

Joint Tactical Networking Center Test and Evaluation Laboratory

Software Communications Architecture v2.2.2 Manual Application Software Test Description v2.3A

Appendix D: SCA Extension Requirements Test Procedures

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APPENDIX D SCA EXTENSION REQUIREMENTS TEST CASES

This Appendix contains the test case procedures for the SCA Extension requirements. The test cases include the test case name, test objective, preconditions, parameters, test description, the name of the related automated test name (if relevant), and the test requirement(s) being tested.

The Manual Test Steps table contains the test description as the section ‘headers’ followed by the more detailed manual test steps. The test description provides ‘what’ is being tested – not the ‘how’. Each table row contains the steps of what the tester needs to do (such as examine, verify, locate, etc.). The five columns of the table seen in the manual test steps are Steps, Expected Results, Actual Results, Comments and Test Results.

1. **Column 1 (Steps)** – Contains what the tester is to do to verify the requirement(s).
2. **Column 2 (Expected Results)** – Contains the expected consequence that results from the action of the first column.
3. **Column 3 (Actual Results)** – Provides the location where the tester can record the results when Column 1 is performed. When the tester needs additional space to record test results, they can use the Test Recording Log, explained below.
4. **Column 4 (Comments)** – Contains any additional information to aid the tester in the running of the test.
5. **Column 5 (Test Result)** - Provides the location where the tester records the results of the manual steps. The results would be Pass, Fail, Untested or N/A.

The definitions for the various test results are as follows:

- **N/A:** The requirement is not applicable to this component.
- **Untested:** The test could not be completed because required information is missing. If the test is a final test and the developer cannot provide the missing information this becomes a failure.
- **Fail:** The expected results of a step were not met.
- **Pass:** The expected results were met. This step passes. If it is the last step for a requirement and all the steps for that requirement passed then the requirement passes.

To aid in the execution of the test and provide test artifacts, each test case has a Test Recording Log used to record test information. In addition to being used as a test artifact, the Test Recording Log is useful for providing verification of test results. This Test Recording Log is also very helpful when there are many items that must be verified by the tester. For example, if a manual step requires the tester to locate several properties files (PRF) then, the tester can write down the names of all the files used in the test.

At the end of each test case, there is a summary page listing each requirement that was verified through the course of the test case. The tester is encouraged to provide the results of each requirement, which will serve as a quick summary of the status for each requirement. This is also where the participants of the test will sign their names and indicate the date that the test was run.

To perform a test of an application, record the names of the operating system (OS), the operating environment (OE), the CORBA Object Request Broker (ORB), the Core Framework (CF) and, the application.

OS	_____
OE	_____
ORB	_____
CF	_____
Application	_____

D.1 APP_TC_051 – SCA Extension Domain Profile

Test Case Number: APP_TC_051

Domain Profile for SCA Extensions

Requirements

SCA v2.2.2 Tag	SCA v2.2.2 Text
AP0588	Domain Profile files shall be compliant to the <i>Document Type Definitions</i> (DTDs) provided in Appendix D.
AP0590	All XML files shall have as the first two lines as an <i>XML declaration</i> (?xml) and a <i>document type declaration</i> (!DOCTYPE).
AP0591	A <i>Software Package Descriptor</i> file shall have a “.spd.xml” extension.
AP0592	A <i>Software Component Descriptor</i> file shall have a “.scd.xml” extension.
AP0593	A <i>Software Assembly Descriptor</i> file shall have a “.sad.xml” extension.
AP0594	A <i>Properties</i> File shall have a “.prf.xml” extension.
AP0789	An <i>Application Deployment Descriptor</i> file shall have an “.add.xml” extension.

References

Document Name	Version/Date	Location (Pages, Section)
SCA Specification	Version 2.2.2 Final / 15 May 2006	Page 3-90, Section 3.1.3.5
SCA Extensions	Version 2.2.2 Final / 22 December 2006	Pages 4 to 11, Section 6
SCA Appendix D: Domain Profile	Version 2.2.2 Final / 15 May 2006	
SCA Extension DTD files	https://www.public.navy.mil/jtnc/Pages/resources.aspx?filter=support-wf-test	
Attachment I to Appendix D: Domain Profile Document Type Definitions	Version 2.2.2 15 May 2006	
JTNC Resource Catalog	https://www.public.navy.mil/jtnc/Pages/resources.aspx?filter=support-wf-test	

Test Objective

This test verifies AP0588, AP0589, AP0590, AP0591, AP0592, AP0593, AP0594, and AP0789. The objective of this test is to verify that the Domain Profile is compliant to the Document Type Definitions (DTD) provided in SCA Appendix D and SCA Extensions document. Specifically the SAD and SCD files have been updated for the SCA Extension requirements. The test also verifies that the

Domain Profile files have the correct file extensions and that the first two lines of each Domain Profile file has the proper declaration. This test case replaces APP_TC_018 when testing is for SCA Extensions.

Places to Verify

Domain Profile files.

IDL References

None.

Preconditions

- All the Domain profile files are available
- The SCA Extension DTD files are available to use for verification.
 - applicationdeployment.2.2.2.dtd
 - softwareassembly_ext.2.2.2.dtd
 - softwarecomponent.2.2.2.dtd
- The SCA v2.2.2 DTD files are available to use for verification.
 - softpkg.2.2.2.dtd
 - properties.2.2.2.dtd
- The Application requires SCA Extension testing.

Test Description

The following XML files, file name extensions, and DTD files will be verified.

Domain Profile Types and Applicable SCA DTDs			
Domain Profile File Name	File Name Extension	SCA AppendixD defined DTD File	SCA Extension defined DTD File
Application Deployment Descriptor (ADD)	add.xml		applicationdeployment.2.2.2.dtd
Software Assembly Descriptor (SAD)	sad.xml		softwareassembly_ext.2.2.2.dtd
Software Package Descriptor (SPD)	spd.xml	softpkg.2.2.2.dtd	
Software Component Descriptor (SCD)	scd.xml		softwarecomponent.2.2.2.dtd

Properties Descriptor (PRF)	prf.xml	properties.2.2.2.dtd	
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Identify the Domain Profile files and their type used in the application under test and verify that there is a corresponding DTD file using the above table (AP0588).

Pass: Each Domain Profile file type has a corresponding DTD.

Fail: Not all Domain Profile file type have a corresponding DTD.

For each Domain Profile file listed in the table above and found in the above step A, perform steps B, C and D:

Verify that the *Domain Profile* files are compliant to the applicable SCA DTD (AP0588).

Pass: The *Domain Profile* files are compliant to the DTD files specified in the SCA.

Fail: The *Domain Profile* files are not compliant to the DTD files specified in the SCA.

Verify that the *Domain Profile* file has the first two lines with *XML* declaration (?xml) and a *document type declaration* (!DOCTYPE) (AP0590).

Pass: The *Domain Profile* file has the *XML* and *DTD* type declarations.

Fail: The *Domain Profile* file does not have the *XML* or *DTD* type declaration.

Verify that *each Domain Profile* file has the *correct file* name extension as indicated *in the table above* (AP0591, AP0592, AP0593, AP0594, AP0789).

Pass: Each Domain Profile file has the correct file name extension.

Fail: Not all Domain Profile files have the correct file name extension.

Manual Test Steps

Notes: 1. Test Result will include Pass, Fail, Untested, or N/A.

2. The Test Recording Log is intended to record data for each step that requires recording of data.

APP_TC_051			
Steps	Expected Results	Comments	Test Results
Identify the Domain Profile files and their type used in the application under test and verify that there is a corresponding DTD file using the above table (AP0588).			
1. Obtain and record the directory where the Domain Profile (XML) files are located.	<p>Pass: The Domain Profile files are located in one or more directories. (AP0588)</p> <p>Fail: The Domain Profile files are not located. (AP0588)</p>		
2. Identify the type of each Domain Profile (XML) file used in the application. The types are SAD, SPD, SCD, PRF and ADD.	<p>The following types should exist.</p> <p>xxx.sad.xml -> file is required (SAD)</p> <p>xxx.spd.xml -> file(s) are required (SPD)</p> <p>xxx.scd.xml -> file(s) are optional (SCD)</p> <p>xxx.prf.xml -> file(s) are optional (PRF)</p> <p>xxx.add.xml -> file(s) are optional (ADD)</p> <p>Pass: SAD and SPD files found. (AP0588)</p> <p>Fail: No SAD or SPD files found. (AP0588)</p>	This can be done by examining the XML file extensions as indicated in the expected results column.	
3. Locate and verify the corresponding DTD file from the application directory for each Domain Profile file type identified in Step 2.	<p>Pass: Each type of Domain Profile file has a corresponding DTD file. (AP0588)</p> <p>Fail: Not all Domain Profile files have a corresponding DTD file. (AP0588)</p>	<p>Mapping example:</p> <p>XML file types Matching DTD Files</p> <p>xxx.sad.xml <i>SCA Extensions defined</i></p> <p>softwareassembly_ext.2.2.2.dtd</p> <p>xxx.spd.xml softpkg.2.2.2.dtd</p> <p>xxx.scd.xml <i>SCA Extensions defined</i></p> <p>softwarecomponent.2.2.2.dtd</p> <p>xxx.prf.xml properties.2.2.2.dtd</p> <p>xxx.add.xml <i>SCA Extensions defined</i></p> <p>applicationdeployment.2.2.2.dtd</p>	
For each Domain Profile file listed in the table above and found in the above step A, perform steps B, C and D:			

APP_TC_051			
Steps	Expected Results	Comments	Test Results
Verify that the Domain Profile files are compliant to the applicable SCA DTD (AP0588).			
4. Compare each DTD file from Step 3 to the applicable SCA DTD file for compliance.	<p>Pass: There are only white space differences between the files. (AP0588)</p> <p>Fail: There are more than white space differences between the files. (AP0588)</p>	<p>White differences include spaces, tabs, line feeds, and carriage returns.</p> <p>A file comparison tool such as the diff function in UNIX/Linux or cdiff with windows can be used for this test.</p>	
Verify that the Domain Profile file has the first two lines with XML declaration (?xml) and a document type declaration (!DOCTYPE) (AP0590).			
5. Examine each Domain Profile (XML) file and verify that the first two lines are XML declaration and !DOCTYPE declaration.	<p>Pass: The first two lines are XML and !DOCTYPE declarations. (AP0590)</p> <p>Fail: The first two lines are not XML or !DOCTYPE declarations. (AP0590)</p>	<p>Sample declaration:</p> <pre><?xml version="1.0" ...> <!DOCTYPE ...></pre>	
Verify that each Domain Profile file has the correct file name extension (AP0591, AP0592, AP0593, AP0594, AP0789).			
6. Verify that each <i>Software Package Descriptor</i> (SPD) file has a “.spd.xml” extension.	<p>Pass: Each <i>Software Package Descriptor</i> (SPD) file has a “.spd.xml” extension. (AP0591)</p> <p>Fail: Not each <i>Software Package Descriptor</i> (SPD) file has a “.spd.xml” extension. (AP0591)</p>		
7. Verify that each <i>Software Component Descriptor</i> (SCD) file has a “.scd.xml” extension.	<p>Pass: Each <i>Software Component Descriptor</i> (SCD) file has a “.scd.xml” extension. (AP0592)</p> <p>Fail: Not each <i>Software Component Descriptor</i> (SCD) file has a “.scd.xml” extension. (AP0592)</p>		

APP_TC_051			
Steps	Expected Results	Comments	Test Results
8. Verify that each <i>Software Assembly Descriptor</i> (SAD) file has a “.sad.xml” extension.	<p>Pass: Each <i>Software Assembly Descriptor</i> (SAD) file has a “.sad.xml” extension. (AP0593)</p> <p>Fail: Not each <i>Software Assembly Descriptor</i> (SAD) file has a “.sad.xml” extension. (AP0593)</p>		
9. Verify that each <i>Properties Descriptor</i> (PRF) file has a “.prf.xml” extension.	<p>Pass: Each <i>Properties Descriptor</i> (PRF) file has a “.prf.xml” extension. (AP0594)</p> <p>Fail: Not each <i>Properties Descriptor</i> (PRF) files have a “.prf.xml” extension. (AP0594)</p>		
10. Verify that each <i>Application Deployment Descriptor</i> (ADD) file has a “.add.xml” extension.	<p>Pass: Each <i>Application Deployment Descriptor</i> (ADD) file has a “.add.xml” extension. (AP0789)</p> <p>Fail: Not each <i>Application Deployment Descriptor</i> (ADD) files have a “.add.xml” extension. (AP0789)</p>		
End of Test			

Test Recording Log – APP_TC_051					
Step1 (directory containing the Domain Profile)					
Step2 (Domain Profile file type)	Step3 (DTD file)	Step4 (Compliant to SCA DTD)	Step5 (?XML and !DOCTYPE declarations)	Steps 6 thru 10 (proper file extension)	Notes
SAD Y/N	SAD Y/N	SAD Y/N	SAD Y/N	“.sad.xml” extension Y/N	
SPD Y/N	SPD Y/N	SPD Y/N	SPD Y/N	“.spd.xml” extension Y/N	

Test Recording Log – APP_TC_051					
Step1 (directory containing the Domain Profile)					
Step2 (Domain Profile file type)	Step3 (DTD file)	Step4 (Compliant to SCA DTD)	Step5 (?XML and !DOCTYPE declarations)	Steps 6 thru 10 (proper file extension)	Notes
SCD Y/N	SCD Y/N	SCD Y/N	SCD Y/N	“.scd.xml” extension Y/N	
PRF Y/N	PRF Y/N	PRF Y/N	PRF Y/N	“.prf.xml” extension Y/N	
ADD Y/N	ADD Y/N	ADD Y/N	ADD Y/N	“.add.xml” extension Y/N	
Notes					

Test Summary APP_TC_051

Once testing is complete for every component of the application under test, report the test result as follows:

Pass: No failures detected

Fail: Failure(s) detected in Step(s) (x). Failure of any associated criteria results in a failure of a requirement.

Untested: Condition which is not testable

N/A: Not Applicable

Overall Test Result (Pass, Fail, Untested, or N/A):

AP0588 _____

AP0590 _____

AP0591 _____

AP0592 _____

AP0593 _____

AP0594 _____

AP0789 _____

Failed Items (Section/Step Number):

Test Engineer: _____**Date Tested:** _____**Witness:** _____