## ALTO Interop test report of [ServerID] from [ClientID]

## 1. Test Report

### 1.1 Service Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Num. | Service | Test ID | Key Word | Result |
| 1 | IRD | ird:get | MUST |  |
| 2 | NM | def-nm:get | MUST |  |
| 3 | NM | alt-nm:get | MAY |  |
| 4 | FNM | def-nm:empty@empty | MAY |  |
| 5 | FNM | def-nm:empty@ipv6 | MAY |  |
| 6 | FNM | def-nm:bad@empty | MAY |  |
| 7 | FNM | def-nm:some-bad@empty | MAY |  |
| 8 | FNM | alt-nm:empty@empty | MAY |  |
| 9 | FNM | alt-nm:empty@ipv6 | MAY |  |
| 10 | FNM | alt-nm:bad@empty | MAY |  |
| 11 | FNM | alt-nm:some-bad@empty | MAY |  |
| 12 | CM | def-nm-costs-rtg-num:get | MUST |  |
| 13 | CM | def-nm-costs-hop-num:get | MAY |  |
| 14 | CM | def-nm-costs-rtg-ord:get | MAY |  |
| 15 | CM | def-nm-costs-hop-ord:get | MAY |  |
| 16 | CM | alt-nm-costs-rtg-ord:get | MAY |  |
| 17 | CM | alt-nm-costs-hop-ord:get | MAY |  |
| 18 | FCM | def-nm-costs-rtg-num:empty=>empty | MAY |  |
| 19 | FCM | def-nm-costs-rtg-num:good=>empty | MAY |  |
| 20 | FCM | def-nm-costs-rtg-num:empty=>valid | MAY |  |
| 21 | FCM | def-nm-costs-rtg-num:all-bad=>all-bad | MAY |  |
| 22 | FCM | def-nm-costs-rtg-num:some-bad=>some-bad | MAY |  |
| 23 | FCM | def-nm-costs-rtg-num:empty=>empty/ge20&le30 | MAY |  |
| 24 | FCM | def-nm-costs-hop-num:empty=>empty | MAY |  |
| 25 | FCM | def-nm-costs-hop-num:good=>empty | MAY |  |
| 26 | FCM | def-nm-costs-hop-num:empty=>valid | MAY |  |
| 27 | FCM | def-nm-costs-hop-num:all-bad=>all-bad | MAY |  |
| 28 | FCM | def-nm-costs-hop-num:some-bad=>some-bad | MAY |  |
| 29 | FCM | def-nm-costs-hop-num:empty=>empty/ge20&le30 | MAY |  |
| 30 | FCM | alt-nm-costs-rtg-num:empty=>empty | MAY |  |
| 31 | FCM | alt-nm-costs-rtg-num:good=>empty | MAY |  |
| 32 | FCM | alt-nm-costs-rtg-num:empty=>valid | MAY |  |
| 33 | FCM | alt-nm-costs-rtg-num:all-bad=>all-bad | MAY |  |
| 34 | FCM | alt-nm-costs-rtg-num:some-bad=>some-bad | MAY |  |
| 35 | FCM | alt-nm-costs-rtg-num:empty=>empty/ge20&le30 | MAY |  |
| 36 | FCM | alt-nm-costs-hop-num:empty=>empty | MAY |  |
| 37 | FCM | alt-nm-costs-hop-num:good=>empty | MAY |  |
| 38 | FCM | alt-nm-costs-hop-num:empty=>valid | MAY |  |
| 39 | FCM | alt-nm-costs-hop-num:all-bad=>all-bad | MAY |  |
| 40 | FCM | alt-nm-costs-hop-num:some-bad=>some-bad | MAY |  |
| 41 | FCM | alt-nm-costs-hop-num:empty=>empty/ge20&le30 | MAY |  |
| 42 | EPS | eps:def-nm.pid,alt-nm.pid,priv:ietf-type | MUST |  |
| 43 | ECS | ecs-rtg-num:mine\*=>peer\* | MAY |  |
| 44 | ECS | ecs-rtg-num:def=>def | MAY |  |
| 45 | ECS | ecs-rtg-num:loop=>loop | MAY |  |
| 46 | ECS | ecs-rtg-num:misc=>empty | MAY |  |
| 47 | ECS | ecs-rtg-num:empty=>misc | MAY |  |
| 48 | ECS | ecs-hop-num:mine\*=>peer\* | MAY |  |
| 49 | ECS | ecs-hop-num:def=>def | MAY |  |
| 50 | ECS | ecs-hop-num:loop=>loop | MAY |  |
| 51 | ECS | ecs-hop-num:misc=>empty | MAY |  |
| 52 | ECS | ecs-hop-num:empty=>misc | MAY |  |

### 1.2 Error Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Num. | Error | Test ID | Key Word | Result |
| 1 | Invalid Field Type | eps:invalid-field-type | MAY |  |
| 2 | Missing Properties Field | eps:missing-properties-field | MAY |  |
| 3 | Invalid Property Name | eps:invalid-property-name | MAY |  |
| 4 | Invalid Endpoint Addresses | eps:invalid-endpoint-addr#1 | MAY |  |
| 5 | Invalid Endpoint Addresses | eps:invalid-endpoint-addr#2 | MAY |  |
| 6 | Invalid Endpoint Addresses | eps:invalid-endpoint-addr#3 | MAY |  |
| 7 | Invalid Endpoint Addresses | eps:invalid-endpoint-addr#4 | MAY |  |
| 8 | Invalid Cost Metric | def-nm-costs-rtg-num:invalid-cost-metric | MAY |  |
| 9 | Invalid Cost Metric | def-nm-costs-rtg-ord:invalid-cost-metric | MAY |  |
| 10 | Invalid Cost Mode | def-nm-costs-rtg-num:invalid-cost-mode | MAY |  |
| 11 | Invalid Cost Mode | def-nm-costs-rtg-ord:invalid-cost-mode | MAY |  |
| 12 | Invalid Cost Constraints | def-nm-costs-rtg-num:invalid-cost-constraints | MAY |  |
| 13 | Json Syntax Error | eps:json-syntax-error | MAY |  |
| 14 | Invalid Accept Header in GET request | alt-nm:invalid-accept-header-GET | MAY |  |
| 15 | Invalid Accept Header In POST Request | eps:invalid-accept-header-POST | MAY |  |
| 16 | Invalid Content-Type Header In POST Request | eps:invalid-content-type-header-POST | MAY |  |

**Note:** The value of “Result” field should be “Passed”, “Failed” or “Not Implemented”

## 

## 2. Test Result Details

### 2.1. Service Test Result Details

\*\*\*Should be deleted in final template\*\*\*

\*\*\*We give concrete details about every tested item. Give reasons why the tested server fails

this and why the tested server check this \*\*\*

\*\*\*We give the We give concrete details about every tested \*\*\*

#Paste your test details for each map test here if necessary.

2.1.1 1

2.1.2 2

\*\*\*For example: we may give following reasons that the test server fails to pass 2 [Every

tested ALTO server MUST provide a default network map with the

PIDs defined below ]\*\*\*

\*\*\*Error: There is an additional IP address block in PID[default], additional IP address block is

[::/0].\*\*\*

\*\*\*Error: There is an absent IP address block in PID[default], absent IP address block is

[::0/0].\*\*\*

\*\*\*Error: There is an additional IP address block in PID[peer1], additional IP address block is

[2001:DB8::/33].\*\*\*

\*\*\*Error: There is an absent IP address block in PID[peer1], absent IP address block is

[2001:DB8:0000::/33].\*\*\*

### 2.2. Error Test Result Details

#Paste your test details for each error test here if necessary.

\*\*\*something similar to 2.1\*\*\*

## 3. Test Description

### 3.1. Service Test Description

|  |  |  |
| --- | --- | --- |
| Num. | Test ID | Description |
| 1 | ird:get | This test verifies the server’s IRD service. As described in [[1]](#h.rtmtda3e6r07), an ALTO server MUST provide a IRD service to describe all of the servers’ resources. |
| 2 | def-nm:get | This test verifies the server's default network map resource. Every ALTO server MUST provide a default network map described in [[1]](#h.ajtdz4tl4mp3). |
| 3 | alt-nm:get | This test verifies the server's alternate network map resource. |
| 4 | def-nm:empty@empty | This test gives empty "pid" array and omitted or empty "address-types" array to request filtered default network map. |
| 5 | def-nm:empty@ipv6 | This test gives empty "pids" array and "address-types" array containing just "ipv6" to request filtered default network map. |
| 6 | def-nm:bad@empty | This test gives "pids" array with one or more non-existent PID names to request filtered default network map. |
| 7 | def-nm:some-bad@empty | This test gives “pids" array with a set of valid PID names (client's choice) plus one or more non-existent PID names to request filtered default network map. |
| 8 - 11 | alt-nm:\* | Same with 4-7, but these tests requests filtered alternate network map. |
| 12 | def-nm-costs-rtg-num:get | This test verifies the server's numerical mode cost map resource for the "routingcost" metric for the default network map. Each ALTO server MUST provide a cost map for the "routingcost" metric as described in [[1]](#h.ajtdz4tl4mp3). |
| 13 | def-nm-costs-hop-num:get | This test verifies the server's numerical mode cost map resource for the "hopcount" metric for the default network map. |
| 14 | def-nm-costs-rtg-ord:get | Same with 12, but this test request ordinal mode cost map resource. |
| 15 | def-nm-costs-hop-ord:get | Same with 13, but this test request ordinal mode cost map resource. |
| 16 | alt-nm-costs-rtg-ord:get | Same with 14, but this test request cost map resource for alternate network map. |
| 17 | alt-nm-costs-hop-ord:get | Same with 15, but this test request cost map resource for alternate network map. |
| 18 | def-nm-costs-rtg-num:empty=>empty | This test gives empty "srcs" and "dsts" arrays to request numerical mode filtered cost map resource for the "routingcost" metric for the default network map |
| 19 | def-nm-costs-rtg-num:good=>empty | This test gives empty "srcs" array and "dsts" array with one or more valid PIDs to request numerical mode filtered cost map resource for the "routingcost" metric for the default network map. |
| 20 | def-nm-costs-rtg-num:empty=>valid | This test gives empty "dsts" array and "srcs" array with one or more valid PIDs request numerical mode filtered cost map resource for the "routingcost" metric for the default network map. |
| 21 | def-nm-costs-rtg-num:all-bad=>all-bad | This test gives "srcs" and "dsts" arrays with only non-existent PID names to request numerical mode filtered cost map resource for the "routingcost" metric for the default network map. |
| 22 | def-nm-costs-rtg-num:some-bad=>some-bad | This test gives "srcs" and "dsts" arrays with a set of valid PID names (client's choice), plus one or more non-existent PID names in one or the arrays to request numerical mode filtered cost map resource for the "routingcost" metric for the default network map. |
| 23 | def-nm-costs-rtg-num:empty=>empty/ge20&le30 | This test gives two-element constraint test "ge 20", "le 30" for the numerical "routingcost" for the default network map, with empty "srcs" and "dsts" arrays to request numerical mode filtered cost map resource for the "routingcost" metric for the default network map. |
| 24-29 | def-nm-costs-hop-num:\* | Same with 18-23, but these tests request filtered cost map resources for the “hopcount” metric. |
| 30-35 | alt-nm-costs-rtg-num:\* | Same with 18-23, but these tests request filtered cost map resources for the alternate network map. |
| 36-41 | alt-nm-costs-hop-num:\* | Same with 24-29, but these tests request filtered cost map resources for the alternate network map. |
| 42 | eps:def-nm.pid,alt-nm.pid,priv:ietf-type | This test verifies the server's EPS resource for the default network's "pid" property. If possible, this test should also verify the alternate network's "pid" property and the "priv:ietf-type" property. |
| 43 | ecs-rtg-num:mine\*=>peer\* | This test determines the costs between various endpoints in the “mine\*” and “peer\*“ PIDs measured by numerical routingcost. |
| 44 | ecs-rtg-num:def=>def | This test determines the costs between endpoints in the "default" PIDs measured by numerical routingcost. |
| 45 | ecs-rtg-num:loop=>loop | This test determines the costs between endpoints in the "loopback” PIDs measured by numerical routingcost. |
| 46 | ecs-rtg-num:misc=>empty | This test determines the cost when the client does not specify any destination addresses measured by numerical routingcost. |
| 47 | ecs-rtg-num:empty=>misc | This test determines the cost when the client does not specify any source addresses measured by numerical routingcost. |
| 48-52 | ecs-hop-num:\* | Same with 43-47, but these test determine the costs measured by numerical hopcount. |

### 

### 3.2. Error Test Description

|  |  |  |
| --- | --- | --- |
| Num. | Test ID | Result |
| 1 | eps:invalid-field-type | This test gives a scalar JSON string for the "endpoints" input field instead of a JSON array of one or more addresses to request EPS. |
| 2 | eps:missing-properties-field | This test omits the required "properties" input field to request EPS. |
| 3 | eps:invalid-property-name | This test requests the invalid property "no-such-property". |
| 4 | eps:invalid-endpoint-addr#1 | This test verifies that a server rejects invalid ipv4 endpoint address “ipv4:1.2.3.256” by requesting EPS. |
| 5 | eps:invalid-endpoint-addr#2 | This test verifies that a server rejects invalid ipv6 endpoint address “ipv6:2001:db800::” by requesting EPS. |
| 6 | eps:invalid-endpoint-addr#3 | This test verifies that a server rejects invalid ipv4 endpoint addresses “ipv4:2001:db8::” by requesting EPS. |
| 7 | eps:invalid-endpoint-addr#4 | This test verifies that a server rejects invalid ipv6 endpoint addresses “ipv6:1.2.3.4” by requesting EPS. |
| 8 | def-nm-costs-rtg-num:invalid-cost-metric | This test requests the invalid cost metric "no-such-metric" to request numerical mode costs map for default network map. |
| 9 | def-nm-costs-rtg-ord:invalid-cost-metric | This test requests the invalid cost metric "no-such-metric" to request ordinal mode costs map for default network map. |
| 10 | def-nm-costs-rtg-num:invalid-cost-mode | This test requests the invalid cost mode "no-such-mode" to request numerical mode costs map for default network map. |
| 11 | def-nm-costs-rtg-ord:invalid-cost-mode | This test requests the invalid cost mode "no-such-mode" to request ordinal mode costs map for default network map. |
| 12 | def-nm-costs-rtg-num:invalid-cost-constraints | This test uses a constraint test with the undefined "ne" operator for filtered cost map services which accepts constraints. |
| 13 | eps:json-syntax-error | This test gives syntactically incorrect JSON input to the server to request EPS. |
| 14 | alt-nm:invalida-accept-header-GET | This test attempts to GET the Full Network Map, without including the appropriate media-type ("application/alto-networkmap+json") in the "Accept" HTTP header. |
| 15 | eps:invalid-accept-header-POST | This test requests a property without including the appropriate media-type ("application/alto-endpointprop+json") in the "Accept" HTTP header. |
| 16 | eps:invalid-content-type-header-POST | This test requests a property but provides input with an incorrect Content-Type. |

## 

## 4. References

### [1] W. Roome and G. Chen: [*Interoperability Testing of the ALTO Protocol*](https://www.ietf.org/id/draft-roome-alto-interop-ietf93-00.txt)

## 5. Date

This test is done on July 21th, 2015 at [IETF 93 in Prague](http://www.ietf.org/meeting/93/index.html).

## 6. Tester and checker

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