

MS-ASDOC Test Suite Specification

**Abstract:** This document provides information about how to configure the test suite and how the MS-ASDOC test suite is designed to test the MS-ASDOC Open Specification usability and accuracy. It describes test assumptions, scope and constraints of the test suite. It also specifies test scenarios, detailed test cases, test suite architecture and adapter design.

Contents

[1 Configuring the test suite 3](#_Toc387411778)

[1.1 Configuring the test suite client 3](#_Toc387411779)

[1.1.1 Configuring the test suite client manually 3](#_Toc387411780)

[1.1.2 Configuring the test suite client by scripts 3](#_Toc387411781)

[1.2 Configuring the system under test (SUT) 3](#_Toc387411782)

[1.2.1 Configuring the SUT manually 3](#_Toc387411783)

[1.2.2 Configuring the SUT by scripts 3](#_Toc387411784)

[1.3 Configuring the SHOULD/MAY requirements 3](#_Toc387411785)

[2 Test suite design 5](#_Toc387411786)

[2.1 Assumptions, scope and constraints 5](#_Toc387411787)

[2.2 Test suite architecture 5](#_Toc387411788)

[2.3 Technical dependencies and considerations 7](#_Toc387411789)

[2.4 Adapter design 7](#_Toc387411790)

[2.4.1 Adapter overview 7](#_Toc387411791)

[2.4.2 Technical feasibility of adapter approach 7](#_Toc387411792)

[2.4.3 Adapter abstract layer 8](#_Toc387411793)

[2.4.4 Adapter details 8](#_Toc387411794)

[2.5 Test scenarios 10](#_Toc387411795)

[2.5.1 S01\_SearchCommand 10](#_Toc387411796)

[2.5.2 S02\_ItemOperationsCommand 10](#_Toc387411797)

[2.6 Test case design 11](#_Toc387411798)

[2.6.1 Traditional test case design 11](#_Toc387411799)

[2.6.2 Test case description 11](#_Toc387411800)

# Configuring the test suite

## Configuring the test suite client

### Configuring the test suite client manually

Before you run the test suite, update the values in the MS-ASDOC\_TestSuite.deployment.ptfconfig file. The MS-ASDOC\_TestSuite.deployment.ptfconfig file can also be configured by running the client setup script.

1. Open MS-ASDOC\TestSuite\MS-ASDOC\_TestSuite.deployment.ptfconfig.
2. Update the following value to specify the common configuration file.

Property name="CommonConfigurationFileName" value="ExchangeCommonConfiguration.deployment.ptfconfig"

**Note**   This property can be removed or set to empty if the required properties are copied to the test suite specific configuration file. Any other changes to this property will cause all test cases in the test suite to fail during execution. The test suite searches through its specific configuration file and uses those properties, if they are defined, before looking for them in the common configuration file (if specified).

1. Update the following properties’ values to match SUT settings and configuration.

* Property name="UserName" value="MSASDOC\_User01"
* Property name="UserPassword" value="Password01!"
* Property name="SharedFolder" value="\\[SutComputerName]\MSASDOC\_SharedFolder"
* Property name="SharedHiddenDocument" value="[SharedFolder]\MSASDOC\_HiddenDocument.txt"
* Property name="SharedVisibleDocument" value="[SharedFolder]\MSASDOC\_VisibleDocument.txt"
* Property name="SharedHiddenFolder" value="[SharedFolder]\MSASDOC\_HiddenFolder"
* Property name="SharedVisibleFolder" value="[SharedFolder]\MSASDOC\_VisibleFolder"

### Configuring the test suite client by scripts

To configure the test suite client using scripts, see section 5.2.1 of the [ExchangeEASTestSuiteDeploymentGuide.docx](../ExchangeEASTestSuiteDeploymentGuide.docx).

## Configuring the system under test (SUT)

### Configuring the SUT manually

To manually configure the SUT, see section 5.1.2 of the [ExchangeEASTestSuiteDeploymentGuide.docx](../ExchangeEASTestSuiteDeploymentGuide.docx).

### Configuring the SUT by scripts

To configure the SUT using scripts, see section 5.1.1 of the [ExchangeEASTestSuiteDeploymentGuide.docx](../ExchangeEASTestSuiteDeploymentGuide.docx).

## Configuring the SHOULD/MAY requirements

There are no SHOULD/MAY requirements in MS-ASDOC test suite.

# Test suite design

## Assumptions, scope and constraints

Assumptions

* This test suite assumes that there is a shared folder on the server.
* This test suite assumes that there is a hidden folder and a visible folder under the shared folder.
* This test suite assumes that there is a hidden document and a visible document under the shared folder.

Scope

In scope

* This test suite will verify the accuracy and integrity of the technical content in the Open Specification against the results returned from the protocol server by using two commands: ItemOperations and Search.
* This test suite will verify all the XML schema elements embedded inside of the command response.
* This test suite will verify the server-side and testable requirements by running all test cases on both HTTP and HTTPS.
* This test suite will verify requirements from Exchange ActiveSync: Data Types ([MS-ASDTYPE]) and Exchange ActiveSync: WAP Binary XML Algorithm ([MS-ASWBXML]).

Out of scope

* This test suite will not verify the requirements related to client behaviors.
* This test suite will not verify the requirements related to server internal behaviors.
* This test suite will not verify the internal implementations of its transport protocol stack.

Constraints

None.

## Test suite architecture

This test suite verifies the server-side and testable requirements obtained from the Open Specification. The following figure shows the architecture of this test suite.



The architecture of the test suite

The details of the MS-ASDOC test suite architecture

* SUT hosts the folder and document access service which this test suite runs against.
* From third-party user’s point of view, the SUT is the protocol server implementation.
* The following products have been tested with the MS-ASDOC test suite on the Windows platform.
* Microsoft Exchange Server 2007 Service Pack 3 (SP3)
* Microsoft Exchange Server 2010 Service Pack 3 (SP3)
* Microsoft Exchange Server 2013 Service Pack 1 (SP1)
* The test suite acts as the client to communicate with the SUT and validates the requirements gathered from the MS-ASDOC Open Specification.
* Test cases use the MS-ASDOC protocol adapter to call and get the results of the MS-ASDOC commands.
* MS-ASDOC protocol adapter is used in the test cases. The test cases call the methods in the interfaces to invoke the commands used in the protocol adapter.
* MS-ASDOC protocol adapter uses ActiveSyncClient to send command request and retrieve command response.
* ActiveSyncClient encodes and decodes Search command and ItemOperations command defined in [MS-ASCMD] by using MS-ASWBXML and communicates with the SUT via MS-ASHTTP.

## Technical dependencies and considerations

Dependencies

* This test suite depends on HTTP protocol or HTTPS protocol to transmit the messages.
* This test suite depends on Protocol Test Framework (PTF) to derive managed adapter.
* This test suite depends on MS-ASWBXML to encode XMLrequest bodies into WBXML for transmission to an ActiveSync server.
* This test suite depends on MS-ASHTTP to synchronize data which is stored on the server.
* This test suite depends on the xsd.exe tool in the .NET Framework SDK to generate structures used in the MS-ASDOC request and response.

Encryption consideration

* Transportation of MS-ASDOC includes HTTP and HTTPS, and encryption will be handled by HTTPS.

## Adapter design

### Adapter overview

One protocol adapter is used in this test suite.

Protocol adapter

* MS-ASDOC protocol adapter
* The MS-ASDOC adapter is a managed adapter, which is derived from the ManagedAdapterBase class in PTF.
* The MS-ASDOC adapter has the following functionalities
* Choose HTTP or HTTPS for transport;
* Construct requests of two MS-ASDOC commands;
* Communicate with the SUT by sending requests to the SUT and receiving the corresponding responses from the SUT;
* Parse the response messages and validate the messages according to the XML schema.

### Technical feasibility of adapter approach

Message generation

The MS-ASDOC adapter gets the parameter values and calls the corresponding commands in ActiveSyncClient. The ActiveSyncClient serializes the parameter values to XML elements, and then encodes request bodies into WBXML for transmission to an ActiveSync server.

Message consumption

The command messages received from the SUT will be parsed in the ActiveSyncClient and be passed to the MS-ASDOC adapter. The messages are then consumed in the MS-ASDOC adapter to validate the message format and to validate the logic-related requirements in the test cases.

### Adapter abstract layer

Protocol adapter

MS-ASDOC adapter interface

There are two methods declared in the MS-ASDOC adapter interface IMS\_ASDOCAdapter.

These methods correspond to the two MS-ASDOC commands: ItemOperations and Search.

The methods are described in the following table.

|  |  |  |
| --- | --- | --- |
| **No.** | **Method** | **Description** |
| 1 | ItemOperations | This method is used to retrieve data for one or more individual documents. |
| 2 | Search | This method is used to find entries in document library. |

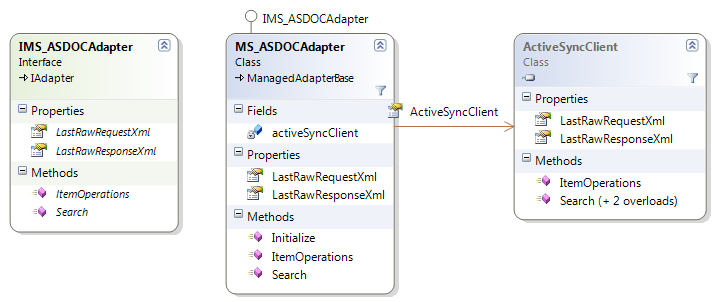
MS-ASDOC adapter interface methods

### Adapter details

#### Protocol adapter

##### MS-ASDOC protocol adapter

The following figure shows the class diagram of the MS-ASDOC protocol adapter and the relationship between MS\_ASDOCAdapter and ActiveSyncClient.



MS-ASDOC adapter and ActiveSyncClient class diagram

The following outlines details of the class diagrams:

Adapter interface

* IMS\_ASDOCAdapter is the interface of the protocol adapter.
* IMS\_ASDOCAdapter defines the methods invoked by test cases, including ItemOperations and Search methods.

Adapter implementation

* MS\_ASDOCAdapter is the protocol adapter class of the test suite. It is used to implement IMS\_ASDOCAdapter.
* MS\_ASDOCAdapter invokes the ItemOperations method defined in ActiveSyncClient to retrieve data for one or more individual documents, and invokes Search method defined in ActiveSyncClient to find entries in document library.
* The initialize method is used to initialize an instance of ActiveSyncClient.
* The two properties LastRawRequestXml and LastRawResponseXml are used to get the raw request and response xml data.

## Test scenarios

Two scenarios are designed to cover server-side, testable requirements in the MS-ASDOC test suite. The details of the scenarios are as follows.

|  |  |
| --- | --- |
| Scenario | Description |
| S01\_SearchCommand | Retrieve Document class items that match the criteria specified by the client through the Search command messages. |
| S02\_ItemOperationsCommand | Retrieve data from the server for one or more individual documents through ItemOperations command messages. |

MS-ASDOC scenarios

### S01\_SearchCommand

Description

Retrieve Document class items that match the criteria specified by the client through the Search command messages.

Commands

* Search

Prerequisites

* Shared folders and documents have been created in server.

### S02\_ItemOperationsCommand

Description

Retrieve data from the server for one or more individual documents through ItemOperations command messages.

Commands

* ItemOperations

Prerequisites

* Shared folders and documents have been created in server.

## Test case design

### Traditional test case design

Traditional testing is adopted as the test approach for this test suite. The test cases are designed to cover the server-side and testable requirements.

There are nine traditional test cases designed to cover the two scenarios mentioned in section [2.6 Test scenarios](#_Test_scenarios). Details of traditional test cases are specified in [section 2.7.2 Test case description](#_Test_Cases_Description). The scenarios distributions of the test cases are listed in the following table.

|  |  |
| --- | --- |
| Scenario ID | Test case name |
| S01\_SearchCommand | MSASDOC\_S01\_TC01\_SearchCommand\_VisibleFolderWithLinkId |
| MSASDOC\_S01\_TC02\_SearchCommand\_HiddenFolderWithLinkId |
| MSASDOC\_S01\_TC03\_SearchCommand\_WithoutLinkId |
| MSASDOC\_S01\_TC04\_SearchCommand\_GetZeroOrMoreDocumentClass |
| MSASDOC\_S01\_TC05\_SearchCommand\_VisibleDocument |
| MSASDOC\_S01\_TC06\_SearchCommand\_HiddenDocument |
| S02\_ItemOperationsCommand | MSASDOC\_S02\_TC01\_ItemOperations\_WithoutMultipart |
| MSASDOC\_S02\_TC02\_ItemOperations\_GetZeroOrMoreDocumentClass |
| MSASDOC\_S02\_TC03\_ItemOperations\_WithMultipart |

Test case scenario distribution

### Test case description

The following table describes the common prerequisites for all the test cases.

|  |  |
| --- | --- |
| Common prerequisites | Uses HTTP or HTTPS as the transport. |

Test case common prerequisites

The steps in the following test cases use methods and parameters in the adapter interfaces directly.

The following tables describe the traditional test cases.

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC01\_SearchCommand\_VisibleFolderWithLinkId |
| Description | This test case is designed to verify server behavior when using Search command to search a visible folder with LinkId. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to retrieve document class items of a visible folder with LinkId. |
| Cleanup | N/A |

MSASDOC\_S01\_TC01\_SearchCommand\_VisibleFolderWithLinkId

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC02\_SearchCommand\_HiddenFolderWithLinkId |
| Description | This test case is designed to verify server behavior when using Search command to search a hidden folder with LinkId. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to retrieve document class items of a hidden folder with LinkId. |
| Cleanup | N/A |

MSASDOC\_S01\_TC02\_SearchCommand\_HiddenFolderWithLinkId

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC03\_SearchCommand\_WithoutLinkId |
| Description | This test case is designed to verify server behavior when using Search command to retrieve data of a document without LinkId. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to retrieve document class items without LinkId. |
| Cleanup | N/A |

MSASDOC\_S01\_TC03\_SearchCommand\_WithoutLinkId

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC04\_SearchCommand\_GetZeroOrMoreDocumentClass |
| Description | This test case is designed to verify server behavior when using Search command to retrieve data of zero or more documents. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to get the document class value of a folder that doesn’t exist. 2. Client calls Search command to get document calss value of a shared folder which is the root folder. |
| Cleanup | N/A |

MSASDOC\_S01\_TC04\_SearchCommand\_GetZeroOrMoreDocumentClass

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC05\_SearchCommand\_VisibleDocument |
| Description | This test case is designed to verify server behavior when using Search command to search a visible document. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to get the document class value of a shared visible document. |
| Cleanup | N/A |

MSASDOC\_S01\_TC05\_SearchCommand\_VisibleDocument

|  |  |
| --- | --- |
| S01\_SearchCommand | |
| Test case ID | MSASDOC\_S01\_TC06\_SearchCommand\_HiddenDocument |
| Description | This test case is designed to verify server behavior when using Search command to search a Hidden document. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls Search to get the document class value of a shared hidden document. |
| Cleanup | N/A |

MSASDOC\_S01\_TC06\_SearchCommand\_HiddenDocument

|  |  |
| --- | --- |
| S02\_ItemOperationsCommand | |
| Test case ID | MSASDOC\_S02\_TC01\_ItemOperations\_WithoutMultipart |
| Description | This test case is designed to verify server behavior when using ItemOperations to retrieve document data without multipart header. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls ItemOperations without MS-ASAcceptMultiPart: T header to get the data of a shared visible document. |
| Cleanup | N/A |

MSASDOC\_S02\_TC01\_ItemOperations\_WithoutMultipart

|  |  |
| --- | --- |
| S02\_ItemOperationsCommand | |
| Test case ID | MSASDOC\_S02\_TC02\_ItemOperations\_GetZeroOrMoreDocumentClass |
| Description | This test case is designed to verify server behavior when using ItemOperations to retrieve data of zero or more documents. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls ItemOperations to get the data of a non-existent document under a shared folder. 2. The client calls ItemOperations to get the data of a shared visible document and a shared hidden document. |
| Cleanup | N/A |

MSASDOC\_S02\_TC02\_ItemOperations\_GetZeroOrMoreDocumentClass

|  |  |
| --- | --- |
| S02\_ItemOperationsCommand | |
| Test case ID | MSASDOC\_S02\_TC03\_ItemOperations\_WithMultipart |
| Description | This test case is designed to verify server behavior when using ItemOperations to retrieve document data with multipart header. |
| Prerequisites | Common prerequisites |
| Test execution steps | 1. The client calls ItemOperations with MS-ASAcceptMultiPart: T header to get the data of a shared visible document. |
| Cleanup | N/A |

**MSASDOC\_S02\_TC03\_ItemOperations\_WithMultipart**