



TEST SPECIFICATION PLAN

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Table of Contents

1.	INTRODUCTION	3
1.1	Purpose	3
1.2	Goals & Objectives	3
1.3	Scope	3
1.4	Constraints	4
1.4.1	Time	4
1.4.2	Staff	4
1.4.3	User	4
2.	TESTING STRATEGY & POINTS	4
2.1	Server Testing	5
2.2	Integration Testing	5
2.3	Web Interface Testing	5
3.	TESTING PROCEDURE and SCENARIOS	6
3.1	SMTP Server Testing	6
3.2	NNTP Server Testing	8
3.3	NNTP-SMTP Event Handler Testing	9
3.4	Web Interface Testing	9
3.4.1	News Interface Testing	9
3.4.2	WebMail Interface Testing	10
3.4.3	RSS Service Testing	11
3.4.4	Settings and Profile Interface Testing	11
3.5	Performance Testing	12
4.	SCHEDULE	13

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1.INTRODUCTION

1.1 Purpose

This document is released by ThykeTech Software in order to ensure that Xchanger is released after a full testing period. To achieve this, testing period is divided into some milestones and some techniques are defined to make this testing period efficient.

Software developers of ThykeTech can find related information of testing period in this document about below points:

- Constraint of Testing
- Strategy of Testing
- Procedure of Testing
- Scheduling of Testing

It is assumed that after applying testing period precisely Xchanger is going to have fewer bugs! (Or should we say zero?!)

1.2 Goals & Objectives

The ultimate goal of the test specification is to ensure that the final product, namely Xchanger, is as reliable as it could be and to make sure that as much requirements as possible are met.

Therefore a testing specifications report is written in order to make it easy for developers. All developers shall obey the rules specified in this document to make testing period short and easy.

After final release of Xchanger, developers should say that the most important property of Xchanger is that it works properly. Main idea here is this.

1.3 Scope

This test specifications document include below points of testing period:

- Reasons of Testing
- Constraints of Testing
- The way of Testing Modules
- The way of Testing Integration of Modules
- The way of Testing Web Interface of Xchanger
- Test Scenarios of Each Module
- Schedule of Testing Period

1.4 Constraints

Constraints that might limit testing period are listed below:

1.4.1 Time

Possibly time is the most important one among listed constraints. The time between first and final releases of Xchanger is less than 1 month so time limit for testing is critical. Test begins just after first release and ends with final release which is on 11th June, 2007. Testing and development period must be parallel.

1.4.2 Staff

The only critical point here is that a staff shall develop and test Xchanger at the same period of time due to limited time as stated above. ThykeTech has 4 people all of which is software analyst, developer and tester.

1.4.3 User

Xchanger has a membership system for its users and in order to test Xchanger efficiently and properly several users who are using XChanger must be present. This point should be fixed as much as possible.

2.TESTING STRATEGY & POINTS

XChanger consists of several modules which are SMTP server, NNTP server, NNTP-SMTP Event Handler and Web Interface. Scheduling of implementation of these modules is explained in Living Schedule in detail. Testing strategy of XChanger is formed upon these modules. Each module should be tested separately first and then testing of the system should be done.

Module testing is applied as white-box testing. Each module must be tested by its own developer(s).

Below important points of each module are mentioned. Tester must especially pay attention to these points.

2.1 Server Testing

SMTP and NNTP servers are at the heart of XChanger. Therefore, these servers must run properly and efficiently.

Servers are tested by their developers. Each server must meet universal requirements of its own class, for instance SMTP server must run parallel with other SMTP servers.

Some important points that servers must meet are listed below:

- ✓ Universal MIME specifications,
- ✓ Application which is running always, i.e. Windows Service Application
- ✓ Handling sessions accurately,
- ✓ Connection to XChanger Database properly,
- ✓ Leaving database consistent,
- ✓ Log operations correctly,
- ✓ Performing file operations accurately (attachments and MIME files),
- ✓ Performing an efficient algorithm for handling connections,
- ✓ Running accurately,
- ✓ Meeting XChanger's own specifications, some of which are read-only news groups, mail-lists, RSS specifications etc.

2.2 Integration Testing

XChanger combine these servers and these two servers act as a single server because they operate on same data store simultaneously.

Therefore, after implementing servers separately, core of XChanger, called SMTP-NNTP Event Handler, is implemented. The core must be tested from several aspects:

- ✓ It must run always as Windows Service application.
- ✓ It must use same data store (database and data files) with SMTP and NNTP servers.
- ✓ It must handle news and mail options of users accurately.
- ✓ It must leave database consistent.
- ✓ It must run accurately.

2.3 Web Interface Testing

Web Interface of XChanger is a complicated one and testing interface method is white-box testing. Mail, News, RSS and Settings interfaces are tested separately.

Mail Interface must supply:

- ✓ Reading, Composing and Replying e-mails,
- ✓ Listing, deleting e-mails,
- ✓ Archiving & deleting e-mails,
- ✓ Some other operations on e-mails (marking as read, moving to a folder etc.),
- ✓ Creating new personal folders

News Interface must supply:

- ✓ Reading, composing, replying messages,
- ✓ Listing messages

RSS Interface must supply:

- ✓ Reading RSS feeds,

Settings Interface must supply:

- ✓ Editing personal information,
- ✓ Subscribing to/Unsubscribing from news groups,
- ✓ Editing mail settings,
- ✓ Editing options of a user (mail-news options)

As mentioned before, all modules are tested by its own developer with white-box technique. Above points are important points to which developers must test after developing the module. Detailed test scenarios are declared in "3. Testing Procedure" part of document.

3.TESTING PROCEDURE and SCENARIOS

Under this title, testers find the way how they are going to test each module of XChanger. Scenarios are described module by module.

3.1 SMTP Server Testing

Tester must be sure that SMTP server of XChanger is a universal SMTP server which works in harmony with other SMTP servers. It is required before the testing that specifications for SMTP server are known well by tester.

Scenario-1 for SMTP server:

- i. Run server in debug mode.
- ii. Set options of MS Outlook according to the server.

- iii. Prepare an e-mail with no attachments and with an Html-text body.
- iv. Set 'To' field of e-mail to an address of XChanger, like 'ali@xchanger.com'.
- v. Send this e-mail.
- vi. While debugging server, catch this e-mail and let server process that e-mail.

Scenario-2 for SMTP server:

- i. Run server in debug mode.
- ii. Set options of MS Outlook according to the server.
- iii. Prepare an e-mail with at least two attachments and with an Html-text body.
- iv. Set 'To' field of e-mail to two addresses of XChanger, like 'ali@xchanger.com, veli@xchanger.com'.
- v. Send this e-mail.
- vi. While debugging server, catch this e-mail and let server process that e-mail.

Scenario-3 for SMTP server:

- i. Run server in debug mode.
- ii. Set options of MS Outlook according to the server.
- iii. Prepare an e-mail with at least two attachments and with an Html-text body.
- iv. Set 'To' field of e-mail to an address of XChanger Mail-list, like 'ali@xchanger-list.com'.
- v. Send this e-mail.
- vi. While debugging server, catch this e-mail and let server process that e-mail.

Scenario-4 for SMTP-POP3 server:

- i. Run server in debug mode.
- ii. Set options of MS Outlook according to the server.
- iii. Get e-mails in your inbox.
- iv. Select one of these e-mails and read it.
- v. Then, delete that e-mail.
- vi. Again, return to your inbox.
- vii. Select another e-mail and read it.
- viii. After reading that e-mail, reply it. (After this point, tester should go to scenario 1 or 2.)

Scenario-4 for SMTP server:

Repeat scenarios 1 and 2 with an e-mail address of another mail provider such as yahoo, Google. Be sure that e-mail reached successfully its destination.

3.2 NNTP Server Testing

Tester must be sure that NNTP server of XChanger is a universal NNTP server which meets standards of NNTP servers. It is required before the testing that specifications for NNTP server are known well by tester.

Scenario-1 for NNTP server:

- i. Run server in debug mode.
- ii. Set options of 'Mozilla Thunderbird' or 'MS Outlook Express' according to the server.
- iii. Try to get the list of news groups without authentication.
- iv. Observe the server.

Notice: After this scenario, other scenarios assume that authentication is done successfully.

Scenario-2 for NNTP server:

- i. Run server in debug mode.
- ii. Set options of 'Mozilla Thunderbird' or 'MS Outlook Express' according to the server.
- iii. Get news groups of XChanger.
- iv. Subscribe to one of these groups.
- v. Download articles of the group.
- vi. Read one of them.
- vii. If there is an attachment, download that attachment(s).
- viii. Reply to that article with attachments and without attachment.
- ix. Observe the server of XChanger and re-download articles of that group and see your reply.

Scenario-3 for NNTP server:

- i. Run server in debug mode.
- ii. Set options of 'Mozilla Thunderbird' or 'MS Outlook Express' according to the server.
- iii. Get news groups of XChanger.
- iv. Subscribe to one of these groups.
- v. Download articles of the group.
- vi. Start a new thread in that group.
- vii. Observe the server of XChanger and re-download articles of that group and see your thread.

Scenario-4 for NNTP server:

- i. Run server in debug mode.

- ii. Set options of 'Mozilla Thunderbird' or 'MS Outlook Express' according to the server.
- iii. Get news groups of XChanger.
- iv. Subscribe to one of read-only groups.
- v. Download articles of the group.
- vi. Read one of them.
- vii. Try to write a reply this article.
- viii. Observe the server of XChanger for rejecting of write on that group.

3.3 NNTP-SMTP Event Handler Testing

Notice: Tester needs web interface for test scenarios in this title. Therefore, it is assumed that web interface is working well for options for event handler.

Scenario for Event-Handle:

- i. Set a time option for some news groups.
- ii. Send an article to those above groups.
- iii. When that time comes, check your inbox either by Mozilla Thunderbird or webmail of XChanger.

3.4 Web Interface Testing

Web interface testing consists of test of some sub-modules:

3.4.1 News Interface Testing

Scenario-1 for News Interface:

- i. See your subscribed news groups on the left.
- ii. Click one of these groups.
- iii. Get list of articles.
- iv. Select one of these articles and read it.
- v. If there is attachment(s), download attachments(s).
- vi. Compose a reply to this article with at least two attachments.
- vii. See your reply in the list of articles.

Scenario-2 for News Interface:

- i. See your subscribed news groups on the left.
- ii. Click one of read-only groups.
- iii. Get list of articles.
- iv. Select one of these articles and read it.

- v. If there is attachment(s), download attachments(s).
- vi. Try to compose a reply to this article with at least two attachments.
- vii. Observe the process.

Scenario-3 for News Interface:

- i. See your subscribed news groups on the left.
- ii. Click one of these groups.
- iii. Get list of articles.
- iv. Click to start a new thread and write your first article.

3.4.2 WebMail Interface Testing

Scenario-1 for WebMail Interface:

- i. Go to your inbox.
- ii. See your e-mails and select one of these e-mails.
- iii. Read and if there is attachment(s), download attachment(s).
- iv. Then, click to reply this e-mail.
- v. Write your e-mail with at least two attachment(s) and click to send.
- vi. See that e-mail in your outbox.

Scenario-2 for WebMail Interface:

- i. Go to your inbox.
- ii. See your e-mails and select one of these e-mails.
- iii. Read and if there is attachment(s), download attachment(s).
- iv. Then, click to forward this e-mail with new e-mail addresses.
- v. Write your e-mail and click to send.
- vi. See that e-mail in your outbox.

Scenario-3 for WebMail Interface:

- i. Go to your inbox.
- ii. Select some of your e-mails with checkboxes near to that e-mails.
- iii. Delete these e-mails.
- iv. See your new inbox.
- v. Again select some your e-mails with checkboxes near to that e-mails.
- vi. Move these e-mails to trash.
- vii. See your inbox again.
- viii. Again select some your e-mails with checkboxes near to that e-mails.
- ix. Move these e-mails to a personal folder.
- x. See that folder to be sure that operation is successful.
- xi. Again select some your unread e-mails with checkboxes near to that e-mails.

- xii. Mark them as read.
- xiii. See your inbox again.

Scenario-4 for WebMail Interface:

- i. Go to your inbox.
- ii. Select some of your e-mails with checkboxes near to that e-mails.
- iii. Click '**archive & delete**' button to create a ZIP archive of your e-mails.
- iv. Download that archive to your computer.
- v. Open your ZIP archive and see your e-mails in html format.
- vi. See your inbox again.

3.4.3 RSS Service Testing

Scenario-1 for RSS Service Interface:

- i. Go to your RSS reader interface
- ii. Select one of your favorite Rss feeds registered before.
- iii. Get the selected Rss feed.

Scenario-2 for RSS Service:

- i. Open another RSS reader program.
- ii. Enter the address of XChanger RSS service.
- iii. Get your RSS feed from XChanger.

Notice: Repeat above scenario with at least two different news group.

3.4.4 Settings and Profile Interface Testing

Scenario-1 for Settings Interface:

- i. Go to your settings page.
- ii. Select 'personal' field.
- iii. See your information.
- iv. Changer your password.
- v. Log out from the system and log in again with your new password.

Scenario-2 for Settings Interface:

- i. Go to your settings page.
- ii. Select 'news' field.
- iii. See the list of news groups and your subscribed groups.
- iv. Unsubscribe from some of those and subscribe to new groups.

- v. Now, go to 'News' module of XChanger and see your new groups.

Scenario-3 for Settings Interface:

- i. Go to your settings page.
- ii. Select 'delivering' field.
- iii. See your current options for delivering mails and articles.
- iv. Do a changing in your options.
- v. Test that these options work correct.
- vi. Go to step iv but this time with a different change and repeat test procedure.

3.5 Performance Testing

XChanger is going to have performance tests of SMTP and NNTP servers. After each server is tested singly, servers are tested in a perspective of performance.

For SMTP server, 4-5 clients are going to connect to server and send and receive e-mails. Server should give responses to all these clients very fast. Since there will be time and staff constraints in testing, small number of clients are going to request operation (4-5 as mentioned).

As in SMTP, NNTP server of XChanger is going to be tested in a perspective of performance. Same above procedure as it is in SMTP is followed for testing.

4.SCHEDULE

Module	Tester	Start Date	End Date
SMTP Server	Tolga	20th May	7th June
NNTP Server	Burak	20th May	7th June
Event-Handler	Burak-Kaya	20th May	7th June
News Interface	Kaya	20th May	7th June
RSS Service	Kaya-Fuat	20th May	7th June
Settings Interface	Tolga-Kaya	20th May	7th June
Mail Interface	Fuat	20th May	7th June

Notice: Since final release of XChanger is aimed to be released on 11th June, above dates includes not only the dates during which tests are done but also the dates during which feedback of tests are collected and evaluated. **Please**, keep in mind that point.