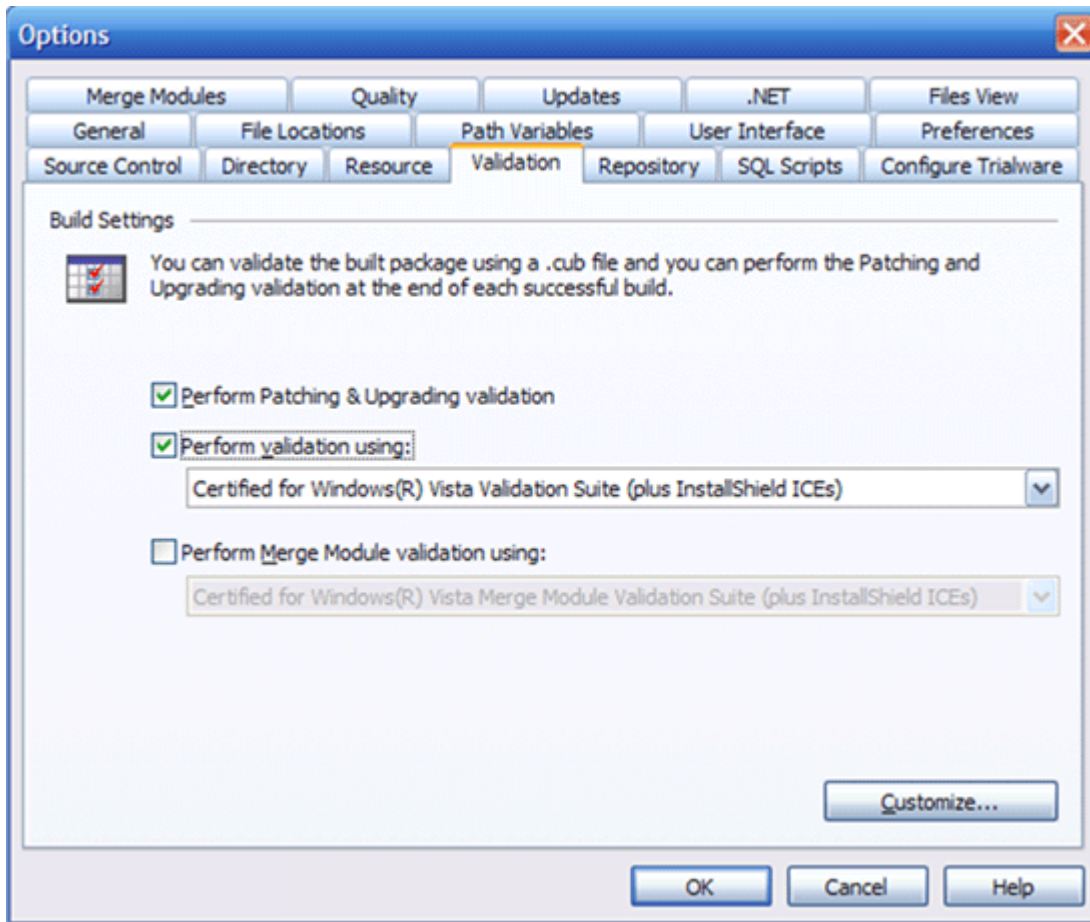
For example, a Basic MSI project that uses functionality from the SQL Scripts view will report ICE17 warnings related to the SQLLogin and SQLBrowse dialog boxes. The ICE17 warnings occur because these two dialog boxes contain controls that are populated at run time, and not design time, and therefore do not have default information stored in the ListBox and ComboBox tables of the MSI database. To prevent these (harmless) warnings from being displayed, you can clear the ICE17 check box in the Customize Validation Settings panel.

In a similar fashion, you can indicate any other ICE rules to skip during validation. Note that this customization applies to the entire InstallShield environment, and not just to a single project.

Windows Vista Validation Suite and InstallShield ICEs

Much of the new functionality in InstallShield 2008 is part of the "Get Ready for Vista" initiative. This initiative includes support for new features of Windows Installer 4.0 (to ship with Windows Vista) and new features of the Windows Vista operating system. Also included in this initiative are additional InstallShield validation rules—called InstallShield ICEs— provided to augment the default validation rules for the Windows Vista Quality Program.

The InstallShield help topic "ISICEs" describes the tests performed by the InstallShield ICEs,

and also provides links to further details about each individual test, including corrective actions for warnings or errors that occur. Some of the new validation rules are:

- **ISICE02**: Verifies that all executables (including DLLs, OCXs, and so forth) included in the installation are digitally signed.
- **ISICE03**: Verifies that the project contains no nested-installation custom actions. (Nested, or concurrent, installations are deprecated in Windows Installer 4.0.)
- **ISICE10**: Verifies that each custom action contains documentation (to assist administrative end users).

When you validate your MSI database using "Windows Vista Validation Suite (plus InstallShield ICEs)", InstallShield performs these additional tests. As with the standard ICE rules, you can customize which ISICE validation tests to perform during validation.

InstallShield Best Practice Validation Suite

The Premier edition of InstallShield 2008 includes additional validation rules, called InstallShield Best Practice (ISBP) rules. The ISBP rules test for some common authoring errors and other best-practice violations in MSI packages. Some of the ISBP rules are:

- **ISBP04**: Verifies that properties used in dialog boxes will be available in the Execute sequence, to support the requirement that user input be used as input to an action that makes system changes. A common example is user input from an edit field being written to the registry using the Formatted expression [PROPERTY_NAME].
- **ISBP06**: Verifies that custom actions scheduled in the UI sequence are also scheduled in the Execute sequence, to ensure the action is performed during a silent installation.

For a complete list of ISBP rules, see the InstallShield help topic "InstallShield Best Practice Suite"; as with other types of validation, you can suppress particular ISBP rules using the Validation tab of the Options panel.

For more information about the "Certified for Windows Vista" logo, see the logo requirements white paper, available from Microsoft.