

Blackboard Enabled Compatibility Program

Developer Guide

For System Extensions running on the

Blackboard

Platform





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1. Introduction

Welcome to the Blackboard Enabled™ Compatibility Program, designed to test System Extensions running on the Blackboard platform. This program has been customized and designed in partnership between Blackboard Inc. and Product Quality Partners, Inc. Blackboard has approved all aspects of the program.

The purpose of this Developer Guide is to provide the Blackboard Building Blocks™ developer community with detailed information about the compatibility process and the specific tests that will be run once you submit your System Extension for compatibility testing. All tests executed as part of the compatibility program are fully documented in this Developer Guide and are available for download. This Guide also provides detailed descriptions and test tips to assist you with your pre-testing, prior to System Extension submission for the “Blackboard Enabled” logo.

Product Quality Partners, Inc. is an independent software testing company chosen by Blackboard to execute the Blackboard Enabled™ Compatibility Program. All program specifics including processes, test design, and program design have been approved and are enforced by Blackboard, Inc.

We look forward to contributing to your System Extension’s success and working with you as part of the Blackboard Enabled™ Compatibility Program.



2. **What is the Blackboard Enabled Compatibility Program?**

The **Blackboard Enabled Compatibility Program** is designed to allow system administrators and developers the mechanism to ensure their System Extension meets the high quality standard of operation and consistent user interface defined by Blackboard, Inc. The purpose of the testing is to verify that the System Extension is appropriately integrated with the Blackboard platform, successfully performs core functionality as designed, provides appropriate and helpful messages to the user under error or stressed conditions, is well documented for installation, administration and general use, and is compatible with supported Blackboard operating systems and browsers.

System Extensions that have successfully completed the Blackboard Enabled Compatibility Program may be awarded the “Blackboard Enabled” logo, which signifies the System Extension built to connect a specific version of Blackboard to a specific version of the third party software has passed a set of compatibility tests defined by Blackboard, Inc. Blackboard believes in the value of System Extension testing because it continues Blackboard’s tradition of setting the standard for e-Education. The logo is not a Full Product Quality Assurance guarantee from Product Quality Partners, Inc.

Note: Quality Partners has no control over whether Blackboard will issue a “Blackboard Enabled” logo. Blackboard has reserved the right to refuse participation by any Vendor in the use of any trademark, licensing or compatibility program regardless of the test results determined by Quality Partners; or terminate the testing without prior notification. Blackboard will consider reimbursing the submission cost accordingly.

Benefits

- Access to Blackboard global marketing and distribution channels; including being featured in the Blackboard Building Blocks Catalog
- Various go to market assistance and related marketing and promotion programs as described on the Blackboard web site.
- Valuable testing and results information for the developer who may not otherwise obtain the feedback.
- Increase the quality level of the System Extension.
- Improved customer experience with the System Extension within the Blackboard environment.

For information regarding the Blackboard Building Blocks Developer Network (BbDN), please visit: http://buildingblocks.blackboard.com/bin/bbdn_info.pl



3. Getting started – Scheduling and Submission

For your System Extension to receive the Blackboard Enabled status and logo you must schedule your test and submit your package to Product Quality Partners/Blackboard Enabled Compatibility lab. **In order to maximize your chances for a successful test result, you are required to run all tests prior to submission.**

To schedule your test, please call the Product Quality Partners lab at (925) 485-6170 or send an email to blackboard@qpqa.com. You will receive confirmation the same working day for all submission forms, calls and emails received by 3:00 P.M. Pacific Time.

To facilitate in the test process and provide the developer as much necessary time to continue working with their System Extension, software and documentation must be submitted electronically to blackboard@qpqa.com. The software and documentation must be sent in the same format that it will be distributed to the public. Typically all electronic components of the submission package are zipped up into a single file for submission.

As part of your submission, please complete a Developer Questionnaire (See Section 11). To send the form electronically, copy and paste the sections to a new Word document, fill in the data, save, and then email the file to blackboard@qpqa.com.

Requirements for submission of your test package:

- ✓ Schedule testing by contacting the Blackboard Enabled Compatibility Lab at (925) 485-6170, or by sending an email to blackboard@qpqa.com
- ✓ A completed Developer Questionnaire, taken from Section 11 of this document.
- ✓ A pre-tested candidate of your System Extension by FTP, email, or CD media.
- ✓ A copy of the Installation Guide for your System Extension in .pdf format. Include any other documentation referenced in the Installation Guide.
- ✓ If your System Extension communicates with external data source, access to data feeds is required. Any test account information must already be set up prior to submission and the relevant information (user id and password) must be provided.
- ✓ A copy of the test outline or functional specification associated with your application (optional).
- ✓ A copy of the User Guide/Manual or other documentation targeted for the end user (optional).
- ✓ The signed Quality Partners Vendor Software Testing Agreement faxed to +1 925-484-1773. *Testing agreements are to be returned only once. Additional compatibility testing will only require the product addendum to be signed, unless there is a change to the agreement.*
- ✓ Payment for the compatibility testing. See pricing section to determine fee.

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For ISVs located in the U.S., please submit payment by check. Make checks payable to:

Product Quality Partners, Inc.

Blackboard Enabled Compatibility Test Lab
450 Main Street – 2nd Floor
Pleasanton, CA 94566
United States of America
Phone: +1 925-485-6170

For ISVs located outside the U.S., please submit payment by check or wire transfer.

Wire Information:

Bank of America
National Trust & Savings Assn.
337 Main St.
Pleasanton, CA 94566
United States of America
+1 925-833-9588

Payee name: Product Quality Partners, Inc.
Account number: 02359-02322

NOTE: All wire transfers must include an additional \$20 U.S. bank service charge, \$25 if from outside the US.

Late or No Show Submission Penalty Fee

Quality Partners requests confirmation from the ISV that their System Extension will be submitted to the Blackboard Enabled Compatibility Test Lab within two weeks of the scheduled test date. If Quality Partners is not notified within the appropriate time period, a late or no show submission penalty fee may be applied and due upon submission.



4. Process after Submission

1. Once your package is received, a receipt confirmation notice is sent via e-mail to the contact person specified in the submission email or telephone call.
2. Regular status emails will be sent to you and Blackboard indicating the progress of your testing. Information will include tests completed to date, tests remaining, failures found, and any open issues. Note: Failures found will include detailed problem information to assist engineering with duplication of the problem.
3. Problems found during testing can also be viewed in our online bug database. This database contains information about problems as they are found. When the testing of your System Extension has been scheduled and confirmed, we will send the appropriate links and logins to our online bug database.
4. An electronic final test results report will be made available to Blackboard and to you within 10 working days from the start of testing for a single System Extension.
5. Once your System Extension has met all of the compatibility requirements, Blackboard will provide you with the “Blackboard Enabled” logo.
6. If your System Extension does not meet compatibility, the areas must be fixed and resubmitted for retest. Please contact the QP Blackboard Enabled Compatibility Test Lab to reschedule your System Extension compatibility test. The new version must contain bug fixes only (no changes to the feature set) to be eligible for the retest fee. If there are new or extracted features, a full test fee must be applied.
7. If there are areas that do not meet compatibility and are considered either part of your design or out of your control to fix, then the test may be eligible for a waiver. Please see the section titled “Special Test Exceptions or Waivers” for full details.



5. Pricing

Full Test Fee - \$4600

This fee applies to the submission of one System Extension to the Blackboard Enabled Compatibility Test Lab.

Re-test Fee - \$2520

For Developers of System Extensions that do not initially meet compatibility, Quality Partners offers a re-test submission process. The re-test of an updated System Extension will be comprised of a full set of tests in sections of the test kit that contained requirements not met in the previous submission. The re-test will also include a selection of tests from the other sections of the test kit. The re-test will verify that all previous requirements not met have been resolved. To qualify for a re-test, an updated System Extension must not contain additional functionality nor major feature changes. Please see Chapter 9, Software Revision Handling for details.

Late or No Show Submission Penalty Fee

Quality Partners requests confirmation from the developer that their System Extension will be submitted to the Blackboard Enabled Compatibility Test Lab within two weeks of the scheduled test date. If Quality Partners is not notified within the appropriate time period, a late or no show submission penalty fee may be applied and due upon submission.

Note: Dollar amounts refer to US Dollars.

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6. *Top Ten Failures*



Have you checked for these?

As more and more System Extensions are tested within the scope of the Blackboard Enabled Compatibility Program this section will contain the top ten failures experienced when executing the tests. The list of failures will be based on actual System Extension testing results and will be updated as the list evolves over time. Until the list of top ten failures is available please be sure to check the following to allow your System Extension to be as prepared as possible for Compatibility testing.

Items to review:

- The System Extension has successfully passed the Compatibility Tests listed in the text kit prior to submission to the Compatibility Test Lab.
- The documentation submitted along with the System Extension is complete and has been tested in conjunction with the System Extension prior to submission to the Compatibility Test lab.
- A completed Developer Questionnaire form providing contact and product information is included in your submission package.
- You have read and understand the payment information in the Compatibility Developer Guide.
- You have contacted the Blackboard Enabled Compatibility Lab to schedule testing.
- The signed Quality Partners Vendor Software Testing Agreement is included in your submission package.

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7. Test Information

The purpose of this section is to provide a description of the tests that will be executed by Quality Partners as part of the Blackboard Enabled Compatibility Program. All tests that will be executed as part of the Compatibility Program are included and documented below. **Executing these tests prior to submitting your package for testing will greatly increase your chances for a successful result.**

The tests are designed to explore multiple facets of the System Extension and verify that the System Extension is appropriately integrated with the Blackboard platform, successfully perform core functionality as designed, provides appropriate and helpful messages to the user under error or stressed conditions, is well documented for installation, administration and general use, and is compatible with supported Blackboard operating systems and browsers.

Please note that the test cases in this document are subject to change at any time based on business and technology requirements. To maximize the chances of your application meeting compatibility criteria, please ensure you have the most current version of this document. If you would like to be notified of any changes to the test kit, please send an email to blackboard@qpqa.com

Conventions Used in This Document

The following terms are used in this document to signify the requirements of the application.

MUST, VERIFY or REQUIRED, means that the criteria is an absolute requirement.

MUST NOT, or DOES NOT, means that the criteria is an absolute prohibition.



7.1. Install and Uninstall Compatibility and Consistency Requirements

Note the content of the System Extension is verified at the time of testing and Product Quality Partners, Inc. is not responsible for content that is changed after testing has been completed. This is pertinent to all System Extensions, and specifically to any Extension that contains dynamic server content.

- 7.1.1. Verify install script contains all components required for a specific Extension type.

Description: The install script must fail if any of the components required for a specific Extension type are not present. (See "Extension Interfaces.doc" on the Blackboard Developer Network for details).

- 7.1.2. Verify install functions properly as stated in the documentation.

Description: The install should function properly, on the documented platform.

- 7.1.3. Verify the Extension contains a unique handle and version number in the bb-manifest.xml file.

Description: The bb-manifest.xml file should contain the handle in the form of "handle value=" and the version/build number in the form of "version value=". This version number must be unique and in the format of 'major.minor.patch' components.

- 7.1.4. Verify the installed Extension appears on the System Admin>System Tools>System Extensions (Bridges)> Manage System Extensions (Bridges) page within Blackboard.

Description: The Extension should appear in the "Installed System Extensions" list on the Manage System Extensions (Bridges) page when user logged in as "administrator."

- 7.1.5. Verify the installed Extension displays the correct version/build number on the "Installed System Extensions" list.

Description: The Extension's version number and build should be listed in the "Installed System Extensions" list. This version and build number should match the number in the bb-manifest.xml file.

- 7.1.6. Verify that the install does not modify any files or permissions of those files belonging to other Extensions.

Description: The Extension install should not modify any pre-existing files or change any permissions of those files belonging to other applications.

- 7.1.7. Verify the installed Extension is accessible to each of the following using the supporting browser: a default Blackboard student, an instructor, and an administrator.

Description: The test will verify successful login to a course where the Extension is available using each a student, an instructor, then an administrator User Name/password. It will verify access to the Extension is visible and it links to the correct application.

- 7.1.8. Verify the System Extension does not prevent the System Administrator from managing the 'Availability' of an Extension from the 'System Admin' page."

Description: The 'Availability' of an Extension should be capable of being set by the System Administrator using the "Available" status field on the System Admin/Manage System Extensions (Bridges) page.

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- 7.1.9. Verify Extension follows Blackboard's standard architecture for "Availability."

Description: Extension availability should be controlled by toggling the "Make Available"/"Make Unavailable" button.

- 7.1.10. Verify the Extension's "Availability" status displays correctly in the "Installed System Extensions" list.

Description: The Extension should appear in the "Installed System Extensions" list on the Manage System Extensions (Bridges) page with an accurate reflection of the "Available" status.

- 7.1.11. Verify Extension follows Blackboard's standard uninstall architecture.

Description: The Extension should be uninstalleable by selecting the "Remove" button for the Extension in the "Installed System Extensions" list on the Manage System Extensions (Bridges) page when user logged in as "administrator."

- 7.1.12. Verify the uninstall procedure functions properly as documented in the install guide.

Description: The documented uninstall procedure should successfully remove the Extension from the "Installed System Extensions" list on the Manage System Extensions (Bridges) page.

- 7.1.13. Verify the remove script performs any clean up, such as notifying an external system.

Description: Blackboard handles removing the Extension; however, the Extension's remove script should execute all clean up functions outside of Blackboard.

- 7.1.14. Verify the remove script does not attempt to alter the client response.

Description: The remove script must not write any HTML nor can it attempt to set an alternate status code. This test will verify that the exception message "user visible" is not thrown when the remove script is executed.

- 7.1.15. Verify the remove script does not remove any files that were not part of the installation.

Description: The uninstall script should not remove any files that were not created during the installation or normal operation of the Extension.

- 7.1.16. Verify the uninstall of the Extension does not adversely affect any other installed applications or the Blackboard server itself.

Description: The Extension's un-installation should not affect any other components of the Blackboard server, including other installed Extensions. Blackboard's basic Extensions (Dictionary/Thesaurus and Link Checker) should be unaffected during the un-installation of the third-party Extension.

- 7.1.17. Verify the uninstalled Extension is no longer available to the Blackboard student.

Description: The test will verify that the uninstalled Extension is no longer available to a student User Name/password that previously had access to the Extension.



- 7.1.18. Verify an uninstalled Extension can be reinstalled by a content editor (or the 'administrator') and the Extension launches successfully.

Description: After reinstall, the Extension should appear in the "Installed System Extensions" list with the Available status of "no - Awaiting Restart". After stop/restart of Blackboard services and any configuration steps, the Extension should appear as "Available - yes" and function correctly.

- 7.1.19. After an Extension has been reinstalled, verify that it fails gracefully if the needed 3rd party dependencies have been deleted/removed.

Description: After reinstall, the Extension should issue a warning message or otherwise fail gracefully if a 3rd party dependency is not available.

- 7.1.20. Verify Extension has configuration documentation/help.

Description: The Extension should have documentation listing any configuration issues.

- 7.1.21. Verify that no file/directory permissions conflict with the normal operation of the Blackboard server.

Description: All files and directories created during the installation should assume the default permissions of the Blackboard server.

- 7.1.22. Verify that all version numbers stated are identical.

Description: The Extension's name, version, and build number should be consistently named.

- 7.1.23. Verify that all updated Extensions use a unique version number.

Description: Any Extensions that have been updated must have a new version and build number.

7.2. Core Functionality and Design Criteria Requirements

- 7.2.1. Verify the icons supplied with the Extension are consistent with icons in the Blackboard e-Education platform.

Description: Each icon within the Extension should be consistent with icons as they appear in the Blackboard e-Education platform.

- 7.2.2. Verify each Extension has an associated launch icon within the course context.

Description: Each Extension should have an icon that launches it.

- 7.2.3. Verify the correct icons (images) are displayed in the correct location within Blackboard.

Description: Each icon or image should display in the correct, documented location within Blackboard.

- 7.2.4. Verify the Extension provides configuration scripts, even if only to display information to the user that no configuration is available.

Description: A configuration script should execute when the administrator selects the Properties button for the Extension in the System Admin>Manage System Extensions (Bridges) page.



- 7.2.5. Verify the configuration scripts are able to respond to the initial configuration request and provide a mechanism to recover from missing libraries, etc

Description: The configuration scripts of an Extension should be able to display a message back to the user whenever it encounters a problem.

- 7.2.6. Verify the Extension functions as designed. A cursory pass will be made through all major functionality of the Extension.

Description: The Extension should perform as designed.

- 7.2.7. Verify an Extension successfully resolves IP addresses and/or domain names.

Description: The Extension should resolve and establish a successful connection using IP addresses and domain names as supported.

- 7.2.8. Verify all links direct the browser to the proper pages.

Description: There should be no misdirected or broken links.

- 7.2.9. Verify the Extension icons do not duplicate other Blackboard icons.

Description: All Extension icons should be unique.

- 7.2.10. Verify all icons are clear, visible and appropriate.

Description: All icons displayed by the Extension should be easily distinguishable and appropriate.

- 7.2.11. Verify all pages are readable; that selection and highlighted text is clear and not confusing.

Description: All content and selection on pages within the Extension should be easily readable and not confusing.

- 7.2.12. Verify that within the Extension, pages are redrawn properly when using the scroll arrows.

Description: If scroll arrows become active, the Extension pages should be redrawn properly when scroll up and down the screen.

- 7.2.13. Verify the Extension's entry point is consistent upon launch.

Description: Regardless of how the Extension is launched, it should launch with the same main entry point.

- 7.2.14. Verify all navigation keys/buttons/icons function correctly within the Extension.

Description: User should be able to navigate appropriately between and within the Extension.

- 7.2.15. Verify the Extension does not cause unnecessary page redraws.

Description: Page should be redrawn only when necessary.

- 7.2.16. Verify all pages are properly redrawn when dialog boxes are dismissed.

Description: Page should repaint appropriately when dialog boxes are dismissed.

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- 7.2.17. Verify that data entry fields scroll forward when entering characters at the end of the data entry field. (Recommended)

Description: At the end of a data entry field, the data entry field should scroll forward to display the entered character.

- 7.2.18. Verify that data entry fields can handle editing commands. (Recommended)

Description: For all data entry fields, the editing commands (e.g. Cut, Copy, Paste) should function as expected.

- 7.2.19. Verify that text is not truncated in the Extension.

Description: All text within each page should be complete, without truncation.

- 7.2.20. Verify correct spelling and grammar for each page within the Extension.

Description: All text within the application should use proper grammar and correct spelling.

- 7.2.21. Verify the Extension does not contain inappropriate or offensive graphics or text.

Description: This test will verify that no inappropriate or offensive graphics or text is present in the Extension. The Extension must not contain or access any material or information that is deceptive, misleading, fraudulent, obscene, pornographic, defamatory, in violation of personal or property rights, regulation or law, trade libelous, libelous, slanderous, unlawfully harassing or injurious, excessively violent, or otherwise deemed unfit for publication by QP or Blackboard, Inc.

- 7.2.22. Verify the Extension responds gracefully in the context of normal server operation.

Description: There should be no inappropriate errors, crashes, data corruption or loss of saved data during the testing process.

7.3. Integration Validation Requirements

- 7.3.1. Verify the Extension does not make modifications to the Blackboard database schema (add tables, modify table attributes).

Description: The Extension must use Blackboard APIs.

- 7.3.2. If data is transferred to or from the Blackboard system, verify it is transferred correctly.

Description: This test will verify that all data sent by the System Extension is sent and is retrieved properly. The test will also verify that all data intended for the System Extension is received properly and its integrity remains intact.

- 7.3.3. Verify the Extension communicates with the Blackboard server successfully.

Description: There should be no error messages received from the Blackboard server during use of the System Extension.

- 7.3.4. Verify there is no data corruption during data transfer.

Description: There should be no loss or corruption of data during use of the System Extension.

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- 7.3.5. Verify the Extension considers timeout contingencies for external applications or data sources. Also, verify that the Admin-set session timeout value has not been altered by the Extension.

Description: This test will verify that a System Extension considers timeout situations when external applications or data sources are accessed. The test will also verify that the Extension has not altered the Blackboard, Admin-set, session timeout value.

- 7.3.6. Verify the Extension is able to communicate with external applications or data sources.

Description: This test will verify there are no errors if the Extension communicates with external applications or data sources.

- 7.3.7. Verify the Extension does not crash or stop the server.

Description: This test will verify the Extension's integration does not crash or stop the server.

- 7.3.8. Verify specific dates do not trigger a virus to become active.

Description: Common dates which trigger viruses:

January 1, 5, 6,11,15,19,31	July 1,6,13,15,30,31
February 1,6,15,28	August 1,6,15,30,31
March 1,6,28,31	September 1,6,15,22,30
April 1,5,6,15,25,28,30	October 1,6,15,25,31
May 1,6,15,25,28,31	November 1, 6, 15,17,18,22,24,25,26,28,30
June 1,6,13,15,20,28	December 1, 6,13,15,25,28,30,31.

- 7.3.9. Verify specific functions do not trigger a virus to become active.

Description: After the Core Functionality test cases, if no virus or malicious behavior occurs, this should be marked as a PASS.

7.4. Stress Test Requirements

- 7.4.1. Verify an appropriate error message is displayed whenever an invalid Extension upgrade/installation is performed.

Description: When the Extension name matches an installed Extension name and the version string is equal to or less than the version of the installed Extension, an error message should display. The install process should fail.

- 7.4.2. Where an Extension allows data entry, verify an appropriate error message is displayed whenever invalid data is entered. (alphanumeric, numeric, date, special characters.) All data entry fields will be tested.

Description: An error message should display when invalid data is entered in a data entry field.

- 7.4.3. Where an Extension allows data entry, verify an appropriate error message displays when data, outside valid boundaries, is entered. All data entry fields will be tested.

Description: An error message should display when data outside valid boundaries is entered in a data entry field.

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- 7.4.4. Where an Extension allows data entry, verify Extension displays an appropriate error message when data entry exceeds the maximum number of characters allowed in a specific field.

Description: An error message should display when data exceeds the maximum character limit in a data entry field.

- 7.4.5. Verify that any dependency of external content servers is handled correctly by the Extension or an error message is displayed.

Description: An error message should display if there is a dependency conflict.

- 7.4.6. Verify the Extension functions properly at its limits.

Description: The test verifies that the Extension functions properly at its documented limits. All documented limitations will be tested. Other limitations of the Extension will be tested i.e. maximum amount of data that can be created, maximum amount of data that can be transmitted, etc. This test will attempt to exceed the Extension's known limitations.

- 7.4.7. Verify that any request for data from the Blackboard system is authenticated by the Extension to prevent unauthorized access.

Description: An appropriate error message should display if a request is not successfully authenticated by the Extension before allowing access to Blackboard system data.

- 7.4.8. If the Extension depends on the network, verify the Extension responds gracefully when the network connection to an outside data source or application is interrupted.

Description: The test verifies that when the connection is cancelled when navigating through the Extension and during data transmission, if appropriate, that no inappropriate errors, crashes, data corruption and or loss of saved data occurs. This test also verifies that when the connection is resumed, the Extension performs correctly and continues to function properly with no crashes, inappropriate errors, data corruption or loss.

7.5. Documentation Requirements

- 7.5.1. Verify an install guide is included with the Extension.

Description: Upon submission, an install guide must be included with the Extension.

- 7.5.2. Verify the contents of the install guide are in standard format.

Description: The install guide should adhere to the format outlined in the Installation Guidelines Handbook.

- 7.5.3. Verify the Extension install guide contains an accurate representation of all the necessary steps for installation and that all steps are accurate.

Description: The install guide file should contain all necessary steps for the installation. There should be no steps necessary outside of the install guide documentation. The install guide should state any additional, manual configuration steps required, such as modifying library paths, a restart of the server. Each step must be accurate.



- 7.5.4. If any software outside of the Extension or the Blackboard Platform is necessary, verify that directions are included for the acquisition.

Description: The install guide should contain all necessary steps for obtaining additional software necessary for the installation.

- 7.5.5. Verify that the install guide states which user must be logged onto the server to complete the installation.

Description: The install document should state the 'Administrator' needs to be logged in to the server to install Extensions.

- 7.5.6. Verify the Extension's install guide contains an accurate representation of the necessary steps for uninstallation.

Description: The install guide should contain all necessary steps for the uninstallation. There should be no steps necessary outside of the install guide documentation.

- 7.5.7. Verify a user's guide is included with the Extension. (Recommended)

Description: Upon submission, a user's guide should be included with the Extension.

- 7.5.8. Verify the Extension functions as documented.

Description: The major functions should work as documented in the Extension documentation and online help.

- 7.5.9. Verify ISV contact information is provided in one of the documents.

Description: ISV contact/technical support information (phone number, e-mail address, and/or web page) is provided in one of the documents.

7.6. Platform Compatibility Requirements

- 7.6.1. Verify the Extension functions properly with the Blackboard supported Java version.

Description: The Extension should function properly with the Java version installed with the Blackboard server.

- 7.6.2. Verify install functions properly on all vendor-supported platforms (within the following set of Blackboard-supported platforms: Windows 2000 Server, Linux RedHat 6.2, Sun Solaris 8) as stated in the vendor documentation.

Description: The install should function properly on all vendor-supported platforms (within the following set of Blackboard-supported platforms: Windows 2000 Server, Linux RedHat 6.2, Sun Solaris 8). Verify the Extension runs and can be accessed from a client browser.

- 7.6.3. Verify uninstall functions properly on all vendor-supported platforms (within the following set of Blackboard-supported platforms: Windows 2000 Server, Linux RedHat 6.2, Sun Solaris 8) as stated in the vendor documentation.

Description: The uninstall should function properly on all vendor-supported platforms (within the following set of Blackboard-supported platforms: Windows 2000 Server, Linux RedHat 6.2, Sun Solaris 8). Verify Blackboard launches and can be accessed from a client browser.

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- 7.6.4. Verify the Extension performs as expected on Internet Explorer 4.0, 5.0, 5.5, 6.0 on a Windows 98 platform.

Description: The test will verify that a student and an instructor are able to login to a course where the Extension is available, and that the Extension should perform as expected on all browsers. All other tests will be performed on the latest version of Internet Explorer on a Windows 98 SE platform. A cursory pass will be performed on all other listed browsers.

- 7.6.5. Verify the Extension performs as expected on Netscape 4.76 and 6.1 on a Windows 2000 Server platform. (Recommended)

Description: The test will verify that a student and an instructor are able to login to a course where the Extension is available, and that the Extension should perform as expected on all browsers. A cursory pass will be performed on all listed browsers.

- 7.6.6. Verify the Extension performs as expected on Internet Explorer 4.0, 5.0, 5.5, 6.0 on a Mac G4 OS9.x platform (Recommended)

Description: The test will verify that a student and an instructor are able to login to a course where the Extension is available, and that the Extension should perform as expected on all browsers. A cursory pass will be performed on all listed browsers.

- 7.6.7. Verify the Extension performs as expected on Netscape 4.76 and 6.1 on a Mac G4 OS9.x platform. (Recommended)

Description: The test will verify that a student and an instructor are able to login to a course where the Extension is available, and that the Extension should perform as expected on all browsers. A cursory pass will be performed on all listed browsers.

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8. Special Test Exceptions or Waivers

On occasion there are test situations that may warrant exception. For example, a waiver may occur if the design of a System Extension prohibits a developer from conforming to one of the tests listed in the criteria. It may also occur if a developer is unable to conform to a test because of a specific problem with the Blackboard Platform and/or a reason completely out of the developer's control.

After reviewing the tests within the Developer Guide, if you feel that your System Extension will not meet a portion of the test criteria, you must request a test waiver. Quality Partners will submit a waiver request for approval to Blackboard once the testing has been completed.

If you were unaware of a particular exception candidate at time of submission, a section for tracking exceptions will be included in the test final results report. Each case will be handled separately. All potential waivers will be communicated to Blackboard in the final result report with information explaining the rationale of the problem.

Blackboard will approve or deny the exception within 5 working business days following the completion of testing. An immediate e-mail will be sent to the ISV reporting approval results for their exception candidate.

If the waiver has been approved, Quality Partners will record the information in a revised final result report. If all other tests have passed, the ISV will receive a test pass. If the waiver has been denied, a retest of the System Extension will be necessary to fix the problem as documented in the failed test result.

PLEASE NOTE: Problems that cannot be reproduced in the QP lab are NOT recorded as failures. If QP discovers a problem once and cannot reproduce the problem, it will be noted in the test results report but will not affect the test status. However, if QP can reproduce the problem consistently, but the developer cannot, we will work with the developer to help isolate the condition for reproducibility. Problems not reproducible at the developer site will be escalated to Blackboard for decision handling through the test results report.

It is important to note that exceptions will not indicate a passed status for that particular exception test.

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9. Software Revision Handling

Blackboard Software Revision

The “Blackboard Enabled” logo only applies to the System Extension for the version of the Blackboard Platform that the System Extension was tested on. The version of the Blackboard Platform that the System Extension was tested on will be listed in the Final Compatibility report. If a new version of the Blackboard Platform becomes available, the “Blackboard Enabled” logo will no longer apply to the System Extension if certified on a previous version of the Blackboard Platform.

ISV Product Revision

The “Blackboard Enabled” logo only applies to the ISV’s product version that has passed the Quality Partners Blackboard Enabled Compatibility Program, and for which Blackboard has authorized the use of the “Blackboard Enabled” logo.

If a new version of the ISV’s product becomes available, which includes major feature changes or additions, the product must be resubmitted for a full test and pass the compatibility tests for the use of the “Blackboard Enabled” logo. If a new version of the ISV’s product becomes available, which does not include major feature changes or additions, a re-test will be necessary to continue the use of the “Blackboard Enabled” logo, unless Blackboard waives the need for a retest.

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10. Contact Information

We welcome your comments, feedback, or questions regarding this document. To contact us, please send an email to blackboard@qpqa.com.

Our mailing address is:

Product Quality Partners, Inc.

Blackboard Enabled Compatibility Test Lab

450 Main Street – 2nd Floor

Pleasanton, CA 94566

United States of America

Phone: +1 925-485-6170

Fax: +1 925-484-1773



11. *Developer Questionnaire*

The purpose of this section is to gather general information about your company and product. We will add your information to our database so that you will automatically receive general updates regarding the program.

To send the forms electronically, simply copy and paste the appropriate sections to a new Word document, fill in the data, save, and then email the file to blackboard@qpqa.com.

Contact Information

Company name	
Address	
City, State/ Province, ZIP/Postal Code, Country	
Main Phone Number and Ext. (including Country Code first)	
Fax Number (including Country Code first)	
Company website URL	
Support contact person	
Direct Phone Number and Ext. (including Country Code first)	
Email address	

Product Information

System Extension name:	
System Extension version:	
Description of System Extension:	
Category:	
Type:	
Minimum Requirements:	Blackboard Platform/OS/database: Browser: Screen Resolution:
Audience:	student instructor other
Download file size (.zip format):	

12. **Additional Targeted Test Services for the Developer Community**



Why the service was developed and the benefits:

QP's experience with compliance/compatibility programs has been constant since 1995. To date QP has designed, customized, administered and maintains more 3rd party compliance/compatibility programs than any other test company. In doing so we have closely watched the evolution of these programs. We now understand the industry challenges with the release of most products. It's amazing but true, 90% of first time compliance/compatibility program submitters fail the test criteria. And even more amazing, all tests to be executed are available to the developer and completely detailed (no subjective tests). Furthermore, QP provides a top ten failure list for all our programs to help developers steer clear of typical problems encountered during certification testing.

The time for finding high severity problems in a product **IS NOT** during certification testing. Why does this happen? We suspect it's a variety of reasons.

- Developers don't have the time or resources to perform all the testing that is needed,
- With the technology ever-changing, those testing the product aren't as familiar with the platform as they could be if they had training and/or worked with multiple similar technologies,
- Many organizations don't pay as close attention to boundary and error handling testing, which is as important as functional testing,
- Many organizations don't pay close attention to process tracking across builds, i.e. something that passed a test yesterday may not today if the code base changed, etc.

To solve this challenge, QP has designed the Target Test Service for developers. This allows the developer to utilize QP's service for early testing, to uncover those problems that may fail submission prior to formal submission of the application. This service is a quick turnaround test and can be utilized multiple times, as requested, throughout the development process. This service helps to ensure success during first time submissions. Our pricing model for this service is extremely cost effective. Although the service is now in progress, more details about this service will be available on QP's web site at www.qpqa.com in the coming weeks.

For more information or to schedule your product for a Target Test, contact us at targettest@qpqa.com or (925) 485.5620.