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| solutiont | MSDN Forums Client Test Plan | | | | | |
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# Overview

This test plan discusses the test coverage for the current Release of the MSDN Forums Client.

## What’s being covered

This test plan covers the following areas for the MSDN Forums Client

1. Installer verification
2. Unit tests
3. GUI Functionality

## What’s not being covered

This test plan does not cover the following:

1. Multi-platform testing. All testing has been done on Windows Vista and Windows XP Pro. This test plan does not discuss testing on other operating systems such as Windows Server.

## Risks

1. Since no testing has been done on operating systems such as Windows Server platforms, it is possible that the tool and its test suites will perform differently on other operating systems where Visual Studio 2008 is supported.

## Required tools

To install the Forums Client, the following tools must be installed:

1. Microsoft .NET Framework 3.5
2. Windows Live ID Client 1.0 SDK
3. Microsoft SQL Server Compact 3.5

To contribute to projects developed by the Developer Community Labs team, Visual Studio 2008 and several free or open source tools are required. No particular version of Visual Studio 2008 is required. The required free or open source tools are:

1. NUnit 2.4.7 ([Download NUnit .Net unit testing framework](http://sourceforge.net/projects/nunit))
2. [White UI test framework](http://www.codeplex.com/white), an extension to NUnit can be downloaded from CodePlex
3. [Microsoft FxCop 1.36](http://www.microsoft.com/downloads/details.aspx?familyid=3389F7E4-0E55-4A4D-BC74-4AEABB17997B&displaylang=en)
4. [Windows Installer XML toolset](http://sourceforge.net/projects/wix/) more commonly known as WiX

Additional Information:

**Before building, you must edit the *ForumsClient.Settings.targets* file to specify the locations of the required development tools.**

In order to enable developers with various editions of Visual Studio 2008 to contribute to projects developed by the Developer Community Labs engineering team, we are using NUnit 2.4.7 for all automated testing. The unit tests for the MSDN Forums Client are automated and require NUnit 2.4.7.

You can download NUnit from SourceForge ([Download NUnit .Net unit testing framework](http://sourceforge.net/projects/nunit)). If you are not familiar with NUnit, read the relevant documentation that is installed during the download. You can find that documentation at *<NUnit installation directory>\NUnit* 2.4.7*\doc\index.html*. After installation, be sure to edit the nunit-console.exe.config and nunit-gui.exe.config files to modify the startup section. This will select which .Net Framework versions are used by NUnit and the order in which they will be used. By default, NUnit will try to use .Net V1.1 if it is installed and our tools are built with VS 2008 and .Net 3.5. The NUnit Installation doc explains how to modify the sequence.

ThoughtWork’s open source White UI test framework, an extension to NUnit, is used for automated GUI testing. See the [White project](http://www.codeplex.com/white) page on CodePlex to download or get more information about this useful tool.

FxCop 1.36 ([Microsoft FxCop 1.36](http://www.microsoft.com/downloads/details.aspx?familyid=3389F7E4-0E55-4A4D-BC74-4AEABB17997B&displaylang=en)) and Wix ([Windows Installer XML toolset](http://sourceforge.net/projects/wix/)) are also required to build MSDN Forums Client. Both are free downloads.

# Area breakout

This section describes testing of the key feature set listed in section 1.1 along with their sub-feature sets.

## Installer verification

The purpose of this test is to verify that the installer correctly installs the MSDN Forums Client.

**Scenarios to verify**

1. Verify user can successfully install the MSDN Forums Client on any machine which has the required tools installed. The tools required to install are:
   1. Microsoft .NET Framework 3.5
   2. Windows Live ID Client 1.0 SDK
   3. Microsoft SQL Server Compact 3.5
2. Verify user cannot successfully install the MSDN Forums Client on a machine which does not have Microsoft .NET Framework 3.5 installed.
3. Verify that the installer can automatically install SQL/CE or the Live ID SDK if they are missing and successfully install the MSDN Forums Client. The auto-installation of each tool must be verified separately and in combination.
4. Verify that the installer can be run in quiet mode in all the scenarios described in scenarios 1 – 4 above.
5. Verify that the user can copy the Forums Client installation to external media (such as a USB Flash Drive) and execute the Forums Client on a different machine which has the required tools installed.

## Unit Tests

The MSDN Forums Client unit tests are fully automated and are included in the MSDN Forums Client solution under the Test.ForumsClientUnitTests, Test.MicrosoftForumsProvider, and Test.SyncServiceprojects. The unit tests verify the functionality of various MSDN Forums Client classes including:

1. the PostContainer class
2. the ForumContainer class
3. the SynchronizationController class
4. the SynchronizationManager class
5. the DomainObjectConverters class
6. the MicrosoftForumsServiceProvider class

## No Internet Connections tests

The tests for this suite have been automated in the LostInternetConnectivityTests class of the Test.UITestSuite project. However, the automated tests do require user interaction to enable and disable the internet connection. So, the tests should not be part of an unattended automation run such as build verification tests that are run when files are checked in.

**Scenarios to verify**

### Cannot Logon if Internet Connectivity is Lost

Verify user cannot successfully logon if internet connectivity is lost between application start and the time the user completes the logon dialog.

### Logon Dialog is Not Shown without Internet Connectivity at Startup

Verify that the application does not show the logon dialog when internet connectivity is lost before application start.

### Unauthenticated User is Prompted to Logon

Verify that the application prompts a user who has not logged on if internet connectivity has been established and the user attempts an action which requires them to be logged on (subscribing to a forum or synchronizing a forum to which they have previously subscribed)

## Subscribe to Forums Dialog Tests

The tests in this suite have been automated SubscriptionDialogTests class of the Test.UITestSuite project. Unfortunately, bugs in the White UI test tool created the need for workaround strategies in many tests in this suite. When the White UI test tool bugs get fixed, the tests should be updated.

**Scenarios to verify**

### No Subscriptions Startup Scenario

Verify that the ForumsClient automatically prompts the user to logon and presents the Subscribe to Forums Dialog to the user if internet connectivity exists and the user has no subscriptions in the database. **This test has been automated.**

### Subscribe Button Presents the Subscribe to Forums Dialog

Verify that clicking the Subscribe button on the main window’s menu bar presents the Subscribe to Forums Dialog to the user and prompts the user for logon if and only if they are not already logged on. **This test has been automated.**

### Some Subscriptions Startup Scenario

Verify that the ForumsClient automatically prompts the user to logon but does not present the Subscribe to Forums Dialog to the user if internet connectivity exists and the user has at least one subscription in the database. **This test has been automated.**

### Subscribe to Multiple Forums for Multiple Brands and Locales

Verify user can successfully subscribe to multiple forums for multiple brands and locales and that the features of the Subscribe to Forums Dialog function correctly. **This test has been automated.**

### Filtering by Text in the Name and Description TextBox

Verify that the user can successfully use the Filter Name and Description textbox to reduce the number of forums presented in the Available Forums list. **This test is has been automated.**

## Manual Synchronization of ForumsTests

**Scenarios to verify**

### Manual Syncronization of a Single Forum

Verify that the user can manually synchronize one forum. This test is currently manual.

1. Delete the DB file and user config file
2. Start ForumsClient.exe
   1. Should bring up Live ID logon dialog
3. Cancel the Live ID logon dialog
4. On the main window’s menu bar, click **Options**
   1. This should bring up the Options Dialog
5. On the Options Dialog,
   1. uncheck the **Automatically Synchronize Forums** checkbox
   2. click **Save**
6. On the main window’s menu bar, click Subscribe
   1. Should bring up Live ID logon dialog
7. Logon
   1. Should bring up Forums Client’s Subscribe to Forums Dialog
8. Select Msdn brand
9. Select **1** in **Days of Posts to Download** combo box
10. Select “***Jscript for the .NET Framework***” in the AvailableForumsListBox
11. Click the Add button
12. Click the Finish button to subscribe to these forums and exit the Forums Client’s Subscribe to Forums Dialog window
13. In the main window, right click on the ***Jscript for the .NET Framework*** forum and click **Synchronize**.
    1. A circular green icon should appear next to the forum and vary its color to indicate that the forum is being synchronized.
14. When the forurm has finished synchronizing, the circular icon will disappear. When this happens,
    1. note the number of unread posts shown in parentheses after the forum name
    2. verify that no threads which have not been updated in the pat 24 hours have been included.
15. Right click on the ***Jscript for the .NET Framework*** forum and click **Unsubscribe**.
    1. The forum should be deleted from the main window.
16. On the Main GUI Window, click the Subscribe button to reopen the Forums Client’s Subscribe to Forums Dialog
17. Select **90** in **Days of Posts to Download** combo box
18. Select Msdn brand
19. Select the ***Jscript for the .NET Framework*** forum and click **Add**.
20. Click **Finish**
21. In the main window, right click on the ***Jscript for the .NET Framework*** forum and click **Synchronize**.
22. When the forurm has finished synchronizing, compare the number of unread posts from the past 90 days with the number from the earler synchronization with 1 day’s posts. The 90 day number should be much larger. Verify that no threads are included that have not been updated in the past 90 days.
23. Exit ForumsClient.exe

### Simultaneous Manual Syncronization of all Forums

Verify that the user can manually synchronize all forums simultaneuously. This test is currently manual.

1. Delete the DB file and user config file
2. Start ForumsClient.exe
   1. Should bring up Live ID logon dialog
3. Cancel the Live ID logon dialog
4. On the main window’s menu bar, click **Options**
   1. This should bring up the Options Dialog
5. On the Options Dialog,
   1. uncheck the **Automatically Synchronize Forums** checkbox
   2. click **Save**
6. On the main window’s menu bar, click Subscribe
   1. Should bring up Live ID logon dialog
7. Logon
   1. Should bring up Forums Client’s Subscribe to Forums Dialog
8. Select **1** in **Days of Posts to Download** combo box
9. Subscribe to at least 12 forums from 2 different brands and at least 2 locales
10. On the main window, right click the **Forum** expander control
11. Click Synchronize All
12. All forums should start synchronizing.
13. When each forum finishes, check the last **Modified Date** column for each thread. You may see two dates because of time zone differences but all should be within the past 24 hours.
14. Exit ForumsClient.exe

## Automatic Synchronization of ForumsTests

**Scenarios to verify**

Verify that the user can automatically synchronize any forums to which they are subscribed. This test is currently manual.

1. Delete the test DB file(s)
2. Start ForumsClient.exe
3. Cancel the Live ID logon dialog
4. You should see an empty main window
5. Click the Options button in the main window
6. Uncheck the Automatically Synchronize Forums checkbox
7. Click Save
8. Click Subscribe
9. Logon
10. Subscribe to one forum and click Finish
11. Wait 6 minutes to verify that the forum does not automatically start synchronizing
12. Click the Options button in the main window
13. Check the Automatically Synchronize Forums checkbox and change the selection in the associated dropdown to Every 10 minutes
14. Click Save
15. In the main window, you should see the single forum to which you subscribed
16. Synchronization should of the forum start within 1 minute.
17. Allow the forum to finish synchronizing.
18. The forum should not try to automatically synchronize again until 10 – 11 minutes have passed since the forum completed its previous synchronization.
19. Note: If the server throws an error, client synchronization will terminate silently and retry 1 minute later. This should not be viewed as a test failure. A bug has been filed requesting visual notification of the server error so that the user is aware that the synchronization is incomplete. When the client reports the server failure, this test should be updated to specify the expected behavior if and when such server failures occur.
20. Subscribe to at least 10 more forums from a mixture of brands and locales.
21. Within 1 minute, some of the forums should begin to synchronize. Four forums will be simultaneously synchronized for each processor your computer has installed.
22. When any of those first forums complete synchronization, other forums will begin synchronization within 1 minute. Exactly enough forums to reach the limit defined by Environment.ProcessorCount \* 4 should be started.
23. All of the new forums must at least start synchronizing before the one forum that you originally subscribed to and was synchronized earlier in the test attempts to synchronize again.

## Options Dialog Tests

The tests for this suite have been automated in the OptionsDialogTests class of the Test.UITestSuite project.

**Scenarios to verify**

### Default Settings

Verify that the default settings for all options are as expected.

### Automatic Synchronization Time Interval

Verify that the user can select various time intervals for automatic synchronization and turn automatic synchronization on or off.

### User Options Persist

This test verifies that settings chosen by the user persist across invocations of the Options Dialog within a single execution of the Forums Client and across multiple executions of the Forums Client application.

## Forum Viewing Tests

The tests in this suite verify the behavior of features related to the display of threads in a forum and of the posts and replies within a thread.

Before beginning the tests in this suite, you should subscribe to at least one forum that has several hundred posts in the timespan you chose on the subscription dialog. Synchronize the forum that you will use for this test.

**Scenarios to verify**

### Default Display

Verify that the user can read posts when not logged on to the server and that the default display of a forum is as expected.

1. Start ForumsClient.exe
2. Cancel the Live ID logon dialog
3. Click on the forum you want to use for this test.
   1. The threads for the forum should be displayed in a grid display.
   2. The grid should have 4 columns: Subject, Author, Modified Date, and Created Date.
   3. The threads of the forum should be sorted in descending order by their Modified Date field.
   4. The forum’s name should be displayed above the grid.
   5. A search box with a “magnifiying glass” icon and an expander arrowshould be displayed.
   6. Since the forum has hundreds of posts, you should see an enabled vertical scrollbar to allow you to move up and down in the list. In a forum with few threads, the scrollbar should be visible but not enabled.
   7. Some threads will have a “+” icon to the left of their subject column. This indicates that there are replies to the root post of the thread. Threads which do not have the “+” icon have no replies.
   8. The post reading pane should be empty as you have not selected a post yet.
4. Click on the “+” icon next to a thread.
   1. This should expand into a tree view showing all posts and replies for the thread
   2. The icon should change to a “-“ icon
   3. Since you have not selelcted a post from the thread, no text should be displayed in the post area
5. Click a minus sign icon for a post that is underneath the root post.
   1. This should collapse that level and all levels underneath it
6. Click the minus sign icon next to the thread
   1. This should collapse all levels of the thread
7. Click on the “+” icon next to the thread
   1. This should expand all level of the thread again including the sub tree that you collapsed earlier.
8. Identify a thread which has no replies. Click in the area where the “+” icon would be if the thread had reples.
   1. This should automatically select the post and display it in the post reading pane
9. Click on the subject column of a thread that has at least one reply but is not expanded into the tree view.
   1. This should select the root post of the thread and display it in the post reading pane
   2. The thread should not expand into the tree view.
10. Expand a different thread into the tree view.
11. Click on the subject column of thread.
    1. This should select the root post of the thread and display the post’s text in the post reading pane
    2. The thread should remain expanded into the tree view. It should not collapse.
12. Click on the Subject column header.
    1. This should sort the threads into ascending order by their subject
13. Click on the Subject column header again and observer that the threads are sorted in descending order.
14. Repeat for the Author, Modified Date, and Created Date column headers
15. Exit from the Forums Client application

### Searching for threads

Verify that the user can search for threads by title when not logged on to the server.

1. Start ForumsClient.exe
2. Cancel the Live ID logon dialog
3. Click on the forum you want to use for this test.
4. Identify a character string that appears in the subject line of at least one thread. The string does not have to represent an entire word but may represent a phrase of multiple words and white space if you like.
5. Type the string you want to search for into the Search text box
6. Click the magnifying glass icon next to the Search text box
   1. This should display at least the thread you used to select the search string.
   2. It should also display a red X icon next to the magnifying glass icon.
7. Verify that all threads shown have the string in their subject. The search is case insensitive but white space matters. If you type “as “ as the search string, the search will not match “pass” but will make “pass “.
8. Modify the search string to be more restrictive. If you had multiple results from the first search, change the search string so that it should eliminate some but not all of them. For example, if you searched for “open”, you could change the search string to be “open file” if one of the threads had that phrase in the title.
9. Click the magnifying glass icon next to the Search text box
10. Verify that the threads displayed have the revised string in their subject.
11. Modify the search string in a way that should eliminate all threads. For example, if you searched for “open”, append 3 X’s to the string so that you search for “openXXX”.
12. Click the magnifying glass icon next to the Search text box
13. Verify that no threads are displayed
14. Click the red X icon next to the magnifying glass icon and verify that
    1. all threads for the forum are now displayed
    2. the red X icon is no longer visible
    3. the search string has be removed from the Search text box
15. Exit from the Forums Client application

### Filtering threads

Verify that the user can filter threads by type or status when not logged on to the server.

1. Start ForumsClient.exe
2. Cancel the Live ID logon dialog
3. Click on the forum you want to use for this test.
4. Click on the expander icon to the right of the Search text box
   1. The expander icon should change state and be displayed as a collapse.
   2. A set of filter buttons and combo boxes should be displayed between the forum title and the grid displaying the forums threads. The filters inlude
      1. No Replies button – which should toggle the display between showing only threads with no replies and all threads.
      2. Helpful button - which should toggle the display between showing only threads marked as helpful and all threads.
      3. A combo box with a list allowing you to select
         1. All
         2. Answered question threads
         3. Unanswered question threads
         4. Threads which have proposed answers
         5. General Discussion threads
5. Click the No Replies button
6. Verify that only threads with no replies are displayed
7. Click the No Replies button again
8. Verify that all threads are displayed
9. Click the Helpful button
10. If your forum has no hreads that have been marked as helpful, you will see an empty thread grid. However, most active forums will have at least one helpful thread.
11. Click the Helpful button
12. Verify that all threads are displayed
13. Select an entry from the combo box
14. Verify that all threads displayed are of the type and status you selected.
15. Repeat for all choices in the combo box
16. Verify that the combo box and buttons work in combination
    1. Select Show All in the combo box
    2. Click the No Replies button
    3. In an active forum, you will probably see both question and discussion threads in the grid.
    4. Select General Discussion in the combo box
    5. The grid should only show discussion threads with no replies
    6. Select Unanswered in the combo box
    7. The grid should only unanswered question threads with no replies
    8. Select Answered in the combo box
    9. The grid should show no threads. It’s rare if not impossible to have a question answered with no replies.
    10. Click the No Replies button again
    11. Select Show All in the combo box
    12. Click the Helpful button
    13. Select General Discussion, Answered, and Unanswered in the combo box in turn and verify that only appropriate threads are displayed
17. Exit from the Forums Client application

# Running tests

The unit tests are run through NUnit by calling nunit.exe or nunit-console.exe with the path to the unit tests dll (e.g. “<Path to MSDN Forums Client solution>\<*Solution*>\<UnitTest>\bin\<configuration>\<UnitTest>.dll”). It is advisable to use the quotes around the path to the DLL in case there are blanks in the path.

# Release Criteria

Prior to its release by the Developer Community Labsengineering team, the MSDN Forums Client must meet the following criteria:

|  |  |  |
| --- | --- | --- |
| **Release Criteria** | Succeed | Fail |
| * 1. **Does the project define the Debug, Release, FxCop-Debug, and FxCop-Release configurations?** | **Yes** | **No** |
| * 1. **Does the project build without errors or warnings under all defined configurations?** | **Yes** | **No** |
| * 1. **Were satisfactory code reviews held?** | **Yes** | **No** |
| * 1. **Does the combination of all automated and manual test suites test for all functional requirements?** | **Yes** | **No** |
| * 1. **Do all automated unit tests pass?** | **Yes** | **No** |
| * 1. **Do 90% of the functional tests pass?** | **Yes** | **No** |
| * 1. **Do 85% of tests added to achieve code coverage goals pass?** | **Yes** | **No** |
| * 1. **Do the unit tests achieve at least 50% code coverage?** | **Yes** | **No** |
| * 1. **Do the test suites achieve at least 80% code coverage?** | **Yes** | **No** |
| * 1. **Have all bugs critical to basic function been fixed?** | **Yes** | **No** |
| * 1. **Are all bugs & feature requests posted on CodePlex?** | **Yes** | **No** |
| * 1. **Have unfixed bugs been triaged and either marked as future work items or closed as being rejected as work items?** | **Yes** | **No** |

# Change History

|  |  |  |
| --- | --- | --- |
| **Change** | **Changed By** | **Date** |
|  |  |  |