Appendix B

10 DETAILED TESTBED VALIDATION TESTS

10.1 Phase 1

10.1.1 TB_P1_FUNCT/ROUT

Test Reference : **TB_P1_FUNCT/ROUT/1**

Test Purpose : Validate inter-domain link connectivity.

Procedure : Log into MESCAL11 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 1: 1.1.1.2
- Scenario 2: 1.1.1.6

Log into MESCAL21 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 3: 1.1.1.5
- Scenario 4: 2.2.2.2
- Scenario 5: 2.2.2.6

Log into MESCAL31 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 6: 1.1.1.1
- Scenario 7: 3.3.3.2
- Scenario 8: 3.3.3.6

Log into MESCAL41 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 9: 3.3.3.1
- Scenario 10: 41.41.41.10
- Scenario 11: 41.41.41.6
- Scenario 12: 41.41.41.2

Log into MESCAL42 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 13: 3.3.3.5
- Scenario 14: 2.2.2.1
- Scenario 15: 42.42.42.6
- Scenario 16: 42.42.42.2
- Scenario 17: 41.41.41.9

Log into MESCAL43 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 18: 42.42.42.1
- Scenario 19: 41.41.41.5
- Scenario 20: 43.43.43.2

Log into MESCAL51 and verify that BGP process is disabled. Ping the following addresses:

- Scenario 21: 42.42.42.5
- Scenario 22: 2.2.2.5

Log into MESCAL61 and verify that BGP process is disabled. Ping the following addresses:
- Scenario 23: 6.6.6.6
- Scenario 24: 41.41.41.1
- Scenario 25: 43.43.43.1
- Scenario 26: 6.6.6.2

Log into MESCAL71 and verify that BGP process is disabled. Ping the following addresses:
- Scenario 27: 6.6.6.1

Log into MESCAL81 and verify that BGP process is disabled. Ping the following addresses:
- Scenario 28: 6.6.6.5

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success
- Scenario 13: success
- Scenario 14: success
- Scenario 15: success
- Scenario 16: success
- Scenario 17: success
- Scenario 18: success
- Scenario 19: success
- Scenario 20: success
- Scenario 21: success
- Scenario 22: success
- Scenario 23: success
- Scenario 24: success
- Scenario 25: success
- Scenario 26: success
- Scenario 27: success
- Scenario 28: success

Execution date : 15/09/04
Result   : Obtained results are as follows:
- Scenario 1: success
- Scenario 2: success

- Scenario 3: success
- Scenario 4: success
- Scenario 5: Cancelled
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success
- Scenario 13: success
- Scenario 14: success
- Scenario 15: success
- Scenario 16: success
- Scenario 17: success
- Scenario 18: success
- Scenario 19: success
- Scenario 20: success
- Scenario 21: success
- Scenario 22: Cancelled
- Scenario 23: success
- Scenario 24: success
- Scenario 25: success
- Scenario 26: success
- Scenario 27: success
- Scenario 28: success

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/2**
Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.
Procedure   : Activate BGPD and NSM processes in both MESCAL11 and MESCAL21. Log to MESCAL 21 and configure MESCAL11 as a neighbor of MESCAL21. And log to MESCAL 11 and configure MESCAL21 as a neighbor of MESCAL11.

From MESCAL11 Ping the following addresses:
- Scenario 1: 1.1.1.6
- Scenario 2: 21.0.0.1
- Scenario 3: 2.2.2.5
- Scenario 4: 2.2.2.1
- Scenario 5: 2.2.2.2

From MESCAL21 Ping the following addresses:
- Scenario 6: 1.1.1.5
- Scenario 7: 1.1.1.1
- Scenario 8: 11.0.0.1
- Scenario 9: 11.0.0.2
- Scenario 10: 12.0.0.1
- Scenario 11: 12.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Execution date : 15/09/04
Result : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: Cancelled
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Failure level : None
Remarks : None

Test Reference : **TB_P1_FUNCT/ROUT/3**

Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL11 and MESCAL31. Log to MESCAL 31 and configure MESCAL11 as a neighbor. Log to MESCAL11 and configure MESCAL31 as a neighbor of MESCAL11.

From MESCAL11 Ping the following addresses:

- Scenario 1: 31.0.0.1
- Scenario 2: 3.3.3.1
- Scenario 3: 3.3.3.5
- Scenario 4: 1.1.1.2
- Scenario 5: 31.0.0.2

From MESCAL31 Ping the following addresses:

- Scenario 6: 1.1.1.5
- Scenario 7: 1.1.1.1
- Scenario 8: 11.0.0.1
- Scenario 9: 11.0.0.2
- Scenario 10: 12.0.0.1
- Scenario 11: 12.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Execution date : 15/09/04

Result : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Failure level : None

Remarks : None

Test Reference : **TB_P1_FUNCT/ROUT/4**

Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL21 and MESCAL42. Log to MESCAL 21 and configure MESCAL42 as a neighbor. And log to MESCAL42 and configure MESCAL21 as a neighbor.

From MESCAL42 Ping the following addresses:

- Scenario 1: 1.1.1.6
- Scenario 2: 21.0.0.1
- Scenario 3: 2.2.2.5
- Scenario 4: 2.2.2.1
- Scenario 5: 2.2.2.2

From MESCAL21 Ping the following addresses:

- Scenario 6: 3.3.3.6
- Scenario 7: 41.41.41.10
- Scenario 8: 42.42.42.1
- Scenario 9: 42.42.42.5
- Scenario 10: 2.2.2.2
- Scenario 11: 42.0.0.1
- Scenario 12: 42.0.0.2

Expected result : Results of ping request must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success

Execution date : 15/09/04

Result : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: Cancelled
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success

Failure level : None
Remarks : None

Test Reference : **TB_P1_FUNCT/ROUT/5**

Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL21 and MESCAL51. Log to MESCAL 21 and configure MESCAL51 as a neighbor. And log to MESCAL51 and configure MESCAL21 as a neighbor.

From MESCAL51 Ping the following addresses:

- Scenario 1: 1.1.1.6
- Scenario 2: 21.0.0.1
- Scenario 3: 2.2.2.5
- Scenario 4: 2.2.2.1
- Scenario 5: 2.2.2.2

From MESCAL21 Ping the following addresses:

- Scenario 6: 2.2.2.6
- Scenario 7: 42.42.42.6
- Scenario 8: 51.0.0.1
- Scenario 9: 51.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success

- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success

Execution date : 15/09/04

Result : Obtained results are as follows:

- Scenario 1: Cancelled
- Scenario 2: Cancelled
- Scenario 3: Cancelled
- Scenario 4: Cancelled
- Scenario 5: Cancelled
- Scenario 6: Cancelled
- Scenario 7: Cancelled
- Scenario 8: Cancelled
- Scenario 9: Cancelled

Failure level : None

Remarks : This test has been cancelled since the topology of the platform has been changed. This is not a critical test since there is some tests that check the overall testbed reachability.

Test Reference : **TB_P1_FUNCT/ROUT/6**

Test Purpose : Validate connectivity between two neighbours when BGP process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL31 and MESCAL42. Log to MESCAL 31 and configure MESCAL42 as a neighbor. And log to MESCAL42 and configure MESCAL31 as a neighbor.

From MESCAL42 Ping the following addresses:

- Scenario 1: 31.0.0.1
- Scenario 2: 3.3.3.1
- Scenario 3: 3.3.3.5
- Scenario 4: 1.1.1.2
- Scenario 5: 31.0.0.2

From MESCAL31 Ping the following addresses:

- Scenario 6: 3.3.3.6
- Scenario 7: 41.41.41.10
- Scenario 8: 42.42.42.1
- Scenario 9: 42.42.42.5
- Scenario 10: 2.2.2.2
- Scenario 11: 42.0.0.1
- Scenario 12: 42.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success

- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success

Execution date : 15/09/04

Result   : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success
- Scenario 12: success

Failure level : None

Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/7**

Test Purpose   : Validate connectivity between two neighbours when BGP process is activated.

Procedure   : Activate BGPD and NSM processes in both MESCAL31 and MESCAL41. Log to MESCAL 31 and configure MESCAL41 as a neighbor. And log to MESCAL41 and configure MESCAL31 as a neighbor.

From MESCAL41 Ping the following addresses:

- Scenario 1: 31.0.0.1
- Scenario 2: 3.3.3.1
- Scenario 3: 3.3.3.5
- Scenario 4: 1.1.1.2
- Scenario 5: 31.0.0.2

From MESCAL31 Ping the following addresses:

- Scenario 6: 3.3.3.2
- Scenario 7: 41.41.41.9
- Scenario 8: 41.41.41.5
- Scenario 9: 41.41.41.1
- Scenario 10: 41.0.0.1
- Scenario 11: 41.0.0.2

Expected result : Results of ping operation must be as follows:

- Scenario 1: success
- Scenario 2: success

- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Execution date : 15/09/04

Result   : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/8**

Test Purpose   : Validate connectivity between two neighbours when BGP process is activated.

Procedure   : Activate BGPD and NSM processes in both MESCAL61 and MESCAL41. Log to MESCAL 61 and configure MESCAL41 as a neighbor. And log to MESCAL41 and configure MESCAL61 as a neighbor.

From MESCAL41 Ping the following addresses:

- Scenario 1: 61.0.0.1
- Scenario 2: 6.6.6.5
- Scenario 3: 6.6.6.1
- Scenario 4: 41.41.41.2
- Scenario 5: 43.43.43.2

From MESCAL61 Ping the following addresses:

- Scenario 6: 3.3.3.2
- Scenario 7: 41.41.41.9
- Scenario 8: 41.41.41.5
- Scenario 9: 41.41.41.1
- Scenario 10: 41.0.0.1
- Scenario 11: 41.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success

- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Execution date : 15/09/04

Result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Failure level : None

Remarks : None

Test Reference : **TB_P1_FUNCT/ROUT/9**

Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL61 and MESCAL43. Log to MESCAL 61 and configure MESCAL43 as a neighbor. And log to MESCAL43 and configure MESCAL61 as a neighbor.

From MESCAL43 Ping the following addresses:

- Scenario 1: 61.0.0.1
- Scenario 2: 6.6.6.5
- Scenario 3: 6.6.6.1
- Scenario 4: 41.41.41.2
- Scenario 5: 43.43.43.2

From MESCAL61 Ping the following addresses:

- Scenario 6: 43.43.43.1
- Scenario 7: 41.41.41.6
- Scenario 8: 42.42.42.2
- Scenario 9: 43.0.0.1
- Scenario 10: 43.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success

- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success

Execution date : 15/09/04

Result   : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success

Failure level : None

Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/10**

Test Purpose : Validate connectivity between two neighbours when BGPD process is activated.

Procedure : Activate BGPD and NSM processes in both MESCAL51 and MESCAL42. Log to MESCAL 51 and configure MESCAL42 as a neighbor. And log to MESCAL42 and configure MESCAL51 as a neighbor.

From MESCAL42 Ping the following addresses:

- Scenario 1: 2.2.2.6
- Scenario 2: 42.42.42.6
- Scenario 3: 51.0.0.1
- Scenario 4: 51.0.0.2

From MESCAL51 Ping the following addresses:

- Scenario 5: 3.3.3.6
- Scenario 6: 41.41.41.10
- Scenario 7: 42.42.42.1
- Scenario 8: 42.42.42.5
- Scenario 9: 2.2.2.2
- Scenario 10: 42.0.0.1
- Scenario 11: 42.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success

- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: Cancelled
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success
- Scenario 11: success

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/11**

Test Purpose   : Validate connectivity between two neighbours when BGPD process is activated.

Procedure   : Activate BGPD and NSM processes in both MESCAL61 and MESCAL71. Log to MESCAL 61 and configure MESCAL71 as a neighbor. And log to MESCAL71 and configure MESCAL61 as a neighbor.

From MESCAL71 Ping the following addresses:

- Scenario 1: 61.0.0.1
- Scenario 2: 6.6.6.5
- Scenario 3: 6.6.6.1
- Scenario 4: 41.41.41.2
- Scenario 5: 43.43.43.2

From MESCAL61 Ping the following addresses:

- Scenario 6: 6.6.6.2
- Scenario 7: 71.0.0.1
- Scenario 8: 71.0.0.2

Expected result : Results of ping operation must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: success

- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/12**

Test Purpose   : Validate connectivity between two neighbours when BGPD process is activated.

Procedure   : Activate BGPD and NSM processes in both MESCAL61 and MESCAL81. Log to MESCAL 61 and configure MESCAL81 as a neighbor. And log to MESCAL81 and configure MESCAL61 as a neighbor.

From MESCAL81 Ping the following addresses:

- Scenario 1: 61.0.0.1
- Scenario 2: 6.6.6.5
- Scenario 3: 6.6.6.1
- Scenario 4: 41.41.41.2
- Scenario 5: 43.43.43.2

From MESCAL61 Ping the following addresses:

- Scenario 6: 6.6.6.6
- Scenario 7: 81.0.0.1
- Scenario 8: 81.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/13**
Test Purpose : Check the route propagation in a simple Scenario.
Procedure   : Configure MESCAL11 to be a neighbor of MESCAL21 and MESCAL31. Configure
                  MESCAL31 and MESCAL21 to be neighbours of MESCAL11. Activate BGPD and
                  NSM processes in MESCAL11, MESCAL21 and MESCAL31.

From MESCAL31 Ping the following addresses:
- Scenario 1: 1.1.1.6
- Scenario 2: 21.0.0.1
- Scenario 3: 2.2.2.5
- Scenario 4: 2.2.2.1
- Scenario 5: 2.2.2.2

From MESCAL21 Ping the following addresses:
- Scenario 6: 1.1.1.2
- Scenario 7: 3.3.3.5
- Scenario 8: 3.3.3.1
- Scenario 9: 31.0.0.1
- Scenario 10: 31.0.0.2

Expected result : Results of ping requests must be as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: success
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: success
- Scenario 2: success
- Scenario 3: Cancelled
- Scenario 4: success
- Scenario 5: success
- Scenario 6: success
- Scenario 7: success
- Scenario 8: success
- Scenario 9: success
- Scenario 10: success

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/14**
Test Purpose : Check the reachability of all interfaces.
Procedure   : Activate BGPD and NSM in all routers present in the testbed. BGP configuration is
                  as described in Appendix A.

Log into the following routers and execute from bash prompt "**pfgping**":
- Scenario 1: MESCAL11
- Scenario 2: MESCAL21
- Scenario 3: MESCAL31
- Scenario 4: MESCAL41
- Scenario 5: MESCAL42
- Scenario 6: MESCAL43
- Scenario 7: MESCAL51
- Scenario 8: MESCAL61
- Scenario 9: MESCAL71
- Scenario 10: MESCAL81

Expected result : Results of "**pfgping**" must be as follows:

- Scenario 1: All destinations are successfully reached.
- Scenario 2: All destinations are successfully reached.
- Scenario 3: All destinations are successfully reached.
- Scenario 4: All destinations are successfully reached.
- Scenario 5: All destinations are successfully reached.
- Scenario 6: All destinations are successfully reached.
- Scenario 7: All destinations are successfully reached.
- Scenario 8: All destinations are successfully reached.
- Scenario 9: All destinations are successfully reached.
- Scenario 10: All destinations are successfully reached.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: All destinations are successfully reached.
- Scenario 2: All destinations are successfully reached.
- Scenario 3: All destinations are successfully reached.
- Scenario 4: All destinations are successfully reached.
- Scenario 5: All destinations are successfully reached.
- Scenario 6: All destinations are successfully reached.
- Scenario 7: All destinations are successfully reached.
- Scenario 8: All destinations are successfully reached.
- Scenario 9: All destinations are successfully reached.
- Scenario 10: All destinations are successfully reached.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/15**
Test Purpose   : Verify the reachability when link failure occurs.
Procedure   : Activate BGPD and NSM in all routers present in the testbed. BGP configuration is as described in Appendix A.

Execute the following operations:
- Scenario 1: Disable interface eth6 of MESCAL21, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 2: Disable interface eth1 of MESCAL31, and from bash prompt of MESCAL11 execute "**pfgping**"

- Scenario 3: Disable interface eth1 of MESCAL42, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 4: Disable interface eth4 of MESCAL42, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 5: Disable interfaces eth4 and eth1 of MESCAL42, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 6: Disable interfaces eth2 and eth3 of MESCAL42, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 7: Disable interfaces eth5 of MESCAL41, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 8: Disable interfaces eth5 of MESCAL41 and eth0 of MESCAL43, and from bash prompt of MESCAL11 execute "**pfgping**"

Expected result : Results of "**pfgping**" must be as follows:

- Scenario 1: All destinations are successfully reached except interface eth6 of MESCAL21.
- Scenario 2: All destinations are successfully reached except interface eth1 of MESCAL31.
- Scenario 3: All destinations are successfully reached except interface eth1 of MESCAL42.
- Scenario 4: All destinations are successfully reached except interface eth4 of MESCAL42.
- Scenario 5: All destinations are successfully reached except interface eth1 and eth4 of MESCAL42.
- Scenario 6: All destinations are successfully reached except interface eth2 and eth3 of MESCAL42.
- Scenario 7: All destinations are successfully reached except interface eth5 of MESCAL41.
- Scenario 8: All destinations are successfully reached except:
    Interface eth5 of MESCAL41
    Interface eth0 of MESCAL43
    All interfaces of MESCAL61
    All interfaces of MESCAL71
    All interfaces of MESCAL81

Execution date : 15/09/04
Result   : Obtained results are as follows:
- Scenario 1: All destinations are successfully reached except interface eth6 of MESCAL21.
- Scenario 2: All destinations are successfully reached except interface eth1 of MESCAL31.
- Scenario 3: All destinations are successfully reached except interface eth1 of MESCAL42.
- Scenario 4: All destinations are successfully reached except interface eth4 of MESCAL42.
- Scenario 5: All destinations are successfully reached except interface eth1 and eth4 of MESCAL42.
- Scenario 6: All destinations are successfully reached except interface eth2 and eth3 of MESCAL42.
- Scenario 7: All destinations are successfully reached except interface eth5 of MESCAL41.
- Scenario 8: All destinations are successfully reached except:
    Interface eth5 of MESCAL41

Interface eth0 of MESCAL43
All interfaces of MESCAL61
All interfaces of MESCAL71
All interfaces of MESCAL81

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/16**
Test Purpose : Verify the reachability when a link failure is re-established.
Procedure : Activate BGPD and NSM in all routers present in the testbed. BGP configuration is as described in Appendix A.

Execute the following operations:
- Scenario 1: Disable interface eth6 of MESCAL21. In few minutes activate this interface, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 2: Disable interface eth1 of MESCAL31. In few minutes activate this interface, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 3: Disable interface eth1 of MESCAL42. In few minutes activate this interface, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 4: Disable interface eth4 of MESCAL42. In few minutes activate this interface, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 5: Disable interfaces eth4 and eth1 of MESCAL42. In few minutes activate these interfaces, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 6: Disable interfaces eth2 and eth3 of MESCAL42. In few minutes activate these interfaces, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 7: Disable interfaces eth5 of MESCAL41. In few minutes activate this interface, and from bash prompt of MESCAL11 execute "**pfgping**"
- Scenario 8: Disable interfaces eth5 of MESCAL41 and eth0 of MESCAL43. In few minutes activate these interfaces, and from bash prompt of MESCAL11 execute "**pfgping**"

Expected result : Results of "**pfgping**" must be as follows:

- Scenario 1: All destinations are successfully reached.
- Scenario 2: All destinations are successfully reached.
- Scenario 3: All destinations are successfully reached.
- Scenario 4: All destinations are successfully reached.
- Scenario 5: All destinations are successfully reached.
- Scenario 6: All destinations are successfully reached.
- Scenario 7: All destinations are successfully reached.
- Scenario 8: All destinations are successfully reached.
- Scenario 9: All destinations are successfully reached.
- Scenario 10: All destinations are successfully reached.

Execution date : 15/09/04
Result : Obtained results are as follows:

- Scenario 1: All destinations are successfully reached.
- Scenario 2: All destinations are successfully reached.
- Scenario 3: All destinations are successfully reached.
- Scenario 4: All destinations are successfully reached.

- Scenario 5: All destinations are successfully reached.
- Scenario 6: All destinations are successfully reached.
- Scenario 7: All destinations are successfully reached.
- Scenario 8: All destinations are successfully reached.
- Scenario 9: All destinations are successfully reached.
- Scenario 10: All destinations are successfully reached.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/ROUT/17**
Test Purpose   : Verify intra-domain routing in AS4.
Procedure   :
Configure the following static routes in MESCAL42:
- 41.41.41.1/30 via 41.41.41.9 metric 1
- 41.41.41.1/30 via 42.42.42.2 metric 2
- 43.43.43.1/30 via 41.41.41.9 metric 2
- 43.43.43.1/30 via 42.42.42.9 metric 1

Configure the following static routes in MESCAL41:
- 43.43.43.1/30 via 41.41.41.10 metric 2
- 43.43.43.1/30 via 41.41.41.6 metric 1

Configure the following static routes in MESCAL43:
- 41.41.41.1/30 via 41.41.41.5 metric 1
- 41.41.41.1/30 via 42.42.42.1 metric 2

Log into MESCAL42. From a bash prompt, ping the following addresses:
- Scenario 1: 41.41.41.1
- Scenario 2: 43.43.43.1

Disable interface eth2 of MESCAL43, and then ping the following addresses:
- Scenario 3: 41.41.41.1
- Scenario 4: 43.43.43.1

Disable interface eth4 of MESCAL41, and then ping the following addresses:
- Scenario 5: 41.41.41.1
- Scenario 6: 43.43.43.1

Enable interface eth2 of MESCAL43, and then ping the following addresses:
- Scenario 7: 41.41.41.1
- Scenario 8: 43.43.43.1

Disable interface eth3 of MESCAL41, and then ping the following addresses:
- Scenario 9: 41.41.41.1
- Scenario 10: 43.43.43.1

Expected result : Results of ping requests must be as follows:

- Scenario 1: Success.
- Scenario 2: Success.
- Scenario 3: Success.
- Scenario 4: Success.
- Scenario 5: Unreachable destination.

- Scenario 6: Unreachable destination.
- Scenario 7: Success.
- Scenario 8: Success.
- Scenario 9: Success.
- Scenario 10: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: Success.
- Scenario 2: Success.
- Scenario 3: Success.
- Scenario 4: Success.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: Success.
- Scenario 8: Success.
- Scenario 9: Success.
- Scenario 10: Unreachable destination.

Failure level   : None
Remarks   : None

10.1.2 TB_P1_FUNCT/DSSW

In this section, we list tests that aim at verifying DSCP swapping operations in both ingress and egress of ASs. Before starting executing these tests, it is recommended to verify that the DSCP values that have been assigned in the testbed configuration are correctly settled in **qsi** and **qse** scripts in all routers of the testbed.

Test Reference : **TB_P1_FUNCT/DSSW/1**
Test Purpose   : Verify DSCP swapping at egress of MESCAL11.
Procedure   : Configure local-QoS-classes of MESCAL11 as defined in testbed Configuration section. Practically, execute **qsa** script in MESCAL11.

Launch a traffic analyzer in:
- MESCAL31 that captures traffic going through eth1.
- MESCAL21 that captures traffic going through eth6.

Execute successively the following commands from a bash terminal of MESCAL11:
- Scenario 1: ping –Q 0x28 1.1.1.2
- Scenario 2: ping –Q 0x30 1.1.1.2
- Scenario 3: ping –Q 0x38 1.1.1.2
- Scenario 4: ping 1.1.1.2
- Scenario 5: ping –Q 0x45 1.1.1.2
- Scenario 6: ping –Q 0x144 1.1.1.2
- Scenario 7: ping –Q 0x28 1.1.1.6
- Scenario 8: ping –Q 0x30 1.1.1.6
- Scenario 9: ping –Q 0x38 1.1.1.6
- Scenario 10: ping 1.1.1.6
- Scenario 11: ping –Q 0x98 1.1.1.6
- Scenario 12: ping –Q 0x144 1.1.1.6

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x68.
- Scenario 8: ping requests are received with a TOS value of 0x70.
- Scenario 9: ping requests are received with a TOS value of 0x78.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x68.
- Scenario 8: ping requests are received with a TOS value of 0x70.
- Scenario 9: ping requests are received with a TOS value of 0x78.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/2**
Test Purpose   : Verify DSCP swapping at egress of MESCAL21.
Procedure   : Configure local-QoS-classes of MESCAL21 as defined in testbed Configuration
section. Practically, execute **qsa** script in MESCAL21.

Launch a traffic analyzer in:
- MESCAL11 that captures traffic going through eth1.
- MESCAL42 that captures traffic going through eth4.
- MESCAL51 that captures traffic going through eth2.

Execute successively the following commands from a bash terminal of MESCAL21:
- Scenario 1: ping –Q 0x48 1.1.1.5
- Scenario 2: ping –Q 0x50 1.1.1.5
- Scenario 3: ping –Q 0x58 1.1.1.5
- Scenario 4: ping 1.1.1.5
- Scenario 5: ping –Q 0x98 1.1.1.5
- Scenario 6: ping –Q 0x144 1.1.1.5
- Scenario 7: ping –Q 0x48 2.2.2.2
- Scenario 8: ping –Q 0x50 2.2.2.2
- Scenario 9: ping –Q 0x58 2.2.2.2
- Scenario 10: ping 2.2.2.2

- Scenario 11: ping –Q 0x98 2.2.2.2
- Scenario 12: ping –Q 0x144 2.2.2.2
- Scenario 13: ping –Q 0x48 2.2.2.6
- Scenario 14: ping –Q 0x50 2.2.2.6
- Scenario 15: ping –Q 0x58 2.2.2.6
- Scenario 16: ping 2.2.2.6
- Scenario 17: ping –Q 0x98 2.2.2.6
- Scenario 18: ping –Q 0x144 2.2.2.6

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x68.
- Scenario 2: ping requests are received with a TOS value of 0x70.
- Scenario 3: ping requests are received with a TOS value of 0x78.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xc8.
- Scenario 8: ping requests are received with a TOS value of 0xd0.
- Scenario 9: ping requests are received with a TOS value of 0xd8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x68.
- Scenario 2: ping requests are received with a TOS value of 0x70.
- Scenario 3: ping requests are received with a TOS value of 0x78.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xc8.
- Scenario 8: ping requests are received with a TOS value of 0xd0.
- Scenario 9: ping requests are received with a TOS value of 0xd8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: Cancelled
- Scenario 14: Cancelled
- Scenario 15: Cancelled
- Scenario 16: Cancelled
- Scenario 17: Cancelled
- Scenario 18: Cancelled

Failure level   : None

Remarks : The scenarios cancelled are obsolete since the inter-domain link between AS2 and AS5 is dropped.

Test Reference : **TB_P1_FUNCT/DSSW/3**

Test Purpose : Verify DSCP swapping at egress of MESCAL31.

Procedure : Configure local-QoS-classes of MESCAL31 as defined in testbed Configuration section. Practically, execute `qsa` script in MESCAL31.

Launch a traffic analyzer in:
- MESCAL11 that captures traffic going through eth0.
- MESCAL42 that captures traffic going through eth1.
- MESCAL41 that captures traffic going through eth0.

Execute successively the following commands from a bash terminal of MESCAL31:
- Scenario 1: ping –Q 0x68 1.1.1.1
- Scenario 2: ping –Q 0x70 1.1.1.1
- Scenario 3: ping –Q 0x78 1.1.1.1
- Scenario 4: ping 1.1.1.1
- Scenario 5: ping –Q 0x98 1.1.1.1
- Scenario 6: ping –Q 0x144 1.1.1.1
- Scenario 7: ping –Q 0x68 3.3.3.6
- Scenario 8: ping –Q 0x70 3.3.3.6
- Scenario 9: ping –Q 0x78 3.3.3.6
- Scenario 10: ping 3.3.3.6
- Scenario 11: ping –Q 0x98 3.3.3.6
- Scenario 12: ping –Q 0x144 3.3.3.6
- Scenario 13: ping –Q 0x68 3.3.3.2
- Scenario 14: ping –Q 0x70 3.3.3.2
- Scenario 15: ping –Q 0x78 3.3.3.2
- Scenario 16: ping 3.3.3.2
- Scenario 17: ping –Q 0x98 3.3.3.2
- Scenario 18: ping –Q 0x144 3.3.3.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.

- Scenario 18: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/4**
Test Purpose : Verify DSCP swapping at egress of MESCAL41.
Procedure : Configure local-QoS-classes of MESCAL41 as defined in testbed Configuration
section. Practically, execute **qsa** script in MESCAL41.

Launch a traffic analyzer in:
- MESCAL31 that captures traffic going through eth6.
- MESCAL42 that captures traffic going through eth2.
- MESCAL43 that captures traffic going through eth1.
- MESCAL61 that captures traffic going through eth4.

Execute successively the following commands from a bash terminal of MESCAL41:
- Scenario 1: ping –Q 0x88 3.3.3.1
- Scenario 2: ping –Q 0x90 3.3.3.1
- Scenario 3: ping –Q 0x98 3.3.3.1
- Scenario 4: ping 3.3.3.1
- Scenario 5: ping –Q 0x55 3.3.3.1
- Scenario 6: ping –Q 0x144 3.3.3.1
- Scenario 7: ping –Q 0x88 41.41.41.10
- Scenario 8: ping –Q 0x90 41.41.41.10
- Scenario 9: ping –Q 0x98 41.41.41.10
- Scenario 10: ping 41.41.41.10
- Scenario 11: ping –Q 0x55 41.41.41.10
- Scenario 12: ping –Q 0x144 41.41.41.10
- Scenario 13: ping –Q 0x88 41.41.41.6
- Scenario 14: ping –Q 0x90 41.41.41.6

- Scenario 15: ping –Q 0x98 41.41.41.6
- Scenario 16: ping 41.41.41.6
- Scenario 17: ping –Q 0x38 41.41.41.6
- Scenario 18: ping –Q 0x144 41.41.41.6
- Scenario 19: ping –Q 0x88 41.41.41.2
- Scenario 20: ping –Q 0x90 41.41.41.2
- Scenario 21: ping –Q 0x98 41.41.41.2
- Scenario 22: ping 41.41.41.2
- Scenario 23: ping –Q 0x38 41.41.41.2
- Scenario 24: ping –Q 0x144 41.41.41.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x88.
- Scenario 8: ping requests are received with a TOS value of 0x90.
- Scenario 9: ping requests are received with a TOS value of 0x98.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0x88.
- Scenario 14: ping requests are received with a TOS value of 0x90.
- Scenario 15: ping requests are received with a TOS value of 0x98.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0x48.
- Scenario 20: ping requests are received with a TOS value of 0x50.
- Scenario 21: ping requests are received with a TOS value of 0x58.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x88.
- Scenario 8: ping requests are received with a TOS value of 0x90.
- Scenario 9: ping requests are received with a TOS value of 0x98.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.

- Scenario 13: ping requests are received with a TOS value of 0x88.
- Scenario 14: ping requests are received with a TOS value of 0x90.
- Scenario 15: ping requests are received with a TOS value of 0x98.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0x48.
- Scenario 20: ping requests are received with a TOS value of 0x50.
- Scenario 21: ping requests are received with a TOS value of 0x58.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/5**
Test Purpose   : Verify DSCP swapping at egress of MESCAL42.
Procedure   : Configure local-QoS-classes of MESCAL42 as defined in testbed Configuration section. Practically, execute **qsa** script in MESCAL42.

Launch a traffic analyzer in:
- MESCAL21 that captures traffic going through eth0.
- MESCAL31 that captures traffic going through eth0.
- MESCAL41 that captures traffic going through eth4.
- MESCAL43 that captures traffic going through eth2.
- MESCAL51 that captures traffic going through eth1.

Execute successively the following commands from a bash terminal of MESCAL42:
- Scenario 1: ping –Q 0x88 2.2.2.1
- Scenario 2: ping –Q 0x90 2.2.2.1
- Scenario 3: ping –Q 0x98 2.2.2.1
- Scenario 4: ping 2.2.2.1
- Scenario 5: ping –Q 0x55 2.2.2.1
- Scenario 6: ping –Q 0x144 2.2.2.1
- Scenario 7: ping –Q 0x88 3.3.3.5
- Scenario 8: ping –Q 0x90 3.3.3.5
- Scenario 9: ping –Q 0x98 3.3.3.5
- Scenario 10: ping 3.3.3.5
- Scenario 11: ping –Q 0x55 3.3.3.5
- Scenario 12: ping –Q 0x144 3.3.3.5
- Scenario 13: ping –Q 0x88 41.41.41.9
- Scenario 14: ping –Q 0x90 41.41.41.9
- Scenario 15: ping –Q 0x98 41.41.41.9
- Scenario 16: ping 41.41.41.9
- Scenario 17: ping –Q 0x38 41.41.41.9
- Scenario 18: ping –Q 0x144 41.41.41.9
- Scenario 19: ping –Q 0x88 42.42.42.1
- Scenario 20: ping –Q 0x90 42.42.42.1
- Scenario 21: ping –Q 0x98 42.42.42.1
- Scenario 22: ping 42.42.42.1
- Scenario 23: ping –Q 0x38 42.42.42.1
- Scenario 24: ping –Q 0x144 42.42.42.1

- Scenario 25: ping –Q 0x88 42.42.42.6
- Scenario 26: ping –Q 0x90 42.42.42.6
- Scenario 27: ping –Q 0x98 42.42.42.6
- Scenario 28: ping 42.42.42.6
- Scenario 29: ping –Q 0x38 42.42.42.6
- Scenario 30: ping –Q 0x144 42.42.42.6

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xd8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0x88.
- Scenario 14: ping requests are received with a TOS value of 0x90.
- Scenario 15: ping requests are received with a TOS value of 0x98.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0x88.
- Scenario 20: ping requests are received with a TOS value of 0x80.
- Scenario 21: ping requests are received with a TOS value of 0x98.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.
- Scenario 25: ping requests are received with a TOS value of 0x28.
- Scenario 26: ping requests are received with a TOS value of 0x30.
- Scenario 27: ping requests are received with a TOS value of 0x38.
- Scenario 28: ping requests are received with a TOS value of 0x00.
- Scenario 29: ping requests are received with a TOS value of 0x00.
- Scenario 30: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xd8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.

- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0x88.
- Scenario 14: ping requests are received with a TOS value of 0x90.
- Scenario 15: ping requests are received with a TOS value of 0x98.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0x88.
- Scenario 20: ping requests are received with a TOS value of 0x80.
- Scenario 21: ping requests are received with a TOS value of 0x98.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.
- Scenario 25: ping requests are received with a TOS value of 0x28.
- Scenario 26: ping requests are received with a TOS value of 0x30.
- Scenario 27: ping requests are received with a TOS value of 0x38.
- Scenario 28: ping requests are received with a TOS value of 0x00.
- Scenario 29: ping requests are received with a TOS value of 0x00.
- Scenario 30: ping requests are received with a TOS value of 0x00.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/6**
Test Purpose   : Verify DSCP swapping at egress of MESCAL43.
Procedure   : Configure local-QoS-classes of MESCAL43 as defined in testbed Configuration section. Practically, execute **qsa** script in MESCAL43.

Launch a traffic analyzer in:
- MESCAL41 that captures traffic going through eth3.
- MESCAL42 that captures traffic going through eth3.
- MESCAL61 that captures traffic going through eth1.

Execute successively the following commands from a bash terminal of MESCAL43:
- Scenario 1: ping –Q 0x88 41.41.41.5
- Scenario 2: ping –Q 0x90 41.41.41.5
- Scenario 3: ping –Q 0x98 41.41.41.5
- Scenario 4: ping 41.41.41.5
- Scenario 5: ping –Q 0x55 41.41.41.5
- Scenario 6: ping –Q 0x144 41.41.41.5
- Scenario 7: ping –Q 0x88 42.42.42.1
- Scenario 8: ping –Q 0x90 42.42.42.1
- Scenario 9: ping –Q 0x98 42.42.42.1
- Scenario 10: ping 42.42.42.1
- Scenario 11: ping –Q 0x55 42.42.42.1
- Scenario 12: ping –Q 0x144 42.42.42.1
- Scenario 13: ping –Q 0x88 43.43.43.2
- Scenario 14: ping –Q 0x90 43.43.43.2
- Scenario 15: ping –Q 0x98 43.43.43.2
- Scenario 16: ping 43.43.43.2
- Scenario 17: ping –Q 0x38 43.43.43.2

- Scenario 18: ping –Q 0x144 43.43.43.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x88.
- Scenario 8: ping requests are received with a TOS value of 0x90.
- Scenario 9: ping requests are received with a TOS value of 0x98.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0x48.
- Scenario 14: ping requests are received with a TOS value of 0x50.
- Scenario 15: ping requests are received with a TOS value of 0x58.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x88.
- Scenario 8: ping requests are received with a TOS value of 0x90.
- Scenario 9: ping requests are received with a TOS value of 0x98.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0x48.
- Scenario 14: ping requests are received with a TOS value of 0x50.
- Scenario 15: ping requests are received with a TOS value of 0x58.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/7**
Test Purpose   : Verify DSCP swapping at egress of MESCAL51.
Procedure   : Configure local-QoS-classes of MESCAL51 as defined in testbed Configuration
section. Practically, execute **qsa** script in MESCAL51.

Launch a traffic analyzer in:

- MESCAL21 that captures traffic going through eth5.
- MESCAL42 that captures traffic going through eth5.

Execute successively the following commands from a bash terminal of MESCAL51:
- Scenario 1: ping –Q 0xa8 2.2.2.5
- Scenario 2: ping –Q 0xb0 2.2.2.5
- Scenario 3: ping –Q 0xb8 2.2.2.5
- Scenario 4: ping 2.2.2.5
- Scenario 5: ping –Q 0x55 2.2.2.5
- Scenario 6: ping –Q 0x144 2.2.2.5
- Scenario 7: ping –Q 0xa8 42.42.42.5
- Scenario 8: ping –Q 0xb0 42.42.42.5
- Scenario 9: ping –Q 0xb8 42.42.42.5
- Scenario 10: ping 42.42.42.5
- Scenario 11: ping –Q 0x55 42.42.42.5
- Scenario 12: ping –Q 0x144 42.42.42.5

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x28.
- Scenario 8: ping requests are received with a TOS value of 0x30.
- Scenario 9: ping requests are received with a TOS value of 0x38.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: Cancelled
- Scenario 2: Cancelled
- Scenario 3: Cancelled
- Scenario 4: Cancelled
- Scenario 5: Cancelled
- Scenario 6: Cancelled
- Scenario 7: ping requests are received with a TOS value of 0x28.
- Scenario 8: ping requests are received with a TOS value of 0x30.
- Scenario 9: ping requests are received with a TOS value of 0x38.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.

Failure level : None
Remarks   : The scenarios cancelled above are obsolete since the link between MESCAL51 and MESCAL21 was broken.

Test Reference : **TB_P1_FUNCT/DSSW/8**
Test Purpose   : Verify DSCP swapping at egress of MESCAL61.

Procedure   : Configure local-QoS-classes of MESCAL61 as defined in testbed Configuration
section. Practically, execute `qsa` script in MESCAL61.

Launch a traffic analyzer in:
- MESCAL41 that captures traffic going through eth5.
- MESCAL43 that captures traffic going through eth0.
- MESCAL71 that captures traffic going through eth1.
- MESCAL81 that captures traffic going through eth2.

Execute successively the following commands from a bash terminal of MESCAL61:
- Scenario 1: ping –Q 0xc8 41.41.41.1
- Scenario 2: ping –Q 0xd0 41.41.41.1
- Scenario 3: ping –Q 0xd8 41.41.41.1
- Scenario 4: ping 41.41.41.1
- Scenario 5: ping –Q 0x55 41.41.41.1
- Scenario 6: ping –Q 0x144 41.41.41.1
- Scenario 7: ping –Q 0xc8 43.43.43.1
- Scenario 8: ping –Q 0xd0 43.43.43.1
- Scenario 9: ping –Q 0xd8 43.43.43.1
- Scenario 10: ping 43.43.43.1
- Scenario 11: ping –Q 0x55 43.43.43.1
- Scenario 12: ping –Q 0x144 43.43.43.1
- Scenario 13: ping –Q 0xc8 6.6.6.2
- Scenario 14: ping –Q 0xd0 6.6.6.2
- Scenario 15: ping –Q 0xd8 6.6.6.2
- Scenario 16: ping 6.6.6.2
- Scenario 17: ping –Q 0x55 6.6.6.2
- Scenario 18: ping –Q 0x144 6.6.6.2
- Scenario 19: ping –Q 0xc8 6.6.6.6
- Scenario 20: ping –Q 0xd0 6.6.6.6
- Scenario 21: ping –Q 0xd8 6.6.6.6
- Scenario 22: ping 6.6.6.6
- Scenario 23: ping –Q 0x55 6.6.6.6
- Scenario 24: ping –Q 0x144 6.6.6.6

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x48.
- Scenario 2: ping requests are received with a TOS value of 0x50.
- Scenario 3: ping requests are received with a TOS value of 0x58.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x48.
- Scenario 8: ping requests are received with a TOS value of 0x50.
- Scenario 9: ping requests are received with a TOS value of 0x58.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0xa8.
- Scenario 14: ping requests are received with a TOS value of 0xb0.
- Scenario 15: ping requests are received with a TOS value of 0xb8.
- Scenario 16: ping requests are received with a TOS value of 0x00.

- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0xe8.
- Scenario 20: ping requests are received with a TOS value of 0xf0.
- Scenario 21: ping requests are received with a TOS value of 0xf8.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x48.
- Scenario 2: ping requests are received with a TOS value of 0x50.
- Scenario 3: ping requests are received with a TOS value of 0x58.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.
- Scenario 7: ping requests are received with a TOS value of 0x48.
- Scenario 8: ping requests are received with a TOS value of 0x50.
- Scenario 9: ping requests are received with a TOS value of 0x58.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: ping requests are received with a TOS value of 0x00.
- Scenario 12: ping requests are received with a TOS value of 0x00.
- Scenario 13: ping requests are received with a TOS value of 0xa8.
- Scenario 14: ping requests are received with a TOS value of 0xb0.
- Scenario 15: ping requests are received with a TOS value of 0xb8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: ping requests are received with a TOS value of 0x00.
- Scenario 18: ping requests are received with a TOS value of 0x00.
- Scenario 19: ping requests are received with a TOS value of 0xe8.
- Scenario 20: ping requests are received with a TOS value of 0xf0.
- Scenario 21: ping requests are received with a TOS value of 0xf8.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: ping requests are received with a TOS value of 0x00.
- Scenario 24: ping requests are received with a TOS value of 0x00.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/9**
Test Purpose   : Verify DSCP swapping at egress of MESCAL71.
Procedure   : Configure local-QoS-classes of MESCAL71 as defined in testbed Configuration section. Practically, execute **qsa** script in MESCAL71.

Launch a traffic analyzer in:
- MESCAL61 that captures traffic going through eth2.

Execute successively the following commands from a bash terminal of MESCAL71:
- Scenario 1: ping –Q 0xe8 6.6.6.1
- Scenario 2: ping –Q 0xf0 6.6.6.1
- Scenario 3: ping –Q 0xf8 6.6.6.1
- Scenario 4: ping 6.6.6.1

- Scenario 5: ping –Q 0x55 6.6.6.1
- Scenario 6: ping –Q 0x144 6.6.6.1

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xa8.
- Scenario 2: ping requests are received with a TOS value of 0xb0.
- Scenario 3: ping requests are received with a TOS value of 0xb8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xa8.
- Scenario 2: ping requests are received with a TOS value of 0xb0.
- Scenario 3: ping requests are received with a TOS value of 0xb8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/10**
Test Purpose : Verify DSCP swapping at egress of MESCAL81.
Procedure   : Configure local-QoS-classes of MESCAL81 as defined in testbed Configuration section. Practically, execute **qsa** script in MESCAL81.

Launch a traffic analyzer in:
- MESCAL61 that captures traffic going through eth3.

Execute successively the following commands from a bash terminal of MESCAL81:
- Scenario 1: ping –Q 0xe8 6.6.6.5
- Scenario 2: ping –Q 0xf0 6.6.6.5
- Scenario 3: ping –Q 0xf8 6.6.6.5
- Scenario 4: ping 6.6.6.5
- Scenario 5: ping –Q 0x55 6.6.6.5
- Scenario 6: ping –Q 0x144 6.6.6.5

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.

- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: ping requests are received with a TOS value of 0x00.
- Scenario 6: ping requests are received with a TOS value of 0x00.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/11**

Test Purpose   : Verify DSCP swapping at ingress of MESCAL11.

Procedure   : execute **qsdel** in both MESCAL31 and MESCAL21 and **qsi** in MESCAL11. Launch a traffic analyzer in MESCAL21 that captures traffic going through eth6. Also launch a traffic analyzer in MESCAL31 that captures traffic going through eth1. Ensure that BGPD is started between AS1 and AS2, AS1 and AS3.

Execute successively the following commands in MESCAL31; examine traffic going through interface eth0 of MESCAL11:

- Scenario 1: ping –Q 0x88 1.1.1.6
- Scenario 2: ping –Q 0x90 1.1.1.6
- Scenario 3: ping –Q 0x98 1.1.1.6
- Scenario 4: ping 1.1.1.6
- Scenario 5: ping –Q 0x53 1.1.1.6
- Scenario 6: ping –Q 0x144 1.1.1.6

Execute successively the following commands in MESCAL21; examine traffic going through interface eth1 of MESCAL11:

- Scenario 7: ping –Q 0x68 1.1.1.2
- Scenario 8: ping –Q 0x70 1.1.1.2
- Scenario 9: ping –Q 0x78 1.1.1.2
- Scenario 10: ping 1.1.1.6
- Scenario 11: ping –Q 0x98 1.1.1.2
- Scenario 12: ping –Q 0x144 1.1.1.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x28.
- Scenario 2: ping requests are received with a TOS value of 0x30.
- Scenario 3: ping requests are received with a TOS value of 0x38.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x28.
- Scenario 8: ping requests are received with a TOS value of 0x30.
- Scenario 9: ping requests are received with a TOS value of 0x38.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x28.

- Scenario 2: ping requests are received with a TOS value of 0x30.
- Scenario 3: ping requests are received with a TOS value of 0x38.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x28.
- Scenario 8: ping requests are received with a TOS value of 0x30.
- Scenario 9: ping requests are received with a TOS value of 0x38.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/12**

Test Purpose   : Verify DSCP swapping at ingress of MESCAL21.

Procedure   : Ensure that BGP sessions are activated between AS2 and AS1, AS2 and AS4 and AS2 and AS5. Execute **qsa** in MESCAL21 and **qsdel** script in:

- MESCAL11
- MESCAL42
- MESCAL51

Launch a traffic analyzer in the following interfaces:

- Eth1 of MESCAL11
- Eth4 of MESCAL42

Execute successively the following commands from a bash terminal of MESCAL11; examine traffic going through eth4 of MESCAL42:
- Scenario 1: ping –Q 0x68 2.2.2.2
- Scenario 2: ping –Q 0x70 2.2.2.2
- Scenario 3: ping –Q 0x78 2.2.2.2
- Scenario 4: ping 2.2.2.2
- Scenario 5: ping –Q 0x98 2.2.2.2
- Scenario 6: ping –Q 0x144 2.2.2.2

Execute successively the following commands from a bash terminal of MESCAL42; examine traffic going through eth1 of MESCAL1:
- Scenario 7: ping –Q 0xc8 1.1.1.5
- Scenario 8: ping –Q 0xd0 1.1.1.5
- Scenario 9: ping –Q 0xd8 1.1.1.5
- Scenario 10: ping 2.2.2.1
- Scenario 11: ping –Q 0x98 1.1.1.5
- Scenario 12: ping –Q 0x144 1.1.1.5

Execute successively the following commands from a bash terminal of MESCAL51; examine traffic going through eth1 of MESCAL11:
- Scenario 13: ping –Q 0xe8 1.1.1.5
- Scenario 14: ping –Q 0xf0 1.1.1.5
- Scenario 15: ping –Q 0xf8 1.1.1.5
- Scenario 16: ping 1.1.1.5

- Scenario 17: ping –Q 0x98 1.1.1.5
- Scenario 18: ping –Q 0x144 1.1.1.5

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xd8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x68.
- Scenario 8: ping requests are received with a TOS value of 0x70.
- Scenario 9: ping requests are received with a TOS value of 0x78.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0x68.
- Scenario 14: ping requests are received with a TOS value of 0x70.
- Scenario 15: ping requests are received with a TOS value of 0x78.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xd8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x68.
- Scenario 8: ping requests are received with a TOS value of 0x70.
- Scenario 9: ping requests are received with a TOS value of 0x78.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: Cancelled
- Scenario 14: Cancelled
- Scenario 15: Cancelled
- Scenario 16: Cancelled
- Scenario 17: Cancelled
- Scenario 18: Cancelled

Failure level : None
Remarks   : The link between MESCAL51 and MESCAL21 was broken.

Test Reference : **TB_P1_FUNCT/DSSW/13**

Test Purpose : Verify DSCP swapping at ingress of MESCAL31.

Procedure : Ensure that BGP sessions are activated between AS3 and AS1 and AS3 and AS4. Execute **qsa** in MESCAL21 and **qsdel** script in:

- ▪ MESCAL11
- ▪ MESCAL42
- ▪ MESCAL41

Launch a traffic analyzer in the following interfaces:

- • Eth0 of MESCAL11
- • Eth1 of MESCAL42

Execute successively the following commands from a bash terminal of MESCAL11; examine traffic going through eth1 of MESCAL42:
- • Scenario 1: ping –Q 0x88 3.3.3.6
- • Scenario 2: ping –Q 0x90 3.3.3.6
- • Scenario 3: ping –Q 0x98 3.3.3.6
- • Scenario 4: ping 3.3.3.6
- • Scenario 5: ping –Q 0x55 3.3.3.6
- • Scenario 6: ping –Q 0x144 3.3.3.6

Execute successively the following commands from a bash terminal of MESCAL41; examine traffic going through eth0 of MESCAL11:
- • Scenario 7: ping –Q 0xe8 1.1.1.1
- • Scenario 8: ping –Q 0xf0 1.1.1.1
- • Scenario 9: ping –Q 0xf8 1.1.1.1
- • Scenario 10: ping 1.1.1.1
- • Scenario 11: ping –Q 0x98 1.1.1.1
- • Scenario 12: ping –Q 0x144 1.1.1.1

Execute successively the following commands from a bash terminal of MESCAL42; examine traffic going through eth0 of MESCAL11:
- • Scenario 13: ping –Q 0xe8 1.1.1.1
- • Scenario 14: ping –Q 0xf0 1.1.1.1
- • Scenario 15: ping –Q 0xf8 1.1.1.1
- • Scenario 16: ping 1.1.1.1
- • Scenario 17: ping –Q 0x98 1.1.1.1
- • Scenario 18: ping –Q 0x144 1.1.1.1

Expected result : Within the traffic analyzer, following results must be obtained:

- • Scenario 1: ping requests are received with a TOS value of 0xe8.
- • Scenario 2: ping requests are received with a TOS value of 0xf0.
- • Scenario 3: ping requests are received with a TOS value of 0xf8.
- • Scenario 4: ping requests are received with a TOS value of 0x00.
- • Scenario 5: Unreachable destination.
- • Scenario 6: Unreachable destination.
- • Scenario 7: ping requests are received with a TOS value of 0x88.
- • Scenario 8: ping requests are received with a TOS value of 0x90.
- • Scenario 9: ping requests are received with a TOS value of 0x98.
- • Scenario 10: ping requests are received with a TOS value of 0x00.
- • Scenario 11: Unreachable destination.
- • Scenario 12: Unreachable destination.
- • Scenario 13: ping requests are received with a TOS value of 0x88.
- • Scenario 14: ping requests are received with a TOS value of 0x90.
- • Scenario 15: ping requests are received with a TOS value of 0x98.
- • Scenario 16: ping requests are received with a TOS value of 0x00.

- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x88.
- Scenario 8: ping requests are received with a TOS value of 0x90.
- Scenario 9: ping requests are received with a TOS value of 0x98.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0x88.
- Scenario 14: ping requests are received with a TOS value of 0x90.
- Scenario 15: ping requests are received with a TOS value of 0x98.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/14**

Test Purpose   : Verify DSCP swapping at ingress of MESCAL41.

Procedure   : Ensure that BGP is activated between AS4 and AS AS4 and AS6. Execute **qsdel** in MESCAL31 and MESCAL61. And execute **qsa** in MESCAL41.

Execute successively the following commands from a bash terminal of MESCAL61, check then what is received in eth6 of MESCAL31:
- Scenario 1: ping –Q 0x48 3.3.3.1
- Scenario 2: ping –Q 0x50 3.3.3.1
- Scenario 3: ping –Q 0x58 3.3.3.1
- Scenario 4: ping 3.3.3.1
- Scenario 5: ping –Q 0x70 3.3.3.1
- Scenario 6: ping –Q 0x144 3.3.3.1

Execute successively the following commands from a bash terminal of MESCAL31, check then what is received in eth4 of MESCAL61:
- Scenario 7: ping –Q 0xe8 41.41.41.2
- Scenario 8: ping –Q 0xf0 41.41.41.2
- Scenario 9: ping –Q 0xf8 41.41.41.2
- Scenario 10: ping 41.41.41.2
- Scenario 11: ping –Q 0x55 41.41.41.2
- Scenario 12: ping –Q 0x144 41.41.41.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.

- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x48.
- Scenario 8: ping requests are received with a TOS value of 0x50.
- Scenario 9: ping requests are received with a TOS value of 0x58.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x48.
- Scenario 8: ping requests are received with a TOS value of 0x50.
- Scenario 9: ping requests are received with a TOS value of 0x58.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/15**

Test Purpose : Verify DSCP swapping at ingress of MESCAL42.

Procedure : Ensure that BGP is activated between AS4 and AS3, AS4 and AS2 and AS4 and AS5. Execute `qsdel` in MESCAL21, MESCAL31 and MESCAL51. And execute `qsa` in MESCAL42.

Execute successively the following commands from a bash terminal of MESCAL31, check then what is received in eth0 of MESCAL21:
- Scenario 1: ping –Q 0xe8 2.2.2.1
- Scenario 2: ping –Q 0xf0 2.2.2.1
- Scenario 3: ping –Q 0xf8 2.2.2.1
- Scenario 4: ping 2.2.2.1
- Scenario 5: ping –Q 0x55 2.2.2.1
- Scenario 6: ping –Q 0x144 2.2.2.1

Execute successively the following commands from a bash terminal of MESCAL21, check then what is received in eth0 of MESCAL31:
- Scenario 7: ping –Q 0xc8 3.3.3.5
- Scenario 8: ping –Q 0xd0 3.3.3.5
- Scenario 9: ping –Q 0xd8 3.3.3.5
- Scenario 10: ping 2.2.2.1
- Scenario 11: ping –Q 0x55 3.3.3.5

- Scenario 12: ping –Q 0x144 3.3.3.5

Execute successively the following commands from a bash terminal of MESCAL51, and check what is received in eth0 of MESCAL31:
- Scenario 7: ping –Q 0x28 3.3.3.5
- Scenario 8: ping –Q 0x30 3.3.3.5
- Scenario 9: ping –Q 0x38 3.3.3.5
- Scenario 10: ping 3.3.3.5
- Scenario 11: ping –Q 0x55 3.3.3.5
- Scenario 12: ping –Q 0x144 3.3.3.5

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xc8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xc8.
- Scenario 2: ping requests are received with a TOS value of 0xd0.
- Scenario 3: ping requests are received with a TOS value of 0xc8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/16**

Test Purpose   : Verify DSCP swapping at ingress of MESCAL43.

Procedure   : Ensure that BGP is activated between AS4 and AS6. Execute `qsdel` in MESCAL61 and `qsa` in MESCAL43.

Execute successively the following commands from a bash terminal of MESCAL61, and check what is received in eth3 of MESCAL41:
- Scenario 1: ping –Q 0x48 41.41.41.5
- Scenario 2: ping –Q 0x50 41.41.41.5
- Scenario 3: ping –Q 0x58 41.41.41.5
- Scenario 4: ping 41.41.41.5
- Scenario 5: ping –Q 0x55 41.41.41.5
- Scenario 6: ping –Q 0x144 41.41.41.5

Execute successively the following commands from a bash terminal of MESCAL61, and check what is received in eth3 of MESCAL42:
- Scenario 7: ping –Q 0x48 42.42.42.1
- Scenario 8: ping –Q 0x50 42.42.42.1
- Scenario 9: ping –Q 0x58 42.42.42.1
- Scenario 10: ping 42.42.42.1
- Scenario 11: ping –Q 0x55 42.42.42.1
- Scenario 12: ping –Q 0x144 42.42.42.1

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x88
- Scenario 8: ping requests are received with a TOS value of 0x98
- Scenario 9: ping requests are received with a TOS value of 0x98
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x88.
- Scenario 2: ping requests are received with a TOS value of 0x90.
- Scenario 3: ping requests are received with a TOS value of 0x98.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0x88
- Scenario 8: ping requests are received with a TOS value of 0x98
- Scenario 9: ping requests are received with a TOS value of 0x98

- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/17**

Test Purpose   : Verify DSCP swapping at egress of MESCAL51.

Procedure   : Ensure that BGP is activated between AS5 and AS2 and between AS4 and AS5. Execute `qsdel` in MESCAL21 and MESCAL42. And execute `qsa` in MESCAL51.

Execute successively the following commands from a bash terminal of MESCAL21, and check what is received in eth5 of MESCAL42:
- Scenario 1: ping –Q 0xe8 42.42.42.5
- Scenario 2: ping –Q 0xf0 42.42.42.5
- Scenario 3: ping –Q 0xf8 42.42.42.5
- Scenario 4: ping 42.42.42.5
- Scenario 5: ping –Q 0x55 42.42.42.5
- Scenario 6: ping –Q 0x144 42.42.42.5

Execute successively the following commands from a bash terminal of MESCAL42, and check what is received in eth5 of MESCAL21:
- Scenario 7: ping –Q 0x28 2.2.2.5
- Scenario 8: ping –Q 0x30 2.2.2.5
- Scenario 9: ping –Q 0x38 2.2.2.5
- Scenario 10: ping 2.2.2.5
- Scenario 11: ping –Q 0x55 2.2.2.5
- Scenario 12: ping –Q 0x144 2.2.2.5

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0x28.
- Scenario 2: ping requests are received with a TOS value of 0x30.
- Scenario 3: ping requests are received with a TOS value of 0x38.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0x28.
- Scenario 2: ping requests are received with a TOS value of 0x30.
- Scenario 3: ping requests are received with a TOS value of 0x38.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.

- Scenario 7: Cancelled
- Scenario 8: Cancelled
- Scenario 9: Cancelled
- Scenario 10: Cancelled
- Scenario 11: Cancelled
- Scenario 12: Cancelled

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/18**

Test Purpose   : Verify DSCP swapping at egress of MESCAL61.

Procedure   : Ensure that BGP is activated between AS6 and AS7, AS6 and AS8 and between AS4 and AS6. Execute **qsdel** in MESCAL41, MESCAL43, MESCAL71 and MESCAL81. And execute **qsa** in MESCAL61.

Execute successively the following commands from a bash terminal of MESCAL41, and check what is received in eth2 of MESCAL81:
- Scenario 1: ping –Q 0x48 6.6.6.6.6
- Scenario 2: ping –Q 0x50 6.6.6.6.6
- Scenario 3: ping –Q 0x58 6.6.6.6.6
- Scenario 4: ping 6.6.6.6.6
- Scenario 5: ping –Q 0x55 6.6.6.6.6
- Scenario 6: ping –Q 0x144 6.6.6.6.6

Execute successively the following commands from a bash terminal of MESCAL43, and check what is received in eth2 of MESCAL81:
- Scenario 7: ping –Q 0x48 6.6.6.6.6
- Scenario 8: ping –Q 0x50 6.6.6.6.6
- Scenario 9: ping –Q 0x58 6.6.6.6.6
- Scenario 10: ping 6.6.6.6.6
- Scenario 11: ping –Q 0x55 6.6.6.6.6
- Scenario 12: ping –Q 0x144 6.6.6.6.6

Execute successively the following commands from a bash terminal of MESCAL71, and check what is received in eth2 of MESCAL81:
- Scenario 13: ping –Q 0xa8 6.6.6.6
- Scenario 14: ping –Q 0xa0 6.6.6.6
- Scenario 15: ping –Q 0xa8 6.6.6.6
- Scenario 16: ping 6.6.6.6
- Scenario 17: ping –Q 0x55 6.6.6.6
- Scenario 18: ping –Q 0x144 6.6.6.6

Execute successively the following commands from a bash terminal of MESCAL81, and check what is received in eth1 of MESCAL71:
- Scenario 19: ping –Q 0xe8 6.6.6.2
- Scenario 20: ping –Q 0xf0 6.6.6.2
- Scenario 21: ping –Q 0xf8 6.6.6.2
- Scenario 22: ping 6.6.6.2
- Scenario 23: ping –Q 0x55 6.6.6.2
- Scenario 24: ping –Q 0x144 6.6.6.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.
- Scenario 19: ping requests are received with a TOS value of 0xa8.
- Scenario 20: ping requests are received with a TOS value of 0xb0.
- Scenario 21: ping requests are received with a TOS value of 0xb8.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: Unreachable destination.
- Scenario 24: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.
- Scenario 7: ping requests are received with a TOS value of 0xe8.
- Scenario 8: ping requests are received with a TOS value of 0xf0.
- Scenario 9: ping requests are received with a TOS value of 0xf8.
- Scenario 10: ping requests are received with a TOS value of 0x00.
- Scenario 11: Unreachable destination.
- Scenario 12: Unreachable destination.
- Scenario 13: ping requests are received with a TOS value of 0xe8.
- Scenario 14: ping requests are received with a TOS value of 0xf0.
- Scenario 15: ping requests are received with a TOS value of 0xf8.
- Scenario 16: ping requests are received with a TOS value of 0x00.
- Scenario 17: Unreachable destination.
- Scenario 18: Unreachable destination.
- Scenario 19: ping requests are received with a TOS value of 0xa8.
- Scenario 20: ping requests are received with a TOS value of 0xb0.
- Scenario 21: ping requests are received with a TOS value of 0xb8.
- Scenario 22: ping requests are received with a TOS value of 0x00.
- Scenario 23: Unreachable destination.
- Scenario 24: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/19**

Test Purpose   : Verify DSCP swapping at egress of MESCAL71.

Procedure   : Ensure that BGP is activated between AS6 and AS7. Execute **qsdel** in MESCAL61. And execute **qsa** in MESCAL71.

Execute successively the following commands from a bash terminal of MESCAL61:
- Scenario 1: ping –Q 0xa8 6.6.6.2
- Scenario 2: ping –Q 0xb0 6.6.6.2
- Scenario 3: ping –Q 0xb8 6.6.6.2
- Scenario 4: ping 6.6.6.2
- Scenario 5: ping –Q 0x55 6.6.6.2
- Scenario 6: ping –Q 0x144 6.6.6.2

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xa8.
- Scenario 2: ping requests are received with a TOS value of 0xb0.
- Scenario 3: ping requests are received with a TOS value of 0xb8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xa8.
- Scenario 2: ping requests are received with a TOS value of 0xb0.
- Scenario 3: ping requests are received with a TOS value of 0xb8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/20**

Test Purpose   : Verify DSCP swapping at egress of MESCAL81.

Procedure   : execute **qsdel** in MESCAL61. And execute **qsa** in MESCAL81.

Execute successively the following commands from a bash terminal of MESCAL61:
- Scenario 1: ping –Q 0xe8 6.6.6.6
- Scenario 2: ping –Q 0xf0 6.6.6.6
- Scenario 3: ping –Q 0xf8 6.6.6.6
- Scenario 4: ping 6.6.6.6
- Scenario 5: ping –Q 0x55 6.6.6.6
- Scenario 6: ping –Q 0x144 6.6.6.6

Expected result : Within the traffic analyzer, following results must be obtained:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.

- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: ping requests are received with a TOS value of 0xe8.
- Scenario 2: ping requests are received with a TOS value of 0xf0.
- Scenario 3: ping requests are received with a TOS value of 0xf8.
- Scenario 4: ping requests are received with a TOS value of 0x00.
- Scenario 5: Unreachable destination.
- Scenario 6: Unreachable destination.

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/DSSW/21**
Test Purpose   : Verify the QoS configuration of the whole testbed.
Procedure   :

Log to MESCAL11, then execute the **pfgping** script. The scenarios are linked together; the starting configuration of scenario N+1 is the one for Scenario N.

- Scenario 1: Execute **qsa** script in all router, or execute **initqos** from MESCAL_ADM.
- Scenario 2: execute **qsdel** in MESCAL31 and MESCAL21.
- Scenario 3: execute **qsi-eth1** in MESCAL31 and **qsi-eth6** in MESCAL21.
- Scenario 4: execute **qsa** in MESCAL31 and MESCAL21.

Expected result : the following results must be obtained as output of **pfgping** script.

- Scenario 1: All destinations are reachable in all meta-QoS-class planes.
- Scenario 2: All destinations are reachable in best effort plane. But only MESCAL31 and MESCAL21 interfaces are reachable in the rest of meta-QoS-class planes.
- Scenario 3: All destinations are reachable in best effort plane. But only MESCAL31 and MESCAL21 interfaces are reachable in the rest of meta-QoS-class planes.
- Scenario 4: All destinations are reached in all meta-QoS-class planes.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: All destinations are reachable in all meta-QoS-class planes.
- Scenario 2: All destinations are reachable in best effort plane. But only MESCAL31 and MESCAL21 interfaces are reachable in the rest of meta-QoS-class planes.
- Scenario 3: All destinations are reachable in best effort plane. But only MESCAL31 and MESCAL21 interfaces are reachable in the rest of meta-QoS-class planes.
- Scenario 4: All destinations are reached in all meta-QoS-class planes.

Failure level : None
Remarks   : None

10.1.3 TB_P1_FUNCT/SHAP

Tests that are to be carried in this section assume that the following bandwidth configuration is deployed in testbed. Before beginning executing these tests, verify that TC scripts are conform to this configuration.[4]

AS-AS	MC	BW (Mbit/s) →	BW (Mbit/s) ←
AS1-AS2	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 5 Min is 2	Maximum is 5 Min is 2
AS1-AS3	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 5 Min is 2	Maximum is 5 Min is 2
AS2-AS4	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 7 Min is 4	Maximum is 7 Min is 4
AS2-AS5	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 5 Min is 2	Maximum is 5 Min is 2
AS3-AS4	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 7 Min is 4	Maximum is 7 Min is 4
AS4-AS5	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 7 Min is 4	Maximum is 7 Min is 4
AS4-AS6	MC1	3	3
	MC2	3	3
	MC3	3	3
	MC4	Max is 10 Min is 1	Max is 10 Min is 1
AS6-AS7	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 5 Min is 2	Maximum is 5 Min is 2
AS6-AS8	MC1	1	1
	MC2	1	1
	MC3	1	1
	MC4	Maximum is 5 Min is 2	Maximum is 5 Min is 2

Table 36 - Bandwidth Threshold per meta-QoS-class

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[4] The link between AS2 and AS5 is no more alive. Thus, test related to the link between these two routers will be concelled.

Test Reference : **TB_P1_FUNCT/SHAP/1**
Test Purpose : Verify shaping configuration in MESCAL11.
Procedure : Log to MESCAL11, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 2: Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 3: Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 4: Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 6: Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 7: Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 8: Stream with tos=0x38 and throughput = 5Mbit/s towards 31.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 10: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 11: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 12: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 14: Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 15: Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 16: Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 18: Stream with tos=0x28 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 19: Stream with tos=0x30 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 20: Stream with tos=0x38 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 22: Stream with tos=0x28 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 23: Stream with tos=0x30 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 24: Stream with tos=0x38 and throughput = 2Mbit/s towards 21.0.0.2

- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 26: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 27: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 28: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 30: Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 31: Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 32: Stream with tos=0x38 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 34: Stream with tos=0x28 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 35: Stream with tos=0x30 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 36: Stream with tos=0x38 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 38: Stream with tos=0x28 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 39: Stream with tos=0x30 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 40: Stream with tos=0x38 and throughput = 2Mbit/s towards 31.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result : The following results must be obtained:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.

- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 5Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.

- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 5Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/2**

Test Purpose   : Verify shaping configuration in MESCAL71.

Procedure   : Log to MESCAL71, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 2: Stream with tos=0xe8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 3: Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 4: Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 6: Stream with tos=0xe8 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 7: Stream with tos=0xf0 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 8: Stream with tos=0xf8 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 10: Stream with tos=0xe8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 11: Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 12: Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 14: Stream with tos=0xe8 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 15: Stream with tos=0xf0 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 16: Stream with tos=0xf8 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 18: Stream with tos=0xe8 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 19: Stream with tos=0xf0 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 20: Stream with tos=0xf8 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Accepted traffic has a rate of 1Mbit/s

- Scenario 11: Accepted traffic has a rate of 1Mbit/s

- Scenario 12: Accepted traffic has a rate of 1Mbit/s

- Scenario 13: No drop.

- Scenario 14: No drop.

- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: Accepted traffic has a rate of 5Mbit/s.

- Scenario 18: Accepted traffic has a rate of 1Mbit/s.

- Scenario 19: Accepted traffic has a rate of 1Mbit/s.

- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Failure level   : None
Remarks   : None

Test Reference   : **TB_P1_FUNCT/SHAP/3**

Test Purpose   : Verify shaping configuration in MESCAL81.

Procedure   : Log to MESCAL81, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 2: Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 3: Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 4: Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 6: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 7: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 8: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 10: Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 11: Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 12: Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 14: Stream with tos=0x28 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 15: Stream with tos=0x30 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 16: Stream with tos=0x38 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 18: Stream with tos=0x28 and throughput = 2Mbit/s towards 61.0.0.2
- Scenario 19: Stream with tos=0x30 and throughput = 2Mbit/s towards 61.0.0.2
- Scenario 20: Stream with tos=0x38 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.

- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/4**

Test Purpose : Verify shaping configuration in MESCAL51.

Procedure : Log to MESCAL51, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 2: Stream with tos=0xa8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 3: Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 4: Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 6: Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 7: Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 8: Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 10: Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 11: Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 12: Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 14: Stream with tos=0xa8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 15: Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 16: Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 18: Stream with tos=0xa8 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 19: Stream with tos=0xb0 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 20: Stream with tos=0xb8 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 22: Stream with tos=0xa8 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 23: Stream with tos=0xb0 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 24: Stream with tos=0xb8 and throughput = 2Mbit/s towards 21.0.0.2

- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 26: Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 27: Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 28: Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 29: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 30: Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 31: Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 32: Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 34: Stream with tos=0xa8 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 35: Stream with tos=0xb0 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 36: Stream with tos=0xb8 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 37: Stream with tos=0x00 and throughput = 8Mbit/s towards 42.0.0.2

- Scenario 38: Stream with tos=0xa8 and throughput = 2Mbit/s towards 42.0.0.2

- Scenario 39: Stream with tos=0xb0 and throughput = 2Mbit/s towards 42.0.0.2

- Scenario 40: Stream with tos=0xb8 and throughput = 2Mbit/s towards 42.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.

- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: Cancelled.
- Scenario 2: Cancelled.
- Scenario 3: Cancelled.
- Scenario 4: Cancelled.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: Cancelled.
- Scenario 10: Cancelled.
- Scenario 11: Cancelled.
- Scenario 12: Cancelled.
- Scenario 13: Cancelled.
- Scenario 14: Cancelled
- Scenario 15: Cancelled
- Scenario 16: Cancelled
- Scenario 17: Cancelled.
- Scenario 18: Cancelled.
- Scenario 19: Cancelled.
- Scenario 20: Cancelled.
- Scenario 21: Cancelled
- Scenario 22: Cancelled
- Scenario 23: Cancelled

- ▪ Scenario 24: Cancelled
- ▪ Scenario 25: No drop.
- ▪ Scenario 26: No drop.
- ▪ Scenario 27: No drop.
- ▪ Scenario 28: No drop.
- ▪ Scenario 29: No drop.
- ▪ Scenario 30: Accepted traffic has a rate of 1Mbit/s
- ▪ Scenario 31: Accepted traffic has a rate of 1Mbit/s
- ▪ Scenario 32: Accepted traffic has a rate of 1Mbit/s
- ▪ Scenario 33: No drop.
- ▪ Scenario 34: No drop.
- ▪ Scenario 35: No drop.
- ▪ Scenario 36: No drop.
- ▪ Scenario 37: Accepted traffic has a rate of 7Mbit/s
- ▪ Scenario 38: Accepted traffic has a rate of 1Mbit/s
- ▪ Scenario 39: Accepted traffic has a rate of 1Mbit/s
- ▪ Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/5**

Test Purpose : Verify shaping configuration in MESCAL43.

Procedure : Log to MESCAL43, Configure Smartbit to generate traffic as follows:

- ▪ Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- ▪ Scenario 2: Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

- ▪ Scenario 3: Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2

- ▪ Scenario 4: Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- ▪ Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

- ▪ Scenario 6: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2

- ▪ Scenario 7: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2

- ▪ Scenario 8: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2

- ▪ Scenario 9: Stream with tos=0x00 and throughput = 9Mbit/s towards 61.0.0.2

- ▪ Scenario 10: Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

- ▪ Scenario 11: Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 12: Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 14: Stream with tos=0x88 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 15: Stream with tos=0x90 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 16: Stream with tos=0x98 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 15Mbit/s towards 61.0.0.2
- Scenario 18: Stream with tos=0x88 and throughput = 4Mbit/s towards 61.0.0.2
- Scenario 19: Stream with tos=0x90 and throughput = 4Mbit/s towards 61.0.0.2
- Scenario 20: Stream with tos=0x98 and throughput = 4Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 3Mbit/s
- Scenario 11: Accepted traffic has a rate of 3Mbit/s
- Scenario 12: Accepted traffic has a rate of 3Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 10Mbit/s
- Scenario 18: Accepted traffic has a rate of 3Mbit/s
- Scenario 19: Accepted traffic has a rate of 3Mbit/s
- Scenario 20: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Accepted traffic has a rate of 3Mbit/s

- Scenario 11: Accepted traffic has a rate of 3Mbit/s

- Scenario 12: Accepted traffic has a rate of 3Mbit/s

- Scenario 13: No drop.

- Scenario 14: No drop.

- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: Accepted traffic has a rate of 10Mbit/s

- Scenario 18: Accepted traffic has a rate of 3Mbit/s

- Scenario 19: Accepted traffic has a rate of 3Mbit/s

- Scenario 20: Accepted traffic has a rate of 3Mbit/s

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/6**

Test Purpose : Verify shaping configuration in MESCAL41.

Procedure   : Log to MESCAL41, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 2: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 3: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 4: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 6: Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 7: Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 8: Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 10: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 11: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 12: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 14: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 15: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 16: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 18: Stream with tos=0x88 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 19: Stream with tos=0x90 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 20: Stream with tos=0x98 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
- Scenario 22: Stream with tos=0x88 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 23: Stream with tos=0x90 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 24: Stream with tos=0x98 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 26: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 27: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 28: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 30: Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 31: Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 32: Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 34: Stream with tos=0x88 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 35: Stream with tos=0x90 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 36: Stream with tos=0x98 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 10Mbit/s towards 61.0.0.2
- Scenario 38: Stream with tos=0x88 and throughput = 2Mbit/s towards 61.0.0.2
- Scenario 39: Stream with tos=0x90 and throughput = 2Mbit/s towards 61.0.0.2
- Scenario 40: Stream with tos=0x98 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.

- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 7Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s.
- Scenario 24: Accepted traffic has a rate of 1Mbit/s.
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.

- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 7Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s.
- Scenario 24: Accepted traffic has a rate of 1Mbit/s.
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/7**

Test Purpose   : Verify shaping configuration in MESCAL42.

Procedure   : Log to MESCAL42, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 2: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 3: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 4: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2

- Scenario 6: Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2

- Scenario 7: Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2

- Scenario 8: Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 10: Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 11: Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 12: Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 14: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 15: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 16: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 18: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 19: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 20: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2

- Scenario 22: Stream with tos=0x88 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 23: Stream with tos=0x90 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 24: Stream with tos=0x98 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
- Scenario 26: Stream with tos=0x88 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 27: Stream with tos=0x90 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 28: Stream with tos=0x98 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 29: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 31: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 32: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 34: Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 35: Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 36: Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 38: Stream with tos=0x88 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 39: Stream with tos=0x90 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 40: Stream with tos=0x98 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2
- Scenario 42: Stream with tos=0x88 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 43: Stream with tos=0x90 and throughput = 2Mbit/s towards 21.0.0.2

- Scenario 44: Stream with tos=0x98 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 46: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 47: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 48: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 50: Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 51: Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 52: Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 54: Stream with tos=0x88 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 55: Stream with tos=0x90 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 56: Stream with tos=0x98 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
- Scenario 58: Stream with tos=0x88 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 59: Stream with tos=0x90 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 60: Stream with tos=0x98 and throughput = 2Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result : Following results must be obtained:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.

- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 7Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop.
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s

- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop.
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s

- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 7Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop.
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop.
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.

- Scenario 57: Accepted traffic has a rate of 7Mbit/s

- Scenario 58: Accepted traffic has a rate of 1Mbit/s

- Scenario 59: Accepted traffic has a rate of 1Mbit/s

- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/8**

Test Purpose   : Verify shaping configuration in MESCAL21.

Procedure   : Log to MESCAL21, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 2: Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 3: Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 4: Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 6: Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 7: Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 8: Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 10: Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 11: Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 12: Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2

- Scenario 14: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 11.0.0.2

- Scenario 15: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 11.0.0.2

- Scenario 16: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 11.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 18: Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 19: Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 20: Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 22: Stream with tos=0x48 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 23: Stream with tos=0x50 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 24: Stream with tos=0x58 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 26: Stream with tos=0x48 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 27: Stream with tos=0x50 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 28: Stream with tos=0x58 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 29: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 31: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 32: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 34: Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 35: Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 36: Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 38: Stream with tos=0x48 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 39: Stream with tos=0x50 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 40: Stream with tos=0x58 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 10Mbit/s towards 42.0.0.2
- Scenario 42: Stream with tos=0x48 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 43: Stream with tos=0x50 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 44: Stream with tos=0x58 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 46: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 47: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 48: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 50: Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 51: Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 52: Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 54: Stream with tos=0x48 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 55: Stream with tos=0x50 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 56: Stream with tos=0x58 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 10Mbit/s towards 51.0.0.2
- Scenario 58: Stream with tos=0x48 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 59: Stream with tos=0x50 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 60: Stream with tos=0x58 and throughput = 2Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s

- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Cancelled.

- Scenario 11: Cancelled.
- Scenario 12: Cancelled.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: Cancelled.
- Scenario 46: Cancelled.
- Scenario 47: Cancelled.

- Scenario 48: Cancelled.

- Scenario 49: Cancelled

- Scenario 50: Cancelled

- Scenario 51: Cancelled

- Scenario 52: Cancelled

- Scenario 53: Cancelled.

- Scenario 54: Cancelled.

- Scenario 55: Cancelled.

- Scenario 56: Cancelled.

- Scenario 57: Cancelled

- Scenario 58: Cancelled

- Scenario 59: Cancelled

- Scenario 60: Cancelled

Failure level   : None
Remarks   : None

Test Reference   : **TB_P1_FUNCT/SHAP/9**

Test Purpose   : Verify shaping configuration in MESCAL31.

Procedure   : Log to MESCAL31, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 2: Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 3: Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 4: Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 6: Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 7: Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 8: Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2

- Scenario 10: Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2

- Scenario 11: Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2

- Scenario 12: Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 14: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 15: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 16: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 5Mbit/s towards 11.0.0.2
- Scenario 18: Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 19: Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 20: Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 22: Stream with tos=0x68 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 23: Stream with tos=0x70 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 24: Stream with tos=0x78 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 26: Stream with tos=0x68 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 27: Stream with tos=0x70 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 28: Stream with tos=0x78 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 29: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 31: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 32: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 34: Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 35: Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 36: Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 38: Stream with tos=0x68 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 39: Stream with tos=0x70 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 40: Stream with tos=0x78 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 10Mbit/s towards 42.0.0.2
- Scenario 42: Stream with tos=0x68 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 43: Stream with tos=0x70 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 44: Stream with tos=0x78 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 46: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 47: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 48: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 50: Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 51: Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 52: Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 54: Stream with tos=0x68 and throughput = 1Mbit/s towards 41.0.0.2

- Scenario 55: Stream with tos=0x70 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 56: Stream with tos=0x78 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 58: Stream with tos=0x68 and throughput = 2Mbit/s towards 41.0.0.2
- Scenario 59: Stream with tos=0x70 and throughput = 2Mbit/s towards 41.0.0.2
- Scenario 60: Stream with tos=0x78 and throughput = 2Mbit/s towards 41.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s

- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.

- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Failure level : None
Remarks : None

Test Reference : **TB_P1_FUNCT/SHAP/10**

Test Purpose : Verify shaping configuration in MESCAL61.

Procedure : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 2: Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 3: Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 4: Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 6: Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 7: Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 8: Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 10: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 11: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 12: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 14: Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 15: Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 16: Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 71.0.0.2

- Scenario 18: Stream with tos=0xc8 and throughput = 1Mbit/s towards 71.0.0.2

- Scenario 19: Stream with tos=0xd0and throughput = 1Mbit/s towards 71.0.0.2

- Scenario 20: Stream with tos=0xd8 and throughput = 1Mbit/s towards 71.0.0.2

- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2

- Scenario 22: Stream with tos=0xc8 and throughput = 2Mbit/s towards 71.0.0.2

- Scenario 23: Stream with tos=0xd0and throughput = 2Mbit/s towards 71.0.0.2

- Scenario 24: Stream with tos=0xd8 and throughput = 2Mbit/s towards 71.0.0.2

- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 81.0.0.2

- Scenario 26: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 81.0.0.2

- Scenario 27: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 28: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 30: Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 31: Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 32: Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 34: Stream with tos=0xc8 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 35: Stream with tos=0xd0and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 36: Stream with tos=0xd8 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 38: Stream with tos=0xc8 and throughput = 2Mbit/s towards 81.0.0.2
- Scenario 39: Stream with tos=0xd0and throughput = 2Mbit/s towards 81.0.0.2
- Scenario 40: Stream with tos=0xd8 and throughput = 2Mbit/s towards 81.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.

- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 2Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.

- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 2Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/SHAP/11**

Test Purpose   : Verify shaping configuration in MESCAL61.

Procedure   : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 2: Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 3: Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 4: Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 6: Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 7: Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 8: Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 10: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 11: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 12: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 10Mbit/s towards 41.0.0.2
- Scenario 14: Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 15: Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 16: Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 18: Stream with tos=0xc8 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 19: Stream with tos=0xd0and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 20: Stream with tos=0xd8 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2

- Scenario 22: Stream with tos=0xc8 and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 23: Stream with tos=0xd0and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 24: Stream with tos=0xd8 and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 26: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 27: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 28: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 30: Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 31: Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 32: Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 34: Stream with tos=0xc8 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 35: Stream with tos=0xd0and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 36: Stream with tos=0xd8 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 15Mbit/s towards 43.0.0.2
- Scenario 38: Stream with tos=0xc8 and throughput = 6Mbit/s towards 43.0.0.2
- Scenario 39: Stream with tos=0xd0and throughput = 6Mbit/s towards 43.0.0.2
- Scenario 40: Stream with tos=0xd8 and throughput = 6Mbit/s towards 43.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.

- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 3Mbit/s
- Scenario 15: Accepted traffic has a rate of 3Mbit/s
- Scenario 16: Accepted traffic has a rate of 3Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 10Mbit/s
- Scenario 22: Accepted traffic has a rate of 3Mbit/s
- Scenario 23: Accepted traffic has a rate of 3Mbit/s
- Scenario 24: Accepted traffic has a rate of 3Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 10Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 3Mbit/s
- Scenario 15: Accepted traffic has a rate of 3Mbit/s
- Scenario 16: Accepted traffic has a rate of 3Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 10Mbit/s
- Scenario 22: Accepted traffic has a rate of 3Mbit/s
- Scenario 23: Accepted traffic has a rate of 3Mbit/s
- Scenario 24: Accepted traffic has a rate of 3Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.

- ▪ Scenario 36: No drop.

- ▪ Scenario 37: Accepted traffic has a rate of 10Mbit/s

- ▪ Scenario 38: Accepted traffic has a rate of 3Mbit/s

- ▪ Scenario 39: Accepted traffic has a rate of 3Mbit/s

- ▪ Scenario 40: Accepted traffic has a rate of 3Mbit/s

Failure level   : None
Remarks   : None

10.1.4 TB_P1_FUNCT/POLI

Test Reference : **TB_P1_FUNCT/POLI/1**

Test Purpose   : Verify policing configuration in MESCAL11.

Procedure   : Log to MESCAL11, Configure Smartbit to generate traffic as follows:

- ▪ Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2

- ▪ Scenario 2: Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2

- ▪ Scenario 3: Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2

- ▪ Scenario 4: Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2

- ▪ Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2

- ▪ Scenario 6: Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2

- ▪ Scenario 7: Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2

- ▪ Scenario 8: Stream with tos=0x38 and throughput = 5Mbit/s towards 31.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- ▪ Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
- ▪ Scenario 10: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 21.0.0.2
- ▪ Scenario 11: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 21.0.0.2
- ▪ Scenario 12: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 21.0.0.2
- ▪ Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
- ▪ Scenario 14: Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 15: Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 16: Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 18: Stream with tos=0x28 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 19: Stream with tos=0x30 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 20: Stream with tos=0x38 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 22: Stream with tos=0x28 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 23: Stream with tos=0x30 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 24: Stream with tos=0x38 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 26: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 27: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 28: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 30: Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 31: Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 32: Stream with tos=0x38 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 34: Stream with tos=0x28 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 35: Stream with tos=0x30 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 36: Stream with tos=0x38 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 38: Stream with tos=0x28 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 39: Stream with tos=0x30 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 40: Stream with tos=0x38 and throughput = 2Mbit/s towards 31.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result : The following results must be obtained:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 5Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.

- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 5Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/2**

Test Purpose : Verify policing configuration in MESCAL71.

Procedure : Log to MESCAL71, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 2: Stream with tos=0xe8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 3: Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 4: Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2

Execute **qsa** script in immediate neighbours and **qsdel** in local router from a bash prompt.

- Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 6: Stream with tos=0xe8 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 7: Stream with tos=0xf0 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 8: Stream with tos=0xf8 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 10: Stream with tos=0xe8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 11: Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 12: Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 14: Stream with tos=0xe8 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 15: Stream with tos=0xf0 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 16: Stream with tos=0xf8 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 18: Stream with tos=0xe8 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 19: Stream with tos=0xf0 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 20: Stream with tos=0xf8 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Accepted traffic has a rate of 1Mbit/s

- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Execution date : 15/09/04
Result : Obtained results are as follows:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/3**

Test Purpose : Verify policing configuration in MESCAL81.

Procedure : Log to MESCAL81, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 2: Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 3: Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 4: Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 6: Stream with tos=0x28 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 7: Stream with tos=0x30 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 8: Stream with tos=0x38 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 9: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 10: Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 11: Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 12: Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 14: Stream with tos=0x28 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 15: Stream with tos=0x30 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 16: Stream with tos=0x38 and throughput = 1Mbit/s towards 61.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 18: Stream with tos=0x28 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 19: Stream with tos=0x30 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 20: Stream with tos=0x38 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: Accepted traffic has a rate of 5Mbit/s.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s.
- Scenario 19: Accepted traffic has a rate of 1Mbit/s.
- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Execution date : 15/09/04
Result : Obtained results are:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: Accepted traffic has a rate of 1Mbit/s
- Scenario 11: Accepted traffic has a rate of 1Mbit/s
- Scenario 12: Accepted traffic has a rate of 1Mbit/s
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: Accepted traffic has a rate of 5Mbit/s.

- Scenario 18: Accepted traffic has a rate of 1Mbit/s.

- Scenario 19: Accepted traffic has a rate of 1Mbit/s.

- Scenario 20: Accepted traffic has a rate of 1Mbit/s.

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/4**

Test Purpose : Verify policing configuration in MESCAL51.

Procedure : Log to MESCAL51, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 2: Stream with tos=0xa8 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 3: Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 4: Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 6: Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 7: Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2

- Scenario 8: Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2

- Scenario 10: Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 21.0.0.2

- Scenario 11: Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 21.0.0.2

- Scenario 12: Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 21.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 14: Stream with tos=0xa8 and throughput = 5Mbit/s towards 21.0.0.2

- Scenario 15: Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 16: Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 18: Stream with tos=0xa8 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 19: Stream with tos=0xb0 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 20: Stream with tos=0xb8 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 22: Stream with tos=0xa8 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 23: Stream with tos=0xb0 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 24: Stream with tos=0xb8 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 26: Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 27: Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 28: Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 30: Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 31: Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 32: Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 34: Stream with tos=0xa8 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 35: Stream with tos=0xb0 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 36: Stream with tos=0xb8 and throughput = 1Mbit/s towards 42.0.0.2

- Scenario 37: Stream with tos=0x00 and throughput = 8Mbit/s towards 42.0.0.2

- Scenario 38: Stream with tos=0xa8 and throughput = 2Mbit/s towards 42.0.0.2

- Scenario 39: Stream with tos=0xb0 and throughput = 2Mbit/s towards 42.0.0.2

- Scenario 40: Stream with tos=0xb8 and throughput = 2Mbit/s towards 42.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04

Result   : Obtained results are:
- Scenario 1: Cancelled.
- Scenario 2: Cancelled.
- Scenario 3: Cancelled.
- Scenario 4: Cancelled.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: Cancelled.
- Scenario 10: Cancelled.
- Scenario 11: Cancelled.
- Scenario 12: Cancelled.
- Scenario 13: Cancelled.
- Scenario 14: Cancelled
- Scenario 15: Cancelled
- Scenario 16: Cancelled
- Scenario 17: Cancelled.
- Scenario 18: Cancelled.
- Scenario 19: Cancelled.
- Scenario 20: Cancelled.
- Scenario 21: Cancelled
- Scenario 22: Cancelled
- Scenario 23: Cancelled
- Scenario 24: Cancelled
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s
- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/POLI/5**

Test Purpose   : Verify policing configuration in MESCAL43.

Procedure   : Log to MESCAL43, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 2: Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 3: Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 4: Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2

Execute **qsa** script in immediate neighbours and **qsdel** in local router from a bash prompt.

- Scenario 5: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 6: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 7: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 8: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 9: Stream with tos=0x00 and throughput = 9Mbit/s towards 61.0.0.2
- Scenario 10: Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 11: Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 12: Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 14: Stream with tos=0x88 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 15: Stream with tos=0x90 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 16: Stream with tos=0x98 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 15Mbit/s towards 61.0.0.2
- Scenario 18: Stream with tos=0x88 and throughput = 4Mbit/s towards 61.0.0.2
- Scenario 19: Stream with tos=0x90 and throughput = 4Mbit/s towards 61.0.0.2
- Scenario 20: Stream with tos=0x98 and throughput = 4Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Accepted traffic has a rate of 3Mbit/s

- Scenario 11: Accepted traffic has a rate of 3Mbit/s

- Scenario 12: Accepted traffic has a rate of 3Mbit/s

- Scenario 13: No drop.

- Scenario 14: No drop.

- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: Accepted traffic has a rate of 10Mbit/s

- Scenario 18: Accepted traffic has a rate of 3Mbit/s

- Scenario 19: Accepted traffic has a rate of 3Mbit/s

- Scenario 20: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Accepted traffic has a rate of 3Mbit/s

- Scenario 11: Accepted traffic has a rate of 3Mbit/s

- Scenario 12: Accepted traffic has a rate of 3Mbit/s

- Scenario 13: No drop.

- Scenario 14: No drop.

- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: Accepted traffic has a rate of 10Mbit/s

- Scenario 18: Accepted traffic has a rate of 3Mbit/s

- Scenario 19: Accepted traffic has a rate of 3Mbit/s

- Scenario 20: Accepted traffic has a rate of 3Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/6**

Test Purpose : Verify policing configuration in MESCAL41.

Procedure : Log to MESCAL41, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 2: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 3: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 4: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 6: Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 7: Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2

- Scenario 8: Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2

Execute **qsa** script in immediate neighbours and **qsdel** in local router from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 10: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 11: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 12: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 14: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 15: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 16: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2

- Scenario 18: Stream with tos=0x88 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 19: Stream with tos=0x90 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 20: Stream with tos=0x98 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
- Scenario 22: Stream with tos=0x88 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 23: Stream with tos=0x90 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 24: Stream with tos=0x98 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 26: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 27: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 28: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 30: Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 31: Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 32: Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 34: Stream with tos=0x88 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 35: Stream with tos=0x90 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 36: Stream with tos=0x98 and throughput = 1Mbit/s towards 61.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 10Mbit/s towards 61.0.0.2
- Scenario 38: Stream with tos=0x88 and throughput = 2Mbit/s towards 61.0.0.2
- Scenario 39: Stream with tos=0x90 and throughput = 2Mbit/s towards 61.0.0.2

- Scenario 40: Stream with tos=0x98 and throughput = 2Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 7Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s.
- Scenario 24: Accepted traffic has a rate of 1Mbit/s.
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.

- Scenario 35: No drop.

- Scenario 36: No drop.

- Scenario 37: Accepted traffic has a rate of 7Mbit/s

- Scenario 38: Accepted traffic has a rate of 3Mbit/s

- Scenario 39: Accepted traffic has a rate of 3Mbit/s

- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: No drop.

- Scenario 11: No drop.

- Scenario 12: No drop.

- Scenario 13: No drop.

- Scenario 14: Accepted traffic has a rate of 1Mbit/s

- Scenario 15: Accepted traffic has a rate of 1Mbit/s

- Scenario 16: Accepted traffic has a rate of 1Mbit/s

- Scenario 17: No drop.

- Scenario 18: No drop.

- Scenario 19: No drop.

- Scenario 20: No drop.

- Scenario 21: Accepted traffic has a rate of 7Mbit/s

- Scenario 22: Accepted traffic has a rate of 1Mbit/s

- Scenario 23: Accepted traffic has a rate of 1Mbit/s.

- Scenario 24: Accepted traffic has a rate of 1Mbit/s.

- Scenario 25: No drop.

- Scenario 26: No drop.

- Scenario 27: No drop.

- Scenario 28: No drop.

- Scenario 29: No drop.

- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 7Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/7**

Test Purpose : Verify policing configuration in MESCAL42.

Procedure : Log to MESCAL42, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 2: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 3: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 4: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 6: Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 7: Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 8: Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 10: Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 11: Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 12: Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2

Execute **qsa** script in immediate neighbours and **qsdel** in local router from a bash prompt.

- Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 14: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 15: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 16: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 18: Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 19: Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 20: Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 22: Stream with tos=0x88 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 23: Stream with tos=0x90 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 24: Stream with tos=0x98 and throughput = 1Mbit/s towards 31.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
- Scenario 26: Stream with tos=0x88 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 27: Stream with tos=0x90 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 28: Stream with tos=0x98 and throughput = 2Mbit/s towards 31.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 29: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 31: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 32: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 21.0.0.2

- Scenario 34: Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 35: Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 36: Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 38: Stream with tos=0x88 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 39: Stream with tos=0x90 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 40: Stream with tos=0x98 and throughput = 1Mbit/s towards 21.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2
- Scenario 42: Stream with tos=0x88 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 43: Stream with tos=0x90 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 44: Stream with tos=0x98 and throughput = 2Mbit/s towards 21.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 46: Stream with tos=0x88 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 47: Stream with tos=0x90 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 48: Stream with tos=0x98 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 50: Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 51: Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 52: Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 54: Stream with tos=0x88 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 55: Stream with tos=0x90 and throughput = 1Mbit/s towards 51.0.0.2

- Scenario 56: Stream with tos=0x98 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
- Scenario 58: Stream with tos=0x88 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 59: Stream with tos=0x90 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 60: Stream with tos=0x98 and throughput = 2Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result : Following results must be obtained:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 7Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s

- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop.
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop.
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.

- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 7Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop.
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.

- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop.
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/8**

Test Purpose : Verify policing configuration in MESCAL21.

Procedure : Log to MESCAL21, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 2: Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 3: Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 4: Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 6: Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2

- ■ Scenario 7: Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2
- ■ Scenario 8: Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2
- ■ Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
- ■ Scenario 10: Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2
- ■ Scenario 11: Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2
- ■ Scenario 12: Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- ■ Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2
- ■ Scenario 14: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 11.0.0.2
- ■ Scenario 15: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 11.0.0.2
- ■ Scenario 16: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 11.0.0.2
- ■ Scenario 17: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- ■ Scenario 18: Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2
- ■ Scenario 19: Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2
- ■ Scenario 20: Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2
- ■ Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 11.0.0.2
- ■ Scenario 22: Stream with tos=0x48 and throughput = 1Mbit/s towards 11.0.0.2
- ■ Scenario 23: Stream with tos=0x50 and throughput = 1Mbit/s towards 11.0.0.2
- ■ Scenario 24: Stream with tos=0x58 and throughput = 1Mbit/s towards 11.0.0.2
- ■ Scenario 25: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- ■ Scenario 26: Stream with tos=0x48 and throughput = 2Mbit/s towards 11.0.0.2
- ■ Scenario 27: Stream with tos=0x50 and throughput = 2Mbit/s towards 11.0.0.2

- Scenario 28: Stream with tos=0x58 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 29: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 31: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 32: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 34: Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 35: Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 36: Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 38: Stream with tos=0x48 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 39: Stream with tos=0x50 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 40: Stream with tos=0x58 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 10Mbit/s towards 42.0.0.2
- Scenario 42: Stream with tos=0x48 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 43: Stream with tos=0x50 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 44: Stream with tos=0x58 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 46: Stream with tos=0x48 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 47: Stream with tos=0x50 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 48: Stream with tos=0x58 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2

- Scenario 50: Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 51: Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 52: Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 54: Stream with tos=0x48 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 55: Stream with tos=0x50 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 56: Stream with tos=0x58 and throughput = 1Mbit/s towards 51.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 10Mbit/s towards 51.0.0.2
- Scenario 58: Stream with tos=0x48 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 59: Stream with tos=0x50 and throughput = 2Mbit/s towards 51.0.0.2
- Scenario 60: Stream with tos=0x58 and throughput = 2Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.

- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.

- Scenario 55: No drop.

- Scenario 56: No drop.

- Scenario 57: Accepted traffic has a rate of 7Mbit/s

- Scenario 58: Accepted traffic has a rate of 1Mbit/s

- Scenario 59: Accepted traffic has a rate of 1Mbit/s

- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:

- Scenario 1: No drop.

- Scenario 2: No drop.

- Scenario 3: No drop.

- Scenario 4: No drop.

- Scenario 5: No drop.

- Scenario 6: No drop.

- Scenario 7: No drop.

- Scenario 8: No drop.

- Scenario 9: No drop.

- Scenario 10: Cancelled.

- Scenario 11: Cancelled.

- Scenario 12: Cancelled.

- Scenario 13: No drop.

- Scenario 14: No drop.

- Scenario 15: No drop.

- Scenario 16: No drop.

- Scenario 17: No drop.

- Scenario 18: Accepted traffic has a rate of 1Mbit/s

- Scenario 19: Accepted traffic has a rate of 1Mbit/s

- Scenario 20: Accepted traffic has a rate of 1Mbit/s

- Scenario 21: No drop.

- Scenario 22: No drop.

- Scenario 23: No drop.

- Scenario 24: No drop.

- Scenario 25: Accepted traffic has a rate of 5Mbit/s

- Scenario 26: Accepted traffic has a rate of 1Mbit/s

- Scenario 27: Accepted traffic has a rate of 1Mbit/s

- Scenario 28: Accepted traffic has a rate of 1Mbit/s

- Scenario 29: No drop.

- Scenario 30: No drop.

- Scenario 31: No drop.

- Scenario 32: No drop.

- Scenario 33: No drop

- Scenario 34: Accepted traffic has a rate of 1Mbit/s

- Scenario 35: Accepted traffic has a rate of 1Mbit/s

- Scenario 36: Accepted traffic has a rate of 1Mbit/s

- Scenario 37: No drop.

- Scenario 38: No drop.

- Scenario 39: No drop.

- Scenario 40: No drop.

- Scenario 41: Accepted traffic has a rate of 7Mbit/s

- Scenario 42: Accepted traffic has a rate of 1Mbit/s

- Scenario 43: Accepted traffic has a rate of 1Mbit/s

- Scenario 44: Accepted traffic has a rate of 1Mbit/s

- Scenario 45: Cancelled.

- Scenario 46: Cancelled.

- Scenario 47: Cancelled.

- Scenario 48: Cancelled.

- Scenario 49: Cancelled

- Scenario 50: Cancelled

- Scenario 51: Cancelled

- Scenario 52: Cancelled

- Scenario 53: Cancelled.

- Scenario 54: Cancelled.

- Scenario 55: Cancelled.

- Scenario 56: Cancelled.

- Scenario 57: Cancelled

- Scenario 58: Cancelled

- Scenario 59: Cancelled

- Scenario 60: Cancelled

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/POLI/9**

Test Purpose : Verify policing configuration in MESCAL31.

Procedure : Log to MESCAL31, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 2: Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 3: Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 4: Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 5: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 6: Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 7: Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 8: Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 9: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 10: Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 11: Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 12: Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2

Execute **qsa** script in immediate neighbours and **qsdel** in local router from a bash prompt.

- Scenario 13: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 14: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 15: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 16: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 5Mbit/s towards 11.0.0.2
- Scenario 18: Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 19: Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 20: Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 1Mbit/s towards 11.0.0.2

- Scenario 22: Stream with tos=0x68 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 23: Stream with tos=0x70 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 24: Stream with tos=0x78 and throughput = 1Mbit/s towards 11.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 26: Stream with tos=0x68 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 27: Stream with tos=0x70 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 28: Stream with tos=0x78 and throughput = 2Mbit/s towards 11.0.0.2
- Scenario 30: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 29: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 31: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 32: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 34: Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 35: Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 36: Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 38: Stream with tos=0x68 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 39: Stream with tos=0x70 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 40: Stream with tos=0x78 and throughput = 1Mbit/s towards 42.0.0.2
- Scenario 41: Stream with tos=0x00 and throughput = 10Mbit/s towards 42.0.0.2
- Scenario 42: Stream with tos=0x68 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 43: Stream with tos=0x70 and throughput = 2Mbit/s towards 42.0.0.2

- Scenario 44: Stream with tos=0x78 and throughput = 2Mbit/s towards 42.0.0.2
- Scenario 45: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 46: Stream with tos=0x68 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 47: Stream with tos=0x70 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 48: Stream with tos=0x78 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 49: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 50: Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 51: Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 52: Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 53: Stream with tos=0x00 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 54: Stream with tos=0x68 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 55: Stream with tos=0x70 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 56: Stream with tos=0x78 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 57: Stream with tos=0x00 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 58: Stream with tos=0x68 and throughput = 2Mbit/s towards 41.0.0.2
- Scenario 59: Stream with tos=0x70 and throughput = 2Mbit/s towards 41.0.0.2
- Scenario 60: Stream with tos=0x78 and throughput = 2Mbit/s towards 41.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.

- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s
- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s

- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.
- Scenario 57: Accepted traffic has a rate of 7Mbit/s
- Scenario 58: Accepted traffic has a rate of 1Mbit/s
- Scenario 59: Accepted traffic has a rate of 1Mbit/s
- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: No drop.
- Scenario 15: No drop.
- Scenario 16: No drop.
- Scenario 17: No drop.
- Scenario 18: Accepted traffic has a rate of 1Mbit/s
- Scenario 19: Accepted traffic has a rate of 1Mbit/s

- Scenario 20: Accepted traffic has a rate of 1Mbit/s
- Scenario 21: No drop.
- Scenario 22: No drop.
- Scenario 23: No drop.
- Scenario 24: No drop.
- Scenario 25: Accepted traffic has a rate of 5Mbit/s
- Scenario 26: Accepted traffic has a rate of 1Mbit/s
- Scenario 27: Accepted traffic has a rate of 1Mbit/s
- Scenario 28: Accepted traffic has a rate of 1Mbit/s
- Scenario 29: No drop.
- Scenario 30: No drop.
- Scenario 31: No drop.
- Scenario 32: No drop.
- Scenario 33: No drop
- Scenario 34: Accepted traffic has a rate of 1Mbit/s
- Scenario 35: Accepted traffic has a rate of 1Mbit/s
- Scenario 36: Accepted traffic has a rate of 1Mbit/s
- Scenario 37: No drop.
- Scenario 38: No drop.
- Scenario 39: No drop.
- Scenario 40: No drop.
- Scenario 41: Accepted traffic has a rate of 7Mbit/s
- Scenario 42: Accepted traffic has a rate of 1Mbit/s
- Scenario 43: Accepted traffic has a rate of 1Mbit/s
- Scenario 44: Accepted traffic has a rate of 1Mbit/s
- Scenario 45: No drop.
- Scenario 46: No drop.
- Scenario 47: No drop.
- Scenario 48: No drop.
- Scenario 49: No drop
- Scenario 50: Accepted traffic has a rate of 1Mbit/s
- Scenario 51: Accepted traffic has a rate of 1Mbit/s
- Scenario 52: Accepted traffic has a rate of 1Mbit/s
- Scenario 53: No drop.
- Scenario 54: No drop.
- Scenario 55: No drop.
- Scenario 56: No drop.

- Scenario 57: Accepted traffic has a rate of 7Mbit/s

- Scenario 58: Accepted traffic has a rate of 1Mbit/s

- Scenario 59: Accepted traffic has a rate of 1Mbit/s

- Scenario 60: Accepted traffic has a rate of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/POLI/10**

Test Purpose   : Verify policing configuration in MESCAL61.

Procedure   : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 2: Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 3: Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 4: Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 6: Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 7: Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 8: Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 10: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 11: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 12: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 13: Stream with tos=0x00 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 14: Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 15: Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2

- Scenario 16: Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 71.0.0.2
- Scenario 18: Stream with tos=0xc8 and throughput = 1Mbit/s towards 71.0.0.2
- Scenario 19: Stream with tos=0xd0and throughput = 1Mbit/s towards 71.0.0.2
- Scenario 20: Stream with tos=0xd8 and throughput = 1Mbit/s towards 71.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2
- Scenario 22: Stream with tos=0xc8 and throughput = 2Mbit/s towards 71.0.0.2
- Scenario 23: Stream with tos=0xd0and throughput = 2Mbit/s towards 71.0.0.2
- Scenario 24: Stream with tos=0xd8 and throughput = 2Mbit/s towards 71.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 26: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 27: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 28: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 30: Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 31: Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 32: Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 34: Stream with tos=0xc8 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 35: Stream with tos=0xd0and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 36: Stream with tos=0xd8 and throughput = 1Mbit/s towards 81.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 5Mbit/s towards 81.0.0.2

- Scenario 38: Stream with tos=0xc8 and throughput = 2Mbit/s towards 81.0.0.2
- Scenario 39: Stream with tos=0xd0and throughput = 2Mbit/s towards 81.0.0.2
- Scenario 40: Stream with tos=0xd8 and throughput = 2Mbit/s towards 81.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop.
- Scenario 30: Accepted traffic has a rate of 1Mbit/s

- Scenario 31: Accepted traffic has a rate of 1Mbit/s
- Scenario 32: Accepted traffic has a rate of 1Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 2Mbit/s
- Scenario 38: Accepted traffic has a rate of 1Mbit/s
- Scenario 39: Accepted traffic has a rate of 1Mbit/s
- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Execution date : 15/09/04
Result : Obtained results are:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 1Mbit/s
- Scenario 15: Accepted traffic has a rate of 1Mbit/s
- Scenario 16: Accepted traffic has a rate of 1Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 5Mbit/s
- Scenario 22: Accepted traffic has a rate of 1Mbit/s
- Scenario 23: Accepted traffic has a rate of 1Mbit/s
- Scenario 24: Accepted traffic has a rate of 1Mbit/s
- Scenario 25: No drop.

- Scenario 26: No drop.

- Scenario 27: No drop.

- Scenario 28: No drop.

- Scenario 29: No drop.

- Scenario 30: Accepted traffic has a rate of 1Mbit/s

- Scenario 31: Accepted traffic has a rate of 1Mbit/s

- Scenario 32: Accepted traffic has a rate of 1Mbit/s

- Scenario 33: No drop.

- Scenario 34: No drop.

- Scenario 35: No drop.

- Scenario 36: No drop.

- Scenario 37: Accepted traffic has a rate of 2Mbit/s

- Scenario 38: Accepted traffic has a rate of 1Mbit/s

- Scenario 39: Accepted traffic has a rate of 1Mbit/s

- Scenario 40: Accepted traffic has a rate of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/POLI/11**

Test Purpose   : Verify policing configuration in MESCAL61.

Procedure   : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

- Scenario 1: Stream with tos=0x00 and throughput = 5Mbit/s towards 41.0.0.2

- Scenario 2: Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2

- Scenario 3: Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2

- Scenario 4: Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2

- Scenario 5: Stream with tos=0x00 and throughput = 5Mbit/s towards 43.0.0.2

- Scenario 6: Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2

- Scenario 7: Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2

- Scenario 8: Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2

Execute `qsa` script in immediate neighbours and `qsdel` in local router from a bash prompt.

- Scenario 9: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2

- Scenario 10: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 11: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 12: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 13: Stream with tos=0x00 and throughput = 10Mbit/s towards 41.0.0.2
- Scenario 14: Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 15: Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 16: Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 17: Stream with tos=0x00 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 18: Stream with tos=0xc8 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 19: Stream with tos=0xd0and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 20: Stream with tos=0xd8 and throughput = 1Mbit/s towards 41.0.0.2
- Scenario 21: Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2
- Scenario 22: Stream with tos=0xc8 and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 23: Stream with tos=0xd0and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 24: Stream with tos=0xd8 and throughput = 4Mbit/s towards 41.0.0.2
- Scenario 25: Stream with tos=0x00 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 26: Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 27: Stream with tos=0xd0and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 28: Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 43.0.0.2
- Scenario 29: Stream with tos=0x00 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 30: Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 31: Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2

- Scenario 32: Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2
- Scenario 33: Stream with tos=0x00 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 34: Stream with tos=0xc8 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 35: Stream with tos=0xd0and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 36: Stream with tos=0xd8 and throughput = 1Mbit/s towards 43.0.0.2
- Scenario 37: Stream with tos=0x00 and throughput = 15Mbit/s towards 43.0.0.2
- Scenario 38: Stream with tos=0xc8 and throughput = 6Mbit/s towards 43.0.0.2
- Scenario 39: Stream with tos=0xd0and throughput = 6Mbit/s towards 43.0.0.2
- Scenario 40: Stream with tos=0xd8 and throughput = 6Mbit/s towards 43.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 3Mbit/s
- Scenario 15: Accepted traffic has a rate of 3Mbit/s
- Scenario 16: Accepted traffic has a rate of 3Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.

- Scenario 21: Accepted traffic has a rate of 10Mbit/s
- Scenario 22: Accepted traffic has a rate of 3Mbit/s
- Scenario 23: Accepted traffic has a rate of 3Mbit/s
- Scenario 24: Accepted traffic has a rate of 3Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 10Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5: No drop.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8: No drop.
- Scenario 9: No drop.
- Scenario 10: No drop.
- Scenario 11: No drop.
- Scenario 12: No drop.
- Scenario 13: No drop.
- Scenario 14: Accepted traffic has a rate of 3Mbit/s
- Scenario 15: Accepted traffic has a rate of 3Mbit/s

- Scenario 16: Accepted traffic has a rate of 3Mbit/s
- Scenario 17: No drop.
- Scenario 18: No drop.
- Scenario 19: No drop.
- Scenario 20: No drop.
- Scenario 21: Accepted traffic has a rate of 10Mbit/s
- Scenario 22: Accepted traffic has a rate of 3Mbit/s
- Scenario 23: Accepted traffic has a rate of 3Mbit/s
- Scenario 24: Accepted traffic has a rate of 3Mbit/s
- Scenario 25: No drop.
- Scenario 26: No drop.
- Scenario 27: No drop.
- Scenario 28: No drop.
- Scenario 29: No drop
- Scenario 30: Accepted traffic has a rate of 3Mbit/s
- Scenario 31: Accepted traffic has a rate of 3Mbit/s
- Scenario 32: Accepted traffic has a rate of 3Mbit/s
- Scenario 33: No drop.
- Scenario 34: No drop.
- Scenario 35: No drop.
- Scenario 36: No drop.
- Scenario 37: Accepted traffic has a rate of 10Mbit/s
- Scenario 38: Accepted traffic has a rate of 3Mbit/s
- Scenario 39: Accepted traffic has a rate of 3Mbit/s
- Scenario 40: Accepted traffic has a rate of 3Mbit/s

Failure level   : None.
Remarks   : None.

10.1.5 TB_P1_FUNCT/BWMA

Test Reference : **TB_P1_FUNCT/BWMA/1**

Test Purpose : Verify bandwidth management configuration in MESCAL11.

Procedure   : Log to MESCAL11, Configure Smartbit to generate traffic as follows:

- Scenario 1:
    - Stream with tos=0x00 and throughput = 8Mbit/s towards 21.0.0.2
    - Stream with tos=0x28 and throughput = 8Mbit/s towards 21.0.0.2
    - Stream with tos=0x30 and throughput = 8Mbit/s towards 21.0.0.2

- o Stream with tos=0x38 and throughput = 8Mbit/s towards 21.0.0.2
  - ▪ Scenario 2:
    - o Stream with tos=0x00 and throughput = 8Mbit/s towards 31.0.0.2
    - o Stream with tos=0x28 and throughput = 8Mbit/s towards 31.0.0.2
    - o Stream with tos=0x30 and throughput = 8Mbit/s towards 31.0.0.2
    - o Stream with tos=0x38 and throughput = 8Mbit/s towards 31.0.0.2

Execute `qsa` script from a bash prompt.

- ▪ Scenario 3:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x28 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x30 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x38 and throughput = 0.5Mbit/s towards 21.0.0.2
- ▪ Scenario 4:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2
- ▪ Scenario 5:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x30 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x38 and throughput = 5Mbit/s towards 21.0.0.2
- ▪ Scenario 6:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x28 and throughput = 5Mbit/s towards 21.0.0.2
- ▪ Scenario 7:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x28 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x30 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x38 and throughput = 0.5Mbit/s towards 31.0.0.2
- ▪ Scenario 8:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2

- o   Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2
- o   Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2
- o   Stream with tos=0x38 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 9:
  - o   Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2
  - o   Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2
  - o   Stream with tos=0x30 and throughput = 5Mbit/s towards 31.0.0.2
- Scenario 10:
  - o   Stream with tos=0x00 and throughput = 5Mbit/s towards 31.0.0.2
  - o   Stream with tos=0x28 and throughput = 5Mbit/s towards 31.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4:
  - o   Received traffic has a throughput of 5Mbit/s
  - o   Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - o   Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - o   Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - o   Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 5:
  - o   Received traffic has a throughput of 5Mbit/s
  - o   Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - o   Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - o   Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 6:
  - o   Received traffic has a throughput of 5Mbit/s
  - o   Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o   Stream with tos=0x28 is received with a throughput of 1Mbit/s
- Scenario 7: No drop.
- Scenario 8:
  - o   Received traffic has a throughput of 5Mbit/s
  - o   Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - o   Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - o   Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - o   Stream with tos=0x38 is received with a throughput of 1Mbit/s

- Scenario 9:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 10:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 5:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 6:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s
- Scenario 7: No drop.
- Scenario 8:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 9:

- o Received traffic has a throughput of 5Mbit/s
- o Stream with tos=0x00 is received with a throughput of 3Mbit/s
- o Stream with tos=0x30 is received with a throughput of 1Mbit/s
- o Stream with tos=0x38 is received with a throughput of 1Mbit/s
  - ▪ Scenario 10:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0x28 is received with a throughput of 1Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/BWMA/2**

Test Purpose : Verify bandwidth management configuration in MESCAL71.

Procedure : Log to MESCAL71, Configure Smartbit to generate traffic as follows:

- ▪ Scenario 1:
  - o Stream with tos=0x00 and throughput = 8Mbit/s towards 61.0.0.2
  - o Stream with tos=0xe8 and throughput = 8Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf0 and throughput = 8Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf8 and throughput = 8Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- ▪ Scenario 2:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xe8 and throughput = 0.5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf0 and throughput = 0.5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf8 and throughput = 0.5Mbit/s towards 61.0.0.2
- ▪ Scenario 3:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xe8 and throughput = 5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2
- ▪ Scenario 4:
  - o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf0 and throughput = 5Mbit/s towards 61.0.0.2
  - o Stream with tos=0xf8 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 5:
    - Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2
    - Stream with tos=0xe8 and throughput = 1Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - Stream with tos=0xe8 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf0 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf8 is received with a throughput of 1Mbit/s
- Scenario 4:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - Stream with tos=0xf0 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf8 is received with a throughput of 1Mbit/s
- Scenario 5:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0xe8 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - Stream with tos=0xe8 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf0 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf8 is received with a throughput of 1Mbit/s
- Scenario 4:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - Stream with tos=0xf0 is received with a throughput of 1Mbit/s
    - Stream with tos=0xf8 is received with a throughput of 1Mbit/s

- Scenario 5:

    o Received traffic has a throughput of 5Mbit/s

    o Stream with tos=0x00 is received with a throughput of 4Mbit/s

    o Stream with tos=0xe8 is received with a throughput of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/BWMA/3**

Test Purpose : Verify bandwidth management configuration in MESCAL81.

Procedure   : Log to MESCAL81, Configure Smartbit to generate traffic as follows:

- Scenario 1:

    o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 2:

    o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

    o Stream with tos=0x28 and throughput = 0.5Mbit/s towards 61.0.0.2

    o Stream with tos=0x30 and throughput = 0.5Mbit/s towards 61.0.0.2

    o Stream with tos=0x38 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 3:

    o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 4:

    o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x30 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x38 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 5:

    o Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

    o Stream with tos=0x28 and throughput = 5Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 4:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 5:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 4:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - Stream with tos=0x30 is received with a throughput of 1Mbit/s
  - Stream with tos=0x38 is received with a throughput of 1Mbit/s
- Scenario 5:
  - Received traffic has a throughput of 5Mbit/s
  - Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - Stream with tos=0x28 is received with a throughput of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/BWMA/4**

Test Purpose   : Verify bandwidth management configuration in MESCAL51.

Procedure   : Log to MESCAL51, Configure Smartbit to generate traffic as follows:

- Scenario 1:
    - Stream with tos=0x00 and throughput = 8Mbit/s towards 21.0.0.2
    - Stream with tos=0xa8 and throughput = 8Mbit/s towards 21.0.0.2
    - Stream with tos=0xb0 and throughput = 8Mbit/s towards 21.0.0.2
    - Stream with tos=0xb8 and throughput = 8Mbit/s towards 21.0.0.2
- Scenario 2:
    - Stream with tos=0x00 and throughput = 8Mbit/s towards 42.0.0.2
    - Stream with tos=0xa8 and throughput = 8Mbit/s towards 42.0.0.2
    - Stream with tos=0xb0 and throughput = 8Mbit/s towards 42.0.0.2
    - Stream with tos=0xb8 and throughput = 8Mbit/s towards 42.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 3:
    - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
    - Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 4:
    - Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xa8 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 5:
    - Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb0 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xb8 and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 6:
    - Stream with tos=0x00 and throughput = 5Mbit/s towards 21.0.0.2
    - Stream with tos=0xa8and throughput = 5Mbit/s towards 21.0.0.2
- Scenario 7:

- o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
- o Stream with tos=0xa8 and throughput = 0.5Mbit/s towards 42.0.0.2
- o Stream with tos=0xb0 and throughput = 0.5Mbit/s towards 42.0.0.2
- o Stream with tos=0xb8 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 8:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 9:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xb0 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xb8 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 10:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0xa8 and throughput = 7Mbit/s towards 42.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - o Stream with tos=0xa8 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s
- Scenario 5:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s
- Scenario 6:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s

- o Stream with tos=0xa8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 7: No drop.
  - ▪ Scenario 8:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0xa8 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 9:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 10:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o Stream with tos=0xa8 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
  - ▪ Scenario 1: Cancelled.
  - ▪ Scenario 2: No drop.
  - ▪ Scenario 3: Cancelled.
  - ▪ Scenario 4: Cancelled
  - ▪ Scenario 5: Cancelled
  - ▪ Scenario 6: Cancelled
  - ▪ Scenario 7: No drop.
  - ▪ Scenario 8:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0xa8 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 9:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o Stream with tos=0xb0 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xb8 is received with a throughput of 1Mbit/s

- Scenario 10:

  - Received traffic has a throughput of 7Mbit/s

  - Stream with tos=0x00 is received with a throughput of 6Mbit/s

  - Stream with tos=0xa8 is received with a throughput of 1Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/BWMA/5**

Test Purpose : Verify bandwidth management configuration in MESCAL43.

Procedure : Log to MESCAL43, Configure Smartbit to generate traffic as follows:

- Scenario 1:

  - Stream with tos=0x00 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2

Execute qsa script from a bash prompt.

- Scenario 2:

  - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2

  - Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2

  - Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2

  - Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2

- Scenario 3:

  - Stream with tos=0x00 and throughput = 10Mbit/s towards 61.0.0.2

  - Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 4:

  - Stream with tos=0x00 and throughput = 10Mbit/s towards 61.0.0.2

  - Stream with tos=0x90 and throughput = 5Mbit/s towards 61.0.0.2

  - Stream with tos=0x98 and throughput = 5Mbit/s towards 61.0.0.2

- Scenario 5:

  - Stream with tos=0x00 and throughput = 10Mbit/s towards 61.0.0.2

- Stream with tos=0x88 and throughput = 5Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
    - Received traffic has a throughput of 10Mbit/s
    - Stream with tos=0x00 is received with a throughput of 1Mbit/s
    - Stream with tos=0x88 is received with a throughput of 3Mbit/s
    - Stream with tos=0x90 is received with a throughput of 3Mbit/s
    - Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 4:
    - Received traffic has a throughput of 10Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x90 is received with a throughput of 3Mbit/s
    - Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 5:
    - Received traffic has a throughput of 10Mbit/s
    - Stream with tos=0x00 is received with a throughput of 7Mbit/s
    - Stream with tos=0x88 is received with a throughput of 3Mbit/s

Execution date : 15/09/04
Result : Obtained results are:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
    - Received traffic has a throughput of 10Mbit/s
    - Stream with tos=0x00 is received with a throughput of 1Mbit/s
    - Stream with tos=0x88 is received with a throughput of 3Mbit/s
    - Stream with tos=0x90 is received with a throughput of 3Mbit/s
    - Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 4:
    - Received traffic has a throughput of 10Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x90 is received with a throughput of 3Mbit/s
    - Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 5:
    - Received traffic has a throughput of 10Mbit/s

- o Stream with tos=0x00 is received with a throughput of 7Mbit/s

- o Stream with tos=0x88 is received with a throughput of 3Mbit/s

Failure level : None.
Remarks : None.

Test Reference : **TB_P1_FUNCT/BWMA/6**

Test Purpose : Verify bandwidth management configuration in MESCAL41.

Procedure : Log to MESCAL41, Configure Smartbit to generate traffic as follows:

- Scenario 1:
  - o Stream with tos=0x00 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 2:
  - o Stream with tos=0x00 and throughput = 7Mbit/s towards 61.0.0.2
  - o Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 3:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2

- Scenario 4:
  - o Stream with tos=0x00 and throughput = 10Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 5:
  - o Stream with tos=0x00 and throughput = 10Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2

- Scenario 6:
  - Stream with tos=0x00 and throughput = 10Mbit/s towards 31.0.0.2
  - Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 7:
  - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 61.0.0.2
  - Stream with tos=0x88 and throughput = 0.5Mbit/s towards 61.0.0.2
  - Stream with tos=0x90 and throughput = 0.5Mbit/s towards 61.0.0.2
  - Stream with tos=0x98 and throughput = 0.5Mbit/s towards 61.0.0.2
- Scenario 8:
  - Stream with tos=0x00 and throughput = 12Mbit/s towards 61.0.0.2
  - Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2
  - Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
  - Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 9:
  - Stream with tos=0x00 and throughput = 12Mbit/s towards 61.0.0.2
  - Stream with tos=0x90 and throughput = 7Mbit/s towards 61.0.0.2
  - Stream with tos=0x98 and throughput = 7Mbit/s towards 61.0.0.2
- Scenario 10:
  - Stream with tos=0x00 and throughput = 12Mbit/s towards 61.0.0.2
  - Stream with tos=0x88 and throughput = 7Mbit/s towards 61.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
  - Received traffic has a throughput of 7Mbit/s
  - Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - Stream with tos=0x98 is received with a throughput of 1Mbit/s
- Scenario 4:
  - Received traffic has a throughput of 7Mbit/s

- o Stream with tos=0x00 is received with a throughput of 5Mbit/s
- o Stream with tos=0x90 is received with a throughput of 1Mbit/s
- o Stream with tos=0x98 is received with a throughput of 1Mbit/s
  - Scenario 5:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o Stream with tos=0x88 is received with a throughput of 1Mbit/s.
- Scenario 6: No drop.
- Scenario 7: No drop.
- Scenario 8:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 9:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 3Mbit/s
- Scenario 10:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 7Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 3Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- Scenario 4:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 5Mbit/s

- o Stream with tos=0x90 is received with a throughput of 1Mbit/s
- o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 5:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s.
- ▪ Scenario 6: No drop.
- ▪ Scenario 7: No drop.
- ▪ Scenario 8:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 3Mbit/s
- ▪ Scenario 9:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 3Mbit/s
- ▪ Scenario 10:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 7Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 3Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/BWMA/7**

Test Purpose   : Verify bandwidth management configuration in MESCAL42.

Procedure   : Log to MESCAL42, Configure Smartbit to generate traffic as follows:

- ▪ Scenario 1:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 9Mbit/s towards 31.0.0.2
- ▪ Scenario 2:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2
  - o Stream with tos=0x88 and throughput = 9Mbit/s towards 21.0.0.2

- o Stream with tos=0x90 and throughput = 9Mbit/s towards 21.0.0.2
- o Stream with tos=0x98 and throughput = 9Mbit/s towards 21.0.0.2
- Scenario 3:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
  - o Stream with tos=0x88 and throughput = 9Mbit/s towards 51.0.0.2
  - o Stream with tos=0x90 and throughput = 9Mbit/s towards 51.0.0.2
  - o Stream with tos=0x98 and throughput = 9Mbit/s towards 51.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 4:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 0.5Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 0.5Mbit/s towards 31.0.0.2
- Scenario 5:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 6:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x90 and throughput = 7Mbit/s towards 31.0.0.2
  - o Stream with tos=0x98 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 7:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 31.0.0.2
  - o Stream with tos=0x88 and throughput = 7Mbit/s towards 31.0.0.2
- Scenario 8:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x88 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x90 and throughput = 0.5Mbit/s towards 21.0.0.2
  - o Stream with tos=0x98 and throughput = 0.5Mbit/s towards 21.0.0.2
- Scenario 9:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2

- o   Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2
- o   Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2
- o   Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 10:
  - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2
  - o   Stream with tos=0x90 and throughput = 7Mbit/s towards 21.0.0.2
  - o   Stream with tos=0x98 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 11:
  - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 21.0.0.2
  - o   Stream with tos=0x88 and throughput = 7Mbit/s towards 21.0.0.2
- Scenario 12:
  - o   Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x88 and throughput = 0.5Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x90 and throughput = 0.5Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x98 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 13:
  - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 14:
  - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x90 and throughput = 7Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x98 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 15:
  - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
  - o   Stream with tos=0x88 and throughput = 7Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result : Following results must be obtained:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5:
  - o   Received traffic has a throughput of 7Mbit/s

- o Stream with tos=0x00 is received with a throughput of 4Mbit/s
- o Stream with tos=0x88 is received with a throughput of 1Mbit/s
- o Stream with tos=0x90 is received with a throughput of 1Mbit/s
- o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 6:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 7:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
- ▪ Scenario 8: No drop.
- ▪ Scenario 9:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 10:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 11:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
- ▪ Scenario 12: No drop.
- ▪ Scenario 13:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 14:

- o Received traffic has a throughput of 7Mbit/s
- o Stream with tos=0x00 is received with a throughput of 5Mbit/s
- o Stream with tos=0x90 is received with a throughput of 1Mbit/s
- o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 15:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:
- ▪ Scenario 1: No drop.
- ▪ Scenario 2: No drop.
- ▪ Scenario 3: No drop.
- ▪ Scenario 4: No drop.
- ▪ Scenario 5:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 6:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 7:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
- ▪ Scenario 8: No drop.
- ▪ Scenario 9:
  - o Received traffic has a throughput of 7Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0x88 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x90 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 10:

- o   Received traffic has a throughput of 7Mbit/s
- o   Stream with tos=0x00 is received with a throughput of 5Mbit/s
- o   Stream with tos=0x90 is received with a throughput of 1Mbit/s
- o   Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 11:
    - o   Received traffic has a throughput of 7Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o   Stream with tos=0x88 is received with a throughput of 1Mbit/s
- ▪ Scenario 12: No drop.
- ▪ Scenario 13:
    - o   Received traffic has a throughput of 7Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o   Stream with tos=0x88 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0x90 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 14:
    - o   Received traffic has a throughput of 7Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o   Stream with tos=0x90 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0x98 is received with a throughput of 1Mbit/s
- ▪ Scenario 15:
    - o   Received traffic has a throughput of 7Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o   Stream with tos=0x88 is received with a throughput of 1Mbit/s

Failure level   : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/BWMA/8**

Test Purpose   : Verify bandwidth management configuration in MESCAL21.

Procedure   : Log to MESCAL21, Configure Smartbit to generate traffic as follows:

- ▪ Scenario 1:
    - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 11.0.0.2
    - o   Stream with tos=0x48 and throughput = 9Mbit/s towards 11.0.0.2
    - o   Stream with tos=0x50 and throughput = 9Mbit/s towards 11.0.0.2
    - o   Stream with tos=0x58 and throughput = 9Mbit/s towards 11.0.0.2
- ▪ Scenario 2:
    - o   Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2

- Stream with tos=0x48 and throughput = 9Mbit/s towards 42.0.0.2
- Stream with tos=0x50 and throughput = 9Mbit/s towards 42.0.0.2
- Stream with tos=0x58 and throughput = 9Mbit/s towards 42.0.0.2

- Scenario 3:
  - Stream with tos=0x00 and throughput = 9Mbit/s towards 51.0.0.2
  - Stream with tos=0x48 and throughput = 9Mbit/s towards 51.0.0.2
  - Stream with tos=0x50 and throughput = 9Mbit/s towards 51.0.0.2
  - Stream with tos=0x58 and throughput = 9Mbit/s towards 51.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 4:
  - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2
  - Stream with tos=0x48 and throughput = 0.5Mbit/s towards 11.0.0.2
  - Stream with tos=0x50 and throughput = 0.5Mbit/s towards 11.0.0.2
  - Stream with tos=0x58 and throughput = 0.5Mbit/s towards 11.0.0.2

- Scenario 5:
  - Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 6:
  - Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x50 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x58 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 7:
  - Stream with tos=0x00 and throughput = 7Mbit/s towards 11.0.0.2
  - Stream with tos=0x48 and throughput = 7Mbit/s towards 11.0.0.2

- Scenario 8:
  - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
  - Stream with tos=0x48 and throughput = 0.5Mbit/s towards 42.0.0.2
  - Stream with tos=0x50 and throughput = 0.5Mbit/s towards 42.0.0.2
  - Stream with tos=0x58 and throughput = 0.5Mbit/s towards 42.0.0.2

- Scenario 9:

- o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
- o Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2
- o Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2
- o Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 10:
    - o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
    - o Stream with tos=0x50 and throughput = 7Mbit/s towards 42.0.0.2
    - o Stream with tos=0x58 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 11:
    - o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
    - o Stream with tos=0x48 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 12:
    - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 51.0.0.2
    - o Stream with tos=0x48 and throughput = 0.5Mbit/s towards 51.0.0.2
    - o Stream with tos=0x50 and throughput = 0.5Mbit/s towards 51.0.0.2
    - o Stream with tos=0x58 and throughput = 0.5Mbit/s towards 51.0.0.2
- Scenario 13:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 14:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x50 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x58 and throughput = 7Mbit/s towards 51.0.0.2
- Scenario 15:
    - o Stream with tos=0x00 and throughput = 7Mbit/s towards 51.0.0.2
    - o Stream with tos=0x48 and throughput = 7Mbit/s towards 51.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5:

- o Received traffic has a throughput of 5Mbit/s
- o Stream with tos=0x00 is received with a throughput of 2Mbit/s
- o Stream with tos=0x48 is received with a throughput of 1Mbit/s
- o Stream with tos=0x50 is received with a throughput of 1Mbit/s
- o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - Scenario 6:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - Scenario 7:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
  - Scenario 8: No drop.
  - Scenario 9:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - Scenario 10:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - Scenario 11:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
  - Scenario 12: No drop.
  - Scenario 13:
    - o Received traffic has a throughput of 5Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s

- Scenario 14:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 15:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result   : Obtained results are:

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: Cancelled.
- Scenario 4: No drop.
- Scenario 5:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 6:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 7:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
- Scenario 8: No drop.
- Scenario 9:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s

- Scenario 10:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 11:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
- Scenario 12: Cancelled.
- Scenario 13: Cancelled
- Scenario 14: Cancelled
- Scenario 15: Cancelled

Failure level : None.
Remarks   : None.

Test Reference : **TB_P1_FUNCT/BWMA/9**

Test Purpose   : Verify bandwidth management configuration in MESCAL31.

Procedure   : Log to MESCAL31, Configure Smartbit to generate traffic as follows:

- Scenario 1:
    - Stream with tos=0x00 and throughput = 9Mbit/s towards 11.0.0.2
    - Stream with tos=0x68 and throughput = 9Mbit/s towards 11.0.0.2
    - Stream with tos=0x70 and throughput = 9Mbit/s towards 11.0.0.2
    - Stream with tos=0x78 and throughput = 9Mbit/s towards 11.0.0.2
- Scenario 2:
    - Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
    - Stream with tos=0x68 and throughput = 9Mbit/s towards 42.0.0.2
    - Stream with tos=0x70 and throughput = 9Mbit/s towards 42.0.0.2
    - Stream with tos=0x78 and throughput = 9Mbit/s towards 42.0.0.2
- Scenario 3:
    - Stream with tos=0x00 and throughput = 9Mbit/s towards 41.0.0.2
    - Stream with tos=0x68 and throughput = 9Mbit/s towards 41.0.0.2
    - Stream with tos=0x70 and throughput = 9Mbit/s towards 41.0.0.2
    - Stream with tos=0x78 and throughput = 9Mbit/s towards 41.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 4:
    - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 11.0.0.2

- o Stream with tos=0x68 and throughput = 0.5Mbit/s towards 11.0.0.2
- o Stream with tos=0x70 and throughput = 0.5Mbit/s towards 11.0.0.2
- o Stream with tos=0x78 and throughput = 0.5Mbit/s towards 11.0.0.2
- Scenario 5:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 11.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 6:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 11.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 11.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 7:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 11.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 11.0.0.2
- Scenario 8:
  - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 42.0.0.2
  - o Stream with tos=0x68 and throughput = 0.5Mbit/s towards 42.0.0.2
  - o Stream with tos=0x70 and throughput = 0.5Mbit/s towards 42.0.0.2
  - o Stream with tos=0x78 and throughput = 0.5Mbit/s towards 42.0.0.2
- Scenario 9:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 10:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 42.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 11:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 42.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 42.0.0.2
- Scenario 12:

- o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2
- o Stream with tos=0x68 and throughput = 0.5Mbit/s towards 41.0.0.2
- o Stream with tos=0x70 and throughput = 0.5Mbit/s towards 41.0.0.2
- o Stream with tos=0x78 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 13:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 41.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 14:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 41.0.0.2
  - o Stream with tos=0x70 and throughput = 7Mbit/s towards 41.0.0.2
  - o Stream with tos=0x78 and throughput = 7Mbit/s towards 41.0.0.2
- Scenario 15:
  - o Stream with tos=0x00 and throughput = 9Mbit/s towards 41.0.0.2
  - o Stream with tos=0x68 and throughput = 7Mbit/s towards 41.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 6:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
  - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 7:
  - o Received traffic has a throughput of 5Mbit/s

- o Stream with tos=0x00 is received with a throughput of 4Mbit/s
- o Stream with tos=0x48 is received with a throughput of 1Mbit/s
  - ▪ Scenario 8: No drop.
  - ▪ Scenario 9:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - ▪ Scenario 10:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - ▪ Scenario 11:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
  - ▪ Scenario 12: No drop.
  - ▪ Scenario 13:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - ▪ Scenario 14:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - o Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - o Stream with tos=0x58 is received with a throughput of 1Mbit/s
  - ▪ Scenario 15:
    - o Received traffic has a throughput of 7Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - o Stream with tos=0x48 is received with a throughput of 1Mbit/s

Execution date : 15/09/04
Result : Obtained results are:
  - ▪ Scenario 1: No drop.

- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4: No drop.
- Scenario 5:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 6:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 7:
    - Received traffic has a throughput of 5Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
- Scenario 8: No drop.
- Scenario 9:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 10:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 5Mbit/s
    - Stream with tos=0x50 is received with a throughput of 1Mbit/s
    - Stream with tos=0x58 is received with a throughput of 1Mbit/s
- Scenario 11:
    - Received traffic has a throughput of 7Mbit/s
    - Stream with tos=0x00 is received with a throughput of 6Mbit/s
    - Stream with tos=0x48 is received with a throughput of 1Mbit/s
- Scenario 12: No drop.
- Scenario 13:
    - Received traffic has a throughput of 7Mbit/s

- o   Stream with tos=0x00 is received with a throughput of 4Mbit/s

- o   Stream with tos=0x48 is received with a throughput of 1Mbit/s

- o   Stream with tos=0x50 is received with a throughput of 1Mbit/s

- o   Stream with tos=0x58 is received with a throughput of 1Mbit/s

  - ▪   Scenario 14:

    - o   Received traffic has a throughput of 7Mbit/s

    - o   Stream with tos=0x00 is received with a throughput of 5Mbit/s

    - o   Stream with tos=0x50 is received with a throughput of 1Mbit/s

    - o   Stream with tos=0x58 is received with a throughput of 1Mbit/s

  - ▪   Scenario 15:

    - o   Received traffic has a throughput of 7Mbit/s

    - o   Stream with tos=0x00 is received with a throughput of 6Mbit/s

    - o   Stream with tos=0x48 is received with a throughput of 1Mbit/s

Failure level   : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/BWMA/10**

Test Purpose   : Verify bandwidth management configuration in MESCAL61.

Procedure   : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

- ▪   Scenario 1:

  - o   Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xc8 and throughput = 7Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xd0and throughput = 7Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xd8 and throughput = 7Mbit/s towards 71.0.0.2

- ▪   Scenario 2:

  - o   Stream with tos=0x00 and throughput = 7Mbit/s towards 81.0.0.2

  - o   Stream with tos=0xc8 and throughput = 7Mbit/s towards 81.0.0.2

  - o   Stream with tos=0xd0and throughput = 7Mbit/s towards 81.0.0.2

  - o   Stream with tos=0xd8 and throughput = 7Mbit/s towards 81.0.0.2

Execute `qsa` script from a bash prompt.

- ▪   Scenario 3:

  - o   Stream with tos=0x00 and throughput = 0.5Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xd0and throughput = 0.5Mbit/s towards 71.0.0.2

  - o   Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 71.0.0.2

- Scenario 4:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2
    - Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2
    - Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2
    - Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 5:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2
    - Stream with tos=0xd0and throughput = 5Mbit/s towards 71.0.0.2
    - Stream with tos=0xd8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 6:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 71.0.0.2
    - Stream with tos=0xc8 and throughput = 5Mbit/s towards 71.0.0.2
- Scenario 7:
    - Stream with tos=0x00 and throughput = 0.5Mbit/s towards 81.0.0.2
    - Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 81.0.0.2
    - Stream with tos=0xd0and throughput = 0.5Mbit/s towards 81.0.0.2
    - Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 81.0.0.2
- Scenario 8:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 81.0.0.2
    - Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2
    - Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2
    - Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 9:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 81.0.0.2
    - Stream with tos=0xd0and throughput = 5Mbit/s towards 81.0.0.2
    - Stream with tos=0xd8 and throughput = 5Mbit/s towards 81.0.0.2
- Scenario 10:
    - Stream with tos=0x00 and throughput = 7Mbit/s towards 81.0.0.2
    - Stream with tos=0xc8 and throughput = 5Mbit/s towards 81.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4:

- o Received traffic has a throughput of 5Mbit/s
- o Stream with tos=0x00 is received with a throughput of 2Mbit/s
- o Stream with tos=0xc8 is received with a throughput of 1Mbit/s
- o Stream with tos=0xd0 is received with a throughput of 1Mbit/s
- o Stream with tos=0xd8 is received with a throughput of 1Mbit/s
- Scenario 5:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - o Stream with tos=0xd0 is received with a throughput of 1Mbit/s
  - o Stream with tos=0xd8 is received with a throughput of 1Mbit/s
- Scenario 6:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0xc8 is received with a throughput of 1Mbit/s
- Scenario 7: No drop.
- Scenario 8:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 2Mbit/s
  - o Stream with tos=0xc8 is received with a throughput of 1Mbit/s
  - o Stream with tos=0xd0 is received with a throughput of 1Mbit/s
  - o Stream with tos=0xd8 is received with a throughput of 1Mbit/s
- Scenario 9:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 3Mbit/s
  - o Stream with tos=0xd0 is received with a throughput of 1Mbit/s
  - o Stream with tos=0xd8 is received with a throughput of 1Mbit/s
- Scenario 10:
  - o Received traffic has a throughput of 5Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0xc8 is received with a throughput of 1Mbit/s.

Execution date : 15/09/04
Result : Obtained results are:
- Scenario 1: No drop.
- Scenario 2: No drop.
- Scenario 3: No drop.
- Scenario 4:
  - o Received traffic has a throughput of 5Mbit/s

- o   Stream with tos=0x00 is received with a throughput of 2Mbit/s
- o   Stream with tos=0xc8 is received with a throughput of 1Mbit/s
- o   Stream with tos=0xd0 is received with a throughput of 1Mbit/s
- o   Stream with tos=0xd8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 5:
    - o   Received traffic has a throughput of 5Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - o   Stream with tos=0xd0 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0xd8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 6:
    - o   Received traffic has a throughput of 5Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o   Stream with tos=0xc8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 7: No drop.
  - ▪ Scenario 8:
    - o   Received traffic has a throughput of 5Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 2Mbit/s
    - o   Stream with tos=0xc8 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0xd0 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0xd8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 9:
    - o   Received traffic has a throughput of 5Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 3Mbit/s
    - o   Stream with tos=0xd0 is received with a throughput of 1Mbit/s
    - o   Stream with tos=0xd8 is received with a throughput of 1Mbit/s
  - ▪ Scenario 10:
    - o   Received traffic has a throughput of 5Mbit/s
    - o   Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o   Stream with tos=0xc8 is received with a throughput of 1Mbit/s

Failure level : None
Remarks   : None

Test Reference : **TB_P1_FUNCT/BWMA/11**

Test Purpose : Verify bandwidth management configuration in MESCAL61.

Procedure : Log to MESCAL61, Configure Smartbit to generate traffic as follows:

  - ▪ Scenario 1:
    - o   Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2

- o Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2
- o Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
- o Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 2:
    - o Stream with tos=0x00 and throughput = 12Mbit/s towards 43.0.0.2
    - o Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2
    - o Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2
    - o Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2

Execute `qsa` script from a bash prompt.

- Scenario 3:
    - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd0and throughput = 0.5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 41.0.0.2
- Scenario 4:
    - o Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2
    - o Stream with tos=0xc8 and throughput = 5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 5:
    - o Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd0and throughput = 5Mbit/s towards 41.0.0.2
    - o Stream with tos=0xd8 and throughput = 5Mbit/s towards 41.0.0.2
- Scenario 6:
    - o Stream with tos=0x00 and throughput = 12Mbit/s towards 41.0.0.2
    - o Stream with tos=0xc8 and throughput = 8Mbit/s towards 41.0.0.2
- Scenario 7:
    - o Stream with tos=0x00 and throughput = 0.5Mbit/s towards 43.0.0.2
    - o Stream with tos=0xc8 and throughput = 0.5Mbit/s towards 43.0.0.2
    - o Stream with tos=0xd0and throughput = 0.5Mbit/s towards 43.0.0.2

- o Stream with tos=0xd8 and throughput = 0.5Mbit/s towards 43.0.0.2
- ▪ Scenario 8:
  - o Stream with tos=0x00 and throughput = 12Mbit/s towards 43.0.0.2
  - o Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2
  - o Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2
  - o Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2
- ▪ Scenario 9:
  - o Stream with tos=0x00 and throughput = 12Mbit/s towards 43.0.0.2
  - o Stream with tos=0xd0and throughput = 5Mbit/s towards 43.0.0.2
  - o Stream with tos=0xd8 and throughput = 5Mbit/s towards 43.0.0.2
- ▪ Scenario 10:
  - o Stream with tos=0x00 and throughput = 12Mbit/s towards 43.0.0.2
  - o Stream with tos=0xc8 and throughput = 5Mbit/s towards 43.0.0.2

Check with Smartbit statistics if there is traffic drops.

Expected result :

- ▪ Scenario 1: No drop.
- ▪ Scenario 2: No drop.
- ▪ Scenario 3: No drop.
- ▪ Scenario 4:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 1Mbit/s
  - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s
  - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
  - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
- ▪ Scenario 5:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
  - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
  - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
- ▪ Scenario 6:
  - o Received traffic has a throughput of 10Mbit/s
  - o Stream with tos=0x00 is received with a throughput of 7Mbit/s
  - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s
- ▪ Scenario 7: No drop.
- ▪ Scenario 8:

- o Received traffic has a throughput of 10Mbit/s
- o Stream with tos=0x00 is received with a throughput of 1Mbit/s
- o Stream with tos=0xc8 is received with a throughput of 3Mbit/s
- o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
- o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
  - Scenario 9:
    - o Received traffic has a throughput of 10Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
    - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
  - Scenario 10:
    - o Received traffic has a throughput of 10Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 7Mbit/s
    - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s

Execution date : 15/09/04
Result : Obtained results are:
  - Scenario 1: No drop.
  - Scenario 2: No drop.
  - Scenario 3: No drop.
  - Scenario 4:
    - o Received traffic has a throughput of 10Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 1Mbit/s
    - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s
    - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
    - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
  - Scenario 5:
    - o Received traffic has a throughput of 10Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 4Mbit/s
    - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s
    - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s
  - Scenario 6:
    - o Received traffic has a throughput of 10Mbit/s
    - o Stream with tos=0x00 is received with a throughput of 7Mbit/s
    - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s
  - Scenario 7: No drop.
  - Scenario 8:
    - o Received traffic has a throughput of 10Mbit/s

- o Stream with tos=0x00 is received with a throughput of 1Mbit/s

- o Stream with tos=0xc8 is received with a throughput of 3Mbit/s

- o Stream with tos=0xd0 is received with a throughput of 3Mbit/s

- o Stream with tos=0xd8 is received with a throughput of 3Mbit/s

- Scenario 9:

  - o Received traffic has a throughput of 10Mbit/s

  - o Stream with tos=0x00 is received with a throughput of 4Mbit/s

  - o Stream with tos=0xd0 is received with a throughput of 3Mbit/s

  - o Stream with tos=0xd8 is received with a throughput of 3Mbit/s

- Scenario 10:

  - o Received traffic has a throughput of 10Mbit/s

  - o Stream with tos=0x00 is received with a throughput of 7Mbit/s

  - o Stream with tos=0xc8 is received with a throughput of 3Mbit/s

Failure level : None.
Remarks : None.

10.2 Phase 2

The "null" value means no value.

10.2.1 TB_P2_FUNCT/CMES

Test Reference : **TB_P2_FUNCT/CMES/1**
Test Purpose : Verify the capability length.
Procedure : Configure MESCAL11 to send the following QoS service capability to MESCAL21
- Group 1
- Group 2

Expected result : The capability length must be set to 2.

Execution date : 22/09/04
Result : The capability length is set to 2.

```
⊞ Frame 10 (109 bytes on wire, 109 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 53966 (53966), Dst Port: bgp (179), Seq: 2217784803, Ack: 2247019363, Len: 43
⊟ Border Gateway Protocol
    ⊟ OPEN Message
          Marker: 16 bytes
          Length: 43 bytes
          Type: OPEN Message (1)
          Version: 4
          My AS: 1
          Hold time: 15
          BGP identifier: 11.11.11.1
          Optional parameters length: 14 bytes
       ⊟ Optional parameters
          ⊟ Capabilities Advertisement (8 bytes)
                Parameter type: Capabilities (2)
                Parameter length: 6 bytes
             ⊟ Multiprotocol extensions capability (6 bytes)
                   Capability code: Multiprotocol extensions (1)
                   Capability length: 4 bytes
                ⊟ Capability value
                      Address family identifier: IPv4 (1)
                      Reserved: 1 byte
                      Subsequent address family identifier: Unicast (1)
          ⊟ Capabilities Advertisement (6 bytes)
                Parameter type: Capabilities (2)
                Parameter length: 4 bytes
             ⊟ Unknown capability (4 bytes)
                   Capability code: Private use (129)
                   Capability length: 2 bytes
                   Capability value: Unknown
```

```
0000  00 50 04 48 c3 63 00 d0  b7 21 50 bd 08 00 45 00    .P.H.c..  .!P...E.
0010  00 5f e1 1e 40 00 01 06  94 6e 01 01 01 05 01 01    ._..@...  .n......
0020  01 06 d2 ce 00 b3 84 30  b5 e3 85 ee cb 63 80 18    .......0  .....c..
0030  16 d0 95 9e 00 00 01 01  08 0a 03 fa 54 fe 03 18    ........  ....T...
0040  d4 44 ff ff ff ff ff ff  ff ff ff ff ff ff ff ff    .D......  ........
0050  ff ff 00 2b 01 04 00 01  00 0f 0b 0b 0b 01 0e 02    ...+....  ........
0060  06 01 04 00 01 00 01 02  04 31 02 00 ff             ........  ........
```

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/2**
Test Purpose   : Verify the QoS service capability field length.
Procedure   : Configure MESCAL11 to send the following QoS service capability to MESCAL21
▪ Group 1
▪ Group 2

Expected result : The length of the QoS service capability must be 2 bytes.

Execution date : 22/09/04
Result   : The length of the QoS service capability is 2 bytes.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/3**
Test Purpose   : Verify that Group 1 QoS service capability is supported.
Procedure   : Configure MESCAL11 to send a QoS service capability G1 to MESCAL21.

Expected result : QoS service capability field is two bytes. The first byte must be set to 0xFF.
Result   : The first byte is set to 0xFF.

Failure level   : None
Remarks   : None

Test Reference   : **TB_P2_FUNCT/CMES/4**
Test Purpose   : Verify that Group 2 QoS service capability is supported.
Procedure   : Configure MESCAL11 to send a QoS service capability G2 to MESCAL21.

Expected result : QoS service capability field is two bytes. The second byte is set to 0xFF.

Execution date : 22/09/04
Result   : The second byte is set to 0xFF

```
⊞ Frame 10 (109 bytes on wire, 109 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 53966 (53966), Dst Port: bgp (179), Seq: 2217784803, Ack: 2247019363, Len: 43
⊟ Border Gateway Protocol
    ⊟ OPEN Message
          Marker: 16 bytes
          Length: 43 bytes
          Type: OPEN Message (1)
          Version: 4
          My AS: 1
          Hold time: 15
          BGP identifier: 11.11.11.1
          Optional parameters length: 14 bytes
      ⊟ Optional parameters
          ⊟ Capabilities Advertisement (8 bytes)
                Parameter type: Capabilities (2)
                Parameter length: 6 bytes
              ⊟ Multiprotocol extensions capability (6 bytes)
                    Capability code: Multiprotocol extensions (1)
                    Capability length: 4 bytes
                  ⊟ Capability value
                        Address family identifier: IPv4 (1)
                        Reserved: 1 byte
                        Subsequent address family identifier: Unicast (1)
          ⊟ Capabilities Advertisement (6 bytes)
                Parameter type: Capabilities (2)
                Parameter length: 4 bytes
              ⊟ Unknown capability (4 bytes)
                    Capability code: Private use (129)
                    Capability length: 2 bytes
                    Capability value: Unknown
```

```
0000  00 50 04 48 c3 63 00 d0  b7 21 50 bd 08 00 45 00    .P.H.c.. .!P...E.
0010  00 5f e1 1e 40 00 01 06  94 6e 01 01 01 05 01 01    ._..@... .n......
0020  01 06 d2 ce 00 b3 84 30  b5 e3 85 ee cb 63 80 18    .......0 .....c..
0030  16 d0 95 9e 00 00 01 01  08 0a 03 fa 54 fe 03 18    ........ ....T...
0040  d4 44 ff ff ff ff ff ff  ff ff ff ff ff ff ff ff    .D...... ........
0050  ff ff 00 2b 01 04 00 01  00 0f 0b 0b 01 0e 02       ...+.... ........
0060  06 01 04 00 01 00 01 02  04 81 02 00 ff             ........ ....
```

Failure level   : None
Remarks   : None

Test Reference   : **TB_P2_FUNCT/CMES/5**
Test Purpose   : Validate the conformance of QoS information length.
Procedure   : Configure MESCAL11 to send BGP UPDATE message with QoS information codes to MESCAL21.

The following QoS information is to be configured. The value of the QoS Information length is to be checked with a traffic analyzer:

- Scenario 1: no QoS information
- Scenario 2: reserved rate 52
- Scenario 3: loss rate 60
- Scenario 4: reserved rate 52 and loss rate 60
- Scenario 5: minimum one way delay 50 and reserved rate 52
- Scenario 6: minimum one way delay 50 and loss rate 60
- Scenario 7: minimum one way delay 50, loss rate 60 and reserved rate 52
- Scenario 8: minimum one way delay 50, maximum one way delay 150 and loss rate 60
- Scenario 9: minimum one way delay 50, average one way delay 100 and loss rate 60
- Scenario 10: minimum one way delay 50, average one way delay 100 and reserved rate 52
- Scenario 11: minimum one way delay 50, average one way delay 100, maximum one way delay 150 and loss rate 60
- Scenario 12: minimum one way delay 50, average one way delay 100, loss rate 60 and reserved rate 52
- Scenario 13: minimum one way delay 50, maximum one way delay 150, average one way delay 100, loss rate 60 and reserved rate 52
- Scenario 14: minimum one way delay 50, maximum one way delay 150, average one way delay 100, loss rate 60 and jitter 5

Expected result : QoS information length is one byte field. The value checked within a traffic analyzer must be set as follows:
- Scenario 1: 0
- Scenario 2: 1
- Scenario 3: 1
- Scenario 4: 2
- Scenario 5: 2
- Scenario 6: 2
- Scenario 7: 3
- Scenario 8: 3
- Scenario 9: 3
- Scenario 10: 3
- Scenario 11: 4
- Scenario 12: 4
- Scenario 13: 5
- Scenario 14: 5

Execution date : 22/09/04
Result   : The value checked within a traffic analyzer are set as follows:

- Scenario 1: 0
- Scenario 2: 1
- Scenario 3: 1
- Scenario 4: 2
- Scenario 5: 2
- Scenario 6: 2
- Scenario 7: 3
- Scenario 8: 3
- Scenario 9: 3
- Scenario 10: 3
- Scenario 11: 4
- Scenario 12: 4
- Scenario 13: 5

- Scenario 14: 5

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/CMES/6**
Test Purpose : Verify that "Packet Rate QoS Code" and its associated Sub-codes are supported.
Procedure : Configure MESCAL11 to send BGP UPDATE message with following QoS information to MESCAL21:

- Scenario 1: loss rate 30
- Scenario 2: reserved rate 25
- Scenario 3: available rate 25
- Scenario 4: loss rate 45 and reserved rate 454
- Scenario 5: loss rate 55 and available rate 100
- Scenario 6: reserved rate 52 and available rate 100
- Scenario 7: loss rate 60, available rate 100 and reserved rate 52

A traffic analyzer must be launched in the egress of MESCAL11 in order to examine the values of QoS information Codes and QoS information Sub-Codes.

Expected result : In all Scenario listed above, QoS information field is coded in 4 bits and QoS information Sub Code is also coded in 4 bits. The values of these fields must be as follows depending on the scenarios listed above:

- Scenario 1: QoS information Code = 1, QoS information Sub Code = 3
- Scenario 2: QoS information Code = 1, QoS information Sub Code = 1
- Scenario 3: QoS information Code = 1, QoS information Sub Code = 2
- Scenario 4:
  - o QoS information Code = 1, QoS information Sub Code = 3
  - o QoS information Code = 1, QoS information Sub Code = 1
- Scenario 5:
  - o QoS information Code = 1, QoS information Sub Code = 3
  - o QoS information Code = 1, QoS information Sub Code = 2
- Scenario 6:
  - o QoS information Code = 1, QoS information Sub Code = 1
  - o QoS information Code = 1, QoS information Sub Code = 2
- Scenario 7:
  - o QoS information Code = 1, QoS information Sub Code = 1
  - o QoS information Code = 1, QoS information Sub Code = 2
  - o QoS information Code = 1, QoS information Sub Code = 3

Execution date : 22/09/04
Result : Obtained results are as follows:

- Scenario 1: QoS information Code = 1, QoS information Sub Code = 3
- Scenario 2: QoS information Code = 1, QoS information Sub Code = 1
- Scenario 3: QoS information Code = 1, QoS information Sub Code = 2
- Scenario 4:
  - o QoS information Code = 1, QoS information Sub Code = 3
  - o QoS information Code = 1, QoS information Sub Code = 1
- Scenario 5:
  - o QoS information Code = 1, QoS information Sub Code = 3
  - o QoS information Code = 1, QoS information Sub Code = 2
- Scenario 6:
  - o QoS information Code = 1, QoS information Sub Code = 1
  - o QoS information Code = 1, QoS information Sub Code = 2

- Scenario 7:
  - QoS information Code = 1, QoS information Sub Code = 1
  - QoS information Code = 1, QoS information Sub Code = 2
  - QoS information Code = 1, QoS information Sub Code = 3

```
⊞ Frame 24 (139 bytes on wire, 139 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 54348 (54348), Dst Port: bgp (179), Seq: 4123177748, Ack: 4118484193, Len: 73
⊟ Border Gateway Protocol
  ⊟ UPDATE Message
       Marker: 16 bytes
       Length: 73 bytes
       Type: UPDATE Message (2)
       Unfeasible routes length: 0 bytes
       Total path attribute length: 50 bytes
    ⊟ Path attributes
       ⊞ ORIGIN: IGP (4 bytes)
       ⊞ AS_PATH: 1 (7 bytes)
       ⊞ NEXT_HOP: 1.1.1.5 (7 bytes)
       ⊞ COMMUNITIES: 1:1 (7 bytes)
       ⊟ Unknown (25 bytes)
          ⊞ Flags: 0xc0 (Optional, Transitive, Complete)
             Type code: Unknown (17)
             Length: 22 bytes
             Unknown (22 bytes)
```

```
0000  00 50 04 48 c3 63 00 d0  b7 21 50 bd 08 00 45 00   .P.H.c.. .!P...E.
0010  00 7d be d9 40 00 01 06  b6 95 01 01 01 05 01 01   .}..@... ........
0020  01 06 d4 4c 00 b3 f5 c2  b3 14 f5 7b 14 e1 80 18   ...L.... ...{....
0030  43 e0 db 75 00 00 01 01  08 0a 03 fd 0c d9 03 1b   C..u.... ........
0040  8b b8 ff ff ff ff ff ff  ff ff ff ff ff ff ff ff   ........ ........
0050  ff ff 00 49 02 00 00 00  32 40 01 01 00 40 02 04   ...I.... 2@...@..
0060  02 01 00 01 40 03 04 01  01 01 05 c0 08 04 00 01   ....@... ........
0070  00 01 c0 11 16 03 12 00  64 13 00 3c 11 00 34 1a   ........ d..<..4.
0080  00 00 01 01 01 01 01 05  0a 0b 00                  ........ ...
```

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/7**
Test Purpose   : Validate that "One Way Delay QoS Code" and its associated Sub-codes are supported.

Procedure   : Configure MESCAL11 to send BGP UPDATE message with following QoS information to MESCAL21.
- Scenario 1: minimum one-way delay 50
- Scenario 2: maximum one-way delay 150
- Scenario 3: average one-way delay 100
- Scenario 4: minimum one-way delay 50 and maximum one-way delay 150
- Scenario 5: minimum one-way delay 50 and average one-way delay 100
- Scenario 6: maximum one-way delay 150 and average one-way delay 100
- Scenario 7: minimum one-way delay 50, maximum one-way delay 150 and average   one-way   delay   100.

A traffic analyzer must be launched in the egress of MESCAL11 in order to examine the values that are set in QoS information Code and QoS information Sub-Code.

Expected result : In all Scenario listed above, QoS information field is coded in 4 bits and QoS information Sub Code is also coded in 4 bits. The values of these fields must be as follows depending on the scenarios listed above:
- Scenario 1: QoS information Code = 2, QoS information Sub Code = 4

- Scenario 2: QoS information Code = 2, QoS information Sub Code = 5
- Scenario 3: QoS information Code = 2, QoS information Sub Code = 6
- Scenario 4:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 5
- Scenario 5:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 6
- Scenario 6:
  - QoS information Code = 2, QoS information Sub Code = 5
  - QoS information Code = 2, QoS information Sub Code = 6
- Scenario 7:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 5
  - QoS information Code = 2, QoS information Sub Code = 6

Execution date : 22/09/04
Result : Obtained results are as follows:
- Scenario 1: QoS information Code = 2, QoS information Sub Code = 4
- Scenario 2: QoS information Code = 2, QoS information Sub Code = 5
- Scenario 3: QoS information Code = 2, QoS information Sub Code = 6
- Scenario 4:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 5
- Scenario 5:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 6
- Scenario 6:
  - QoS information Code = 2, QoS information Sub Code = 5
  - QoS information Code = 2, QoS information Sub Code = 6
- Scenario 7:
  - QoS information Code = 2, QoS information Sub Code = 4
  - QoS information Code = 2, QoS information Sub Code = 5
  - QoS information Code = 2, QoS information Sub Code = 6

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/CMES/8**
Test Purpose : Validate that "Inter-Packet Delay Variation QoS Code" and its associated Sub-codes are supported.

Procedure : Configure MESCAL11 to send BGP UPDATE message with following QoS information to MESCAL21: jitter 5

Expected result : QoS information field is coded in 4 bits and QoS information Sub Code is also coded in 4 bits. The value of these two fields must be:
- QoS information Code = 3, QoS information Sub Code = 0

Execution date : 22/09/04
Result : The value of these two fields are: QoS information Code = 3, QoS information Sub Code = 0
Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/CMES/9**
Test Purpose   : Validate the QoS information value.
Procedure   : Configure MESCAL11 to send BGP UPDATE message with following QoS
                   information to MESCAL21.

- Scenario 1: minimum one-way delay 50, maximum one-way delay 150 and average one-way delay 100
- Scenario 2: reserved rate 100, available rate 100
- Scenario 3: reserved rate 1
- Scenario 4: jitter 5
- Scenario 5: minimum one-way delay -50, maximum one-way delay -150 and average one-way delay -100
- Scenario 6: reserved rate -100, available rate -100

A traffic analyzer must be launched in the egress of MESCAL11 in order to examine the values of QoS information Value field of QoS_NLRI attribute.

Expected result : QoS Information value must be coded in 2 bytes. The value of this field must be as follows (depending on the scenarios listed above)
- Scenario 1:
    - QoS Information Value = 50
    - QoS Information Value = 150
    - QoS Information Value = 100
- Scenario 2:
    - QoS Information Value = 100
    - QoS Information Value = 100
- Scenario 3: QoS Information Value = 1
- Scenario 4: jitter 5
- Scenario 5: Error messages must be returned.
- Scenario 6: Error messages must be returned.

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario 1:
    - QoS Information Value = 50
    - QoS Information Value = 150
    - QoS Information Value = 100

```
⊞ Frame 30 (139 bytes on wire, 139 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 54465 (54465), Dst Port: bgp (179), Seq: 421938161, Ack: 411281136, Len: 73
⊟ Border Gateway Protocol
   ⊟ UPDATE Message
        Marker: 16 bytes
        Length: 73 bytes
        Type: UPDATE Message (2)
        Unfeasible routes length: 0 bytes
        Total path attribute length: 50 bytes
      ⊟ Path attributes
        ⊞ ORIGIN: IGP (4 bytes)
        ⊞ AS_PATH: 1 (7 bytes)
        ⊞ NEXT_HOP: 1.1.1.5 (7 bytes)
        ⊞ COMMUNITIES: 1:1 (7 bytes)
        ⊟ Unknown (25 bytes)
           ⊞ Flags: 0xc0 (Optional, Transitive, Complete)
             Type code: Unknown (17)
             Length: 22 bytes
             Unknown (22 bytes)
```

```
0000  00 50 04 48 c3 63 00 d0  b7 21 50 bd 08 00 45 00   .P.H.c.. .!P...E.
0010  00 7d a6 b0 40 00 01 06  ce be 01 01 01 05 01 01   .}..@... ........
0020  01 06 d4 c1 00 b3 19 26  43 f1 18 83 a6 f0 80 18   .......& C.......
0030  43 e0 9a c2 00 00 01 01  08 0a 03 fd e5 97 03 1c   C....... ........
0040  64 74 ff ff ff ff ff ff  ff ff ff ff ff ff ff ff   dt...... ........
0050  ff ff 00 49 02 00 00 00  32 40 01 01 00 40 02 04   ...I.... 2@...@..
0060  02 01 00 01 40 03 04 01  01 01 05 c0 08 04 00 01   ....@... ........
0070  00 01 c0 11 16 03 26 00  64 25 00 96 24 00 32 1a   ......&. d%..$.2.
0080  00 00 01 01 01 01 01 05  0a 0b 00                  ........ ...
```

- Scenario 2:
  - QoS Information Value = 100
  - QoS Information Value = 100
- Scenario 3: QoS Information Value = 1
- Scenario 4: jitter 5

```
⊞ Frame 26 (133 bytes on wire, 133 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 54531 (54531), Dst Port: bgp (179), Seq: 723472046, Ack: 718170805, Len: 67
⊟ Border Gateway Protocol
   ⊟ UPDATE Message
        Marker: 16 bytes
        Length: 67 bytes
        Type: UPDATE Message (2)
        Unfeasible routes length: 0 bytes
        Total path attribute length: 44 bytes
      ⊟ Path attributes
        ⊞ ORIGIN: IGP (4 bytes)
        ⊞ AS_PATH: 1 (7 bytes)
        ⊞ NEXT_HOP: 1.1.1.5 (7 bytes)
        ⊞ COMMUNITIES: 1:1 (7 bytes)
        ⊟ Unknown (19 bytes)
           ⊞ Flags: 0xc0 (Optional, Transitive, Complete)
             Type code: Unknown (17)
             Length: 16 bytes
             Unknown (16 bytes)
```

```
0000  00 50 04 48 c3 63 00 d0  b7 21 50 bd 08 00 45 00   .P.H.c.. .!P...E.
0010  00 77 16 0f 40 00 01 06  5f 66 01 01 01 05 01 01   .w..@... _f......
0020  01 06 d5 03 00 b3 2b 1f  4e ae 2a ce 6a b5 80 18   ......+. N.*.j...
0030  43 e0 79 47 00 00 01 01  08 0a 03 fe 58 b5 03 1c   C.yG.... ....X...
0040  d7 92 ff ff ff ff ff ff  ff ff ff ff ff ff ff ff   ........ ........
0050  ff ff 00 43 02 00 00 00  2c 40 01 01 00 40 02 04   ...C.... ,@...@..
0060  02 01 00 01 40 03 04 01  01 01 05 c0 08 04 00 01   ....@... ........
0070  00 01 c0 11 10 01 30 00  05 1a 00 00 01 01 01 01   ......0. ........
0080  01 05 0a 0b 00                                     .....
```

- Scenario 5: "Unknown command" message is returned.
- Scenario 6: "Unknown command" message is returned.

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/10**
Test Purpose   : Validate the QoS information codes, sub-codes and values.
Procedure   : Configure MESCAL11 to send BGP UPDATE message with following QoS information to MESCAL21:

- available rate 130, average one-way delay 100, jitter 5, loss rate 60, maximum one-way delay 150, minimum one-way delay 50 and reserved rate 95

A traffic analyzer must be launched in the egress of MESCAL11 in order to examine the values of QoS information code, sub-codes and value field of QoS_NLRI attribute.

Expected result : The value of the QoS information length field must be 0x07. There must be 7 QoS Informations each composed of a QoS information code (1 byte), sub-code (1 byte) and value (2 byte) fields. The following unordered QoS Informations must be announced:

- QoS Information code = 1, QoS Information code = 2, QoS Information value = 0x0082
- QoS Information code = 2, QoS Information code = 6, QoS Information value = 0x0064
- QoS Information code = 3, QoS Information code = 0, QoS Information value = 0x0005
- QoS Information code = 1, QoS Information code = 3, QoS Information value = 0x003c
- QoS Information code = 2, QoS Information code = 5, QoS Information value = 0x0096
- QoS Information code = 2, QoS Information code = 4, QoS Information value = 0x0032
- QoS Information code = 1, QoS Information code = 1, QoS Information value = 0x005f

Execution date : 22/09/04
Result   : The following unordered QoS Informations are announced:

- QoS Information code = 1, QoS Information code = 2, QoS Information value = 0x0082
- QoS Information code = 2, QoS Information code = 6, QoS Information value = 0x0064
- QoS Information code = 3, QoS Information code = 0, QoS Information value = 0x0005
- QoS Information code = 1, QoS Information code = 3, QoS Information value = 0x003c
- QoS Information code = 2, QoS Information code = 5, QoS Information value = 0x0096
- QoS Information code = 2, QoS Information code = 4, QoS Information value = 0x0032

- QoS Information code = 1, QoS Information code = 1, QoS Information value = 0x005f

```
⊞ Frame 20 (151 bytes on wire, 151 bytes captured)
⊞ Ethernet II, Src: 00:d0:b7:21:50:bd, Dst: 00:50:04:48:c3:63
⊞ Internet Protocol, Src Addr: 1.1.1.5 (1.1.1.5), Dst Addr: 1.1.1.6 (1.1.1.6)
⊞ Transmission Control Protocol, Src Port: 51956 (51956), Dst Port: bgp (179), Seq: 2781780667, Ack: 2777790318, Len: 85
⊟ Border Gateway Protocol
    ⊟ UPDATE Message
         Marker: 16 bytes
         Length: 85 bytes
         Type: UPDATE Message (2)
         Unfeasible routes length: 0 bytes
         Total path attribute length: 62 bytes
      ⊟ Path attributes
         ⊟ ORIGIN: IGP (4 bytes)
            ⊞ Flags: 0x40 (Well-known, Transitive, Complete)
               Type code: ORIGIN (1)
               Length: 1 byte
               Origin: IGP (0)
         ⊟ AS_PATH: 1 (7 bytes)
            ⊞ Flags: 0x40 (Well-known, Transitive, Complete)
               Type code: AS_PATH (2)
               Length: 4 bytes
            ⊞ AS path: 1
         ⊟ NEXT_HOP: 1.1.1.5 (7 bytes)
            ⊞ Flags: 0x40 (Well-known, Transitive, Complete)
               Type code: NEXT_HOP (3)
               Length: 4 bytes
               Next hop: 1.1.1.5
         ⊟ COMMUNITIES: 1:1 (7 bytes)
            ⊞ Flags: 0xc0 (Optional, Transitive, Complete)
               Type code: COMMUNITIES (8)
               Length: 4 bytes
            ⊞ Communities: 1:1
         ⊟ Unknown (37 bytes)
            ⊞ Flags: 0xc0 (Optional, Transitive, Complete)
               Type code: Unknown (17)
               Length: 34 bytes
               Unknown (34 bytes)
```

```
0060  02 01 00 01 40 03 04 01  01 01 05 c0 08 04 00 01   ....@... ........
0070  00 01 c0 11 22 07 12 00  82 26 00 64 30 00 05 13   ...." ... .&.d0...
0080  00 3c 25 00 96 24 00 32  11 00 5f 00 00 00 01 01   .<%..$.2 .._.....
0090  01 01 01 05 0a 0b 00                                .......
```

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/11**
Test Purpose   : Verify that QoS class identifier can be set to a value that is between 0 and 63.
Procedure   : Configure MESCAL11 to send BGP UPDATE messages to MESCAL21 in the following meta-QoS-class plans:
- Plan 1: 0
- Plan 2: -1
- Plan 3: 25
- Plan 4: 63
- Plan 5: 70
- Plan 6: 55
- Plan 7: 33

Traffic must be sniffed in the egress of MESCAL11 or in ingress of MESCAL21 to verify the value of QoS class identifier in BGP UPDATE messages.

Expected result : QoS class identifier is coded in one byte and must be set to the value that is indicated bellow or an error message must be returned to the administrator:
- Plan 1: 0
- Plan 2: An error message must be returned to the administrator
- Plan 3: 25
- Plan 4: 63
- Plan 5: An error message must be returned to the administrator
- Plan 6: 55
- Plan 7: 33

Execution date : 22/09/04
Result : Obtained results are as follows:
- Plan 1: The QoS class identifier is set to 0.
- Plan 2: "Unknown command" message is returned.
- Plan 3: The QoS class identifier is set to 25.
- Plan 4: The QoS class identifier is set to 63.
- Plan 5: "Unknown command" message is returned.
- Plan 6: The QoS class identifier is set to 55.
- Plan 7: The QoS class identifier is set to 33.

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/CMES/12**
Test Purpose : Validate the QoS Origin field.
Procedure : Clear the network prefixes announced by MESCAL11. And then make the following operations:

Configure a route static towards 193.251.128.0/19 via eth1

Add the following command lines in MESCAL11 BGP configuration "**network 212.167.0.0/21"** and "**network 62.42.0.0/16**"

Add the following commands "**redistribute connected**" and "**redistribute static**"

Under BGP router configuration, add the following line
                    Neighbour 1.1.1.6 route-map SetOrigin out
Define this prefix-list:
                    ip prefix-list test11 permit 62.42.0.0/16
                    ip prefix-list test11 deny any
Define this route-map:
   route-map SetOrigin permit 10
    match ip address prefix-list test11
    set origin egp
   route-map SetOrigin permit 20

Note that a BGP session must be activated between MESCAL11 and MESCAL12.

Expected result : Execute this CLI command in MESCAL11: "**sh ip bgp**". The value of the origin value must be positioned as follows:

For **212.167.0.0/21** entry origin must be IGP
For **62.42.0.0/16** entry origin value must be IGP
For **1.1.1.0/30** entry origin value must be incomplete
For **193.251.128.0/19** origin value must be incomplete

Execute this CLI command in MESCAL21: "**sh ip bgp**". The value of the origin value must be positioned as follows:

For **212.167.0.0/21** entry origin must be IGP
For **62.42.0.0/16** entry origin value must be EGP
For **193.251.128.0/19** origin value must be incomplete

Execution date : 22/09/04
Result : The command "**sh ip bgp**" in MESCAL11 shows that:
212.167.0.0/21 entry origin is IGP
62.42.0.0/16 entry origin value is IGP
1.1.1.0/30 entry origin value is incomplete
193.251.128.0/19 origin value is incomplete

The command "**sh ip bgp**" in MESCAL11 shows that:
212.167.0.0/21 entry origin is IGP
62.42.0.0/16 entry origin value is EGP
193.251.128.0/19 origin value is incomplete

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/CMES/13**
Test Purpose : Check the validity of Address Family Identifier (AFI). For information, the value of this field could be as follows:

Number	Description
0	Reserved
1	IP (IP version 4)
2	IP6 (IP version 6)
3	NSAP
4	HDLC (8-bit multidrop)
5	BBN 1822
6	802
7	E.163
8	E.164 (SMDS, Frame Relay, ATM)
9	F.69 (Telex)
10	X.121 (X.25, Frame Relay)
11	IPX
12	Appletalk
13	Decnet IV
14	Banyan Vines
65535	Reserved

Procedure : Configuration of MESCAL11 is the same as for the previous test. Launch a traffic analyzer in MESCAL11. Execute the following command "**clear ip bgp ***".

Expected result : Within the traffic analyzer, Check the value of AFI field of QoS_NLRI attribute. The value of AFI must be: 1.

Execution date : 22/09/04
Result : The value of AFI in the QoS_NLRI attribute is 1.

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/14**
Test Purpose   : Check the validity of Subsequent Address Family Identifier (SAFI). For information, the value of this field could be as follows:

- **1: Network Layer Reachability Information used for unicast forwarding**

- **2: Network Layer Reachability Information used for multicast forwarding**

- **3: Network Layer Reachability Information used for both unicast and multicast forwarding**

Procedure   : Configuration of MESCAL11 is the same as for the previous test. Launch a traffic analyzer in MESCAL11. Execute the following command "**clear ip bgp ***".

Expected result : Within the traffic analyzer, Check the value of SAFI field of QoS_NLRI attribute. The value of this field must be: 1. Multicast is out of scope.

Execution date : 22/09/04
Result   : The value of SAFI in the QoS_NLRI attribute is 1.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/15**
Test Purpose   : Check the validity of Network Address of Next Hop.
Procedure   : Configuration of MESCAL11 is the same as for the previous test. Log to MESCAL21 and execute the following command line "**sh ip bgp**".

Configure MESCAL31 to send the following network "**216.191.64.0/20**". Log to MESCAL41 and execute the following command line "**sh ip bgp**". Also log to MESCAL43 and execute the following command line "**sh ip bgp**". The BGP session between MESCAL31 and MESCAL42 must be down.

Expected result : When executing the command above in MESCAL21, in Next Hop column, the following IP address must be present:
For **212.167.0.0/21** entry **1.1.1.5**
For **62.42.0.0/16** entry **1.1.1.5**
For **1.1.1.0/30** entry **1.1.1.5**

When executing the command above in MESCAL41, in Next Hop column, the following IP address must be present:
For **216.191.64.0/20** entry **3.3.3.1**

When executing the command above in MESCAL43, in Next Hop column, the following IP address must be present:
For **216.191.64.0/20** entry **3.3.3.1**

Execution date : 22/09/04
Result   : When executing the command above in MESCAL21, in Next Hop column, the following IP address are present:
For **212.167.0.0/21** entry **1.1.1.5**

For **62.42.0.0/16** entry **1.1.1.5**
For **1.1.1.0/30** entry **1.1.1.5**

When executing the command above in MESCAL41, in Next Hop column, the following IP address are present:
For **216.191.64.0/20** entry **3.3.3.1**

When executing the command above in MESCAL43, in Next Hop column, the following IP address is present:
For **216.191.64.0/20** entry **3.3.3.1**

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/CMES/16**
Test Purpose   : Verify the conformance of NLRI field.
Procedure   : Log to MESCAL11 and define three local-QoS-classes for MESCAL11.

Scenario 1: Add the following commands:
- **193.251.128.0/19 local-qos-class 0**
- **212.167.0.0/21 local-qos-class 0**
- **62.42.0.0/16 local-qos-class 0**
- **193.251.240.0/20 local-qos-class 0**

Scenario 2: Add the following commands:
- **193.251.128.0/19 local-qos-class 1**
- **212.167.0.0/21 local-qos-class 1**
- **62.42.0.0/16 local-qos-class 1**
- **193.251.240.0/20 local-qos-class 1**

Scenario 3: Add the following commands:
- **193.251.128.0/19 local-qos-class 0 1 2**
- **212.167.0.0/21 local-qos-class 0 1 2**
- **62.42.0.0/16 local-qos-class 0 1 2**
- **193.251.240.0/20 local-qos-class 0 1 2**

Scenario 4: Add the following commands:
- **193.251.128.0/19 local-qos-class 0**
- **212.167.0.0/21 local-qos-class 1 2**
- **62.42.0.0/16 local-qos-class 2**
- **193.251.240.0/20 local-qos-class 0 1**

A traffic analyser must be launched in MESCAL11 and capture the traffic that is sent in interface used to connect to MESCAL21.

Expected result : With the traffic analyzer, we must visualize the following results according to the Scenario we are studing:
- Scenario 1: Only one QoS_NLRI message is sent to MESCAL21. The NLRI field contains the following prefixes: **193.251.0/19**, **212.167.0.0/21**, **62.42.0.0/16** and **193.251.240.0/20**.

- Scenario 2: Only one QoS_NLRI message is sent to MESCAL21. The NLRI field contains the following prefixes: **193.251.0/19, 212.167.0.0/21, 62.42.0.0/16** and **193.251.240.0/20.**
- Scenario 3: Three QoS_NLRI messages are sent to MESCAL21. The NLRI field of each QoS_NLRI message contains the following prefixes: **193.251.0/19, 212.167.0.0/21, 62.42.0.0/16** and **193.251.240.0/20.**
- Scenario 4: Three QoS_NLRI messages are sent to MESCAL21.
  - o The NLRI field of the first message contains **193.251.0/19** and **193.251.240.0/20.**
  - o The NLRI field of the second message contains **212.167.0.0/21** and **62.42.0.0/16.**
  - o The NLRI field of the third message contains **212.167.0.0/21** and **193.251.240.0/20.**

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario 1: Only one QoS_NLRI message is sent to MESCAL21. The NLRI field contains the following prefixes: **193.251.0/19**, **212.167.0.0/21**, **62.42.0.0/16** and **193.251.240.0/20**.
- Scenario 2: Only one QoS_NLRI message is sent to MESCAL21. The NLRI field contains the following prefixes: **193.251.0/19, 212.167.0.0/21, 62.42.0.0/16** and **193.251.240.0/20.**

- Scenario 3: Three QoS_NLRI messages are sent to MESCAL21. The NLRI field of each QoS_NLRI message contains the following prefixes: **193.251.0/19, 212.167.0.0/21, 62.42.0.0/16** and **193.251.240.0/20.**
- Scenario 4: Three QoS_NLRI messages are sent to MESCAL21.
  - The NLRI field of the first message contains **193.251.0/19** and **193.251.240.0/20.**

- The NLRI field of the second message contains **212.167.0.0/21** and **62.42.0.0/16.**
- The NLRI field of the third message contains **212.167.0.0/21** and **193.251.240.0/20.**

Failure level   : None
Remarks   : None

10.2.2 TB_P2_FUNCT/DSCP

Test Reference : **TB_P2_FUNCT/DSCP/1**

Test Purpose : Validate that egress DSCP swapping operation is correctly achieved when receiving BGP UPDATE messages.

Procedure   : Configure MESCAL11'q-BGP process to be instantiated in the local QoS classes bellow:

- Lqc0.dscp = 0
- Lqc1.dscp = 10
- Lqc2.dscp = 12
- Lqc3.dscp = 14
- Lqc4.dscp = 26
- Lqc5.dscp = 13
- Lqc6.dscp = 63

In addition, the following mapping between local QoS classes and meta-QoS-classes is also configured in MESCAL11:

- 0 is mapped to 0
- 10 is mapped to 26
- 12 is mapped to 28
- 14 is mapped to 30

MESCAL11 Network prefixes are to be announced to MESCAL21 in the local QoS classes as specified bellow:

Scenario 1: **193.251.128.0/19** is to be announced in lqc0
Scenario 2: **193.251.128.0/19** is to be announced in lqc0, lqc1, lqc2 and lqc3
Scenario 3: **193.251.128.0/19** is to be announced in lqc0, lqc4, lqc5 and lqc6
Scenario 4: **193.251.128.0/19** is to be announced in lqc0, lqc1, lqc2 and lqc6

A traffic analyzer must be used in the egress of MESCAL11 in order to verify the value carried in q-BGP UPDATE messages.

Expected result : In egress of MESCAL11, QoS class identifier of QoS_NLRI attribute must be set to the value that is listed below:

- Scenario 1: QoS_NLRI message must have a QoS class identifier set to 0 for the prefix **193.251.128.0/19**
- Scenario 2: Four q-BGP UPDATE messages for the prefix **193.251.128.0/19** must be sent to MESCAL21 with different QoS_NLRI attributes. QoS class identifier of the first q-BGP UPDATE message is set to 0. QoS class identifier of the second q-BGP UPDATE message is set to 26. QoS class identifier of the third q-BGP UPDATE message is set to 28 and QoS class identifier of the fourth q-BGP UPDATE message is set to 30.

- Scenario 3: Only one q-BGP UPDATE message for the prefix **193.251.128.0/19** must be sent to MESCAL21. QoS class identifier value in QoS_NLRI attribute is 0.
- Scenario 4: Three q-BGP UPDATE messages for the prefix **193.251.128.0/19** must be sent to MESCAL21 with different QoS_NLRI attributes. QoS class identifier of the first q-BGP UPDATE message is set to 0. QoS class identifier of the second q-BGP UPDATE message is set to 26. QoS class identifier of the third q-BGP UPDATE message is set to 28.

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario 1: QoS_NLRI message has a QoS class identifier set to 0 for the prefix **193.251.128.0/19**
- Scenario 2: Four q-BGP UPDATE messages for the prefix **193.251.128.0/19** are sent to MESCAL21 with different QoS_NLRI attributes. QoS class identifier of the first q-BGP UPDATE message is set to 0. QoS class identifier of the second q-BGP UPDATE message is set to 26. QoS class identifier of the third q-BGP UPDATE message is set to 28 and QoS class identifier of the fourth q-BGP UPDATE message is set to 30.
- Scenario 3: Only one q-BGP UPDATE message for the prefix **193.251.128.0/19** is sent to MESCAL21. QoS class identifier value in QoS_NLRI attribute is 0.
- Scenario 4: Three q-BGP UPDATE messages for the prefix **193.251.128.0/19** are sent to MESCAL21 with different QoS_NLRI attributes. QoS class identifier of the first q-BGP UPDATE message is set to 0. QoS class identifier of the second q-BGP UPDATE message is set to 26. QoS class identifier of the third q-BGP UPDATE message is set to 28.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/DSCP/2**
Test Purpose   : Validate that ingress DSCP swapping operation is correctly achieved when receiving BGP UPDATE messages.

Procedure   : Configure MESCAL21'q-BGP process to be instantiated in the local QoS classes bellow:
- Lqc0.dscp = 0
- Lqc1.dscp = 18
- Lqc2.dscp = 20
- Lqc3.dscp = 22
- Lqc4.dscp = 26
- Lqc5.dscp = 13
- Lqc6.dscp = 63

Configure MESCAL11'q-BGP process to be instantiated in the local QoS classes bellow:
- Lqc0.dscp = 0
- Lqc1.dscp = 26
- Lqc2.dscp = 28
- Lqc3.dscp = 30
- Lqc4.dscp = 44
- Lqc5.dscp = 63

■ Lqc6.dscp = 55

The following mapping between local QoS classes and meta-QoS-classes is also configured in MESCAL21:

- ■ 0 is mapped to 0
- ■ 18 is mapped to 26
- ■ 20 is mapped to 28
- ■ 22 is mapped to 30

Network prefixes are to be announced to MESCAL21 in the local QoS classes as specified bellow:

- ■ Scenario 1: **193.251.128.0/19** is to be announced in lqc0
- ■ Scenario 2: **193.251.128.0/19** is to be announced in lqc0, lqc1, lqc2 and lqc3
- ■ Scenario 3: **193.251.128.0/19** is to be announced in lqc4, lqc5 and lqc6
- ■ Scenario 4: **193.251.128.0/19** is to be announced in lqc1, lqc2, lqc3 and lqc6

A traffic analyzer must be used in the egress of MESCAL11 in order to verify the value carried in q-BGP UPDATE messages.

In MESCAL21, the following '**sh ip route**' or '**sh ip bgp**' commands must be executed in order to verify the existence of the network prefix announced by MESCAL11 in the appropriate local QoS class.

Expected result : when executing the '**sh ip route**' command in MESCAL21, the **193.251.128.0/19** entry must be in the appropriate local QoS class.

- ■ Scenario 1: The prefix **193.251.128.0/19** exists only in the local QoS class 0
- ■ Scenario 2: The prefix **193.251.128.0/19** exists in the following local-QoS-class planes:
  - o Lqc0= 0
  - o Lqc1= 18
  - o Lqc2= 20
  - o Lqc3= 22
- ■ Scenario 3: The prefix **193.251.128.0/19** does not exist in any local QoS class
- ■ Scenario 4: The prefix **193.251.128.0/19** exists in the following local-QoS-class planes:
  - o Lqc1= 18
  - o Lqc2= 20
  - o Lqc3= 22

Execution date : 22/09/04

Result   : Obtained results are as follows:

- ■ Scenario 1: The prefix **193.251.128.0/19** exists only in the local QoS class 0
- ■ Scenario 2: The prefix **193.251.128.0/19** exists only in the following local-QoS-class planes:
  - o Lqc0= 0
  - o Lqc1= 18
  - o Lqc2= 20
  - o Lqc3= 22
- ■ Scenario 3: The prefix **193.251.128.0/19** does not exist in any local QoS class

- Scenario 4: The prefix **193.251.128.0/19** exists only in the following local-QoS-class planes:
  - o Lqc1= 18
  - o Lqc2= 20
  - o Lqc3= 22

```
MESCAL21# sh ip bgp
No BGP network in the local-qos-class 0 exists
BGP table version is 0, local router ID is 21.21.21.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 1 (loose solution options) :
   Network              QC-id Next Hop          Metric LocPrf Weight Path
*> 193.251.128.0/19       18 1.1.1.5                            0    1 i

Total number of prefixes in the local-qos-class 1 : 1

local-qos-class 2 (loose solution options) :
   Network              QC-id Next Hop          Metric LocPrf Weight Path
*> 193.251.128.0/19       20 1.1.1.5                            0    1 i

Total number of prefixes in the local-qos-class 2 : 1

local-qos-class 3 (loose solution options) :
   Network              QC-id Next Hop          Metric LocPrf Weight Path
*> 193.251.128.0/19       22 1.1.1.5                            0    1 i

Total number of prefixes in the local-qos-class 3 : 1

No BGP network in the local-qos-class 4 exists
No BGP network in the local-qos-class 5 exists
No BGP network in the local-qos-class 6 exists
```

Failure level   : None
Remarks   : None

10.2.3 TB_P2_FUNCT/QCMP

Conformance status is optional for all attributes in the following tests.

Test Reference : **TB_P2_FUNCT/QCMP/1**
Test Purpose   :
Check that the **reserved-rate** QoS parameter is correctly computed by the receiving ASBR.
Procedure   :
Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic. Successively carry out the following elementary tests with the following parameters values:
A - Set l-QC11.reserved-rate = 500 and l-QC21.reserved-rate = 250.
B - Set l-QC11.reserved-rate = 250 and l-QC21.reserved-rate = 500.
C - Set l-QC11.reserved-rate = 0 and l-QC21.reserved-rate = 250.
D - Set l-QC11.reserved-rate = 500 and l-QC21.reserved-rate = 0.
E - Set l-QC11.reserved-rate = 65535 and l-QC21.reserved-rate = 250.
F - Set l-QC11.reserved-rate = 500 and l-QC21.reserved-rate = 65535.
G - Set l-QC11.reserved-rate = 65535 and l-QC21.reserved-rate = 65535.
H - Set l-QC11.reserved-rate = 0 and l-QC21.reserved-rate = 65535.
I - Set l-QC11.reserved-rate = null and l-QC21.reserved-rate = 500.
J - Set l-QC11.reserved-rate = 500 and l-QC21.reserved-rate = null.
K - Set l-QC11.reserved-rate = null and l-QC21.reserved-rate = null.
All other QoS parameters are un-valued. Configure q-BGP so that AS2 announces

network 194.52.168.0/21. Note on AS1 the value of the computed reserved-rate QoS parameter for this network.

Expected result :

A - reserved-rate = 250
B - reserved-rate = 250
C - reserved-rate = 0
D - reserved-rate = 0
E - reserved-rate = 250
F - reserved-rate = 500
G - reserved-rate = 65535
H - reserved-rate = 0
I - reserved-rate = null
J - reserved-rate = null
K - reserved-rate = null

Execution date : 22/09/04
Result   : Obtained results are as follows:

A - reserved-rate = 250
B - reserved-rate = 250
C - reserved-rate = 0
D - reserved-rate = 0
E - reserved-rate = 250
F - reserved-rate = 500
G - reserved-rate = 65535
H - reserved-rate = 0
I - reserved-rate = null
J - reserved-rate = null
K - reserved-rate = null

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/2**
Test Purpose   :

Check that invalid **<u>reserved-rate</u>** values are rejected by the command-line interface.

Procedure   :

Specify the following invalid values on AS1:
A - Set l-QC11.reserved-rate = 65736
B - Set l-QC11.reserved-rate = 99999999999999999
C - Set l-QC11.reserved-rate = -1
D - Set l-QC11.reserved-rate = -65736
E - Set l-QC11.reserved-rate = string
F - Set l-QC11.reserved-rate = 1string

Expected result :

All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/3**

Test Purpose   :
Check that the **available-rate** QoS parameter is correctly computed by the receiving ASBR.

Procedure   :
Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic. Successively carry out the following elementary tests with the following parameters values:
A - Set l-QC11.available-rate = 500 and l-QC21.available-rate = 250.
B - Set l-QC11.available-rate = 250 and l-QC21.available-rate = 500.
C - Set l-QC11.available-rate = 0 and l-QC21.available-rate = 250.
D - Set l-QC11.available-rate = 500 and l-QC21.available-rate = 0.
E - Set l-QC11.available-rate = 65535 and l-QC21.available-rate = 250.
F - Set l-QC11.available-rate = 500 and l-QC21.available-rate = 65535.
G - Set l-QC11.available-rate = 65535 and l-QC21.available-rate = 65535.
H - Set l-QC11.available-rate = 0 and l-QC21.available-rate = 65535.
I - Set l-QC11.available-rate = null and l-QC21.available-rate = 500.
J - Set l-QC11.available-rate = 500 and l-QC21.available-rate = null.
K - Set l-QC11.available-rate = null and l-QC21.available-rate = null.
All other QoS parameters are un-valued. Configure q-BGP so that AS2 announces network 194.52.168.0/21. Note on AS1 the value of the computed available-rate QoS parameter for this network.

Expected result :
A - available-rate = 250
B - available-rate = 250
C - available-rate = 0
D - available-rate = 0
E - available-rate = 250
F - available-rate = 500
G - available-rate = 65535
H - available-rate = 0
I - available-rate = null
J - available-rate = null
K - available-rate = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
A - available-rate = 250
B - available-rate = 250
C - available-rate = 0
D - available-rate = 0
E - available-rate = 250
F - available-rate = 500
G - available-rate = 65535
H - available-rate = 0
I - available-rate = null
J - available-rate = null
K - available-rate = null

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/4**
Test Purpose   :
Check that invalid **available-rate** values are rejected by the command-line interface.

Procedure   :
                   Specify the following invalid values on AS1:
                   A - Set l-QC11.available-rate = 65736
                   B - Set l-QC11.available-rate = 99999999999999999
                   C - Set l-QC11.available-rate = -1
                   D - Set l-QC11.available-rate = -65736
                   E - Set l-QC11.available-rate = string
                   F - Set l-QC11.available-rate = 1string
Expected result :
                   All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/5**
Test Purpose   :
                   Check that the **min-owd** (minimum one-way-delay) QoS parameter is correctly
                   computed by the receiving ASBR.
Procedure   :
                   Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic. Successively
                   carry out the following elementary tests with the following parameters values:
                   A - Set l-QC11.min-owd = 500 and l-QC21.min-owd = 250.
                   B - Set l-QC11.min-owd = 250 and l-QC21.min-owd = 500.
                   C - Set l-QC11.min-owd = 0 and l-QC21.min-owd = 250.
                   D - Set l-QC11.min-owd = 500 and l-QC21.min-owd = 0.
                   E - Set l-QC11.min-owd = 65535 and l-QC21.min-owd = 250.
                   F - Set l-QC11.min-owd = 500 and l-QC21.min-owd = 65535.
                   G - Set l-QC11.min-owd = 65535 and l-QC21.min-owd = 65535.
                   H - Set l-QC11.min-owd = 0 and l-QC21.min-owd = 65535.
                   I - Set l-QC11.min-owd = null and l-QC21.min-owd = 500.
                   J - Set l-QC11.min-owd = 500 and l-QC21.min-owd = null.
                   K - Set l-QC11.min-owd = null and l-QC21.min-owd = null.
                   All other QoS parameters are un-valued. Configure q-BGP so that AS2 announces
                   network 194.52.168.0/21. Note on AS1 the value of the computed min-owd QoS
                   parameter for this network.
Expected result :
                   A - min-owd = 750
                   B - min-owd = 750
                   C - min-owd = 250
                   D - min-owd = 500
                   E - min-owd = 65535
                   F - min-owd = 65535
                   G - min-owd = 65535
                   H - min-owd = 65535
                   I - min-owd = null
                   J - min-owd = null
                   K - min-owd = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
                   A - min-owd = 750
                   B - min-owd = 750

C - min-owd = 250
D - min-owd = 500
E - min-owd = 65535
F - min-owd = 65535
G - min-owd = 65535
H - min-owd = 65535
I - min-owd = null
J - min-owd = null
K - min-owd = null

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/6**
Test Purpose   :
                   Check that invalid **min-owd** values are rejected but the command-line interface.
Procedure   :
                   Specify the following invalid values on AS1:
                   A - Set l-QC11.min-owd = 65736
                   B - Set l-QC11.min-owd = 99999999999999999
                   C - Set l-QC11.min-owd = -1
                   D - Set l-QC11.min-owd = -65736
                   E - Set l-QC11.min-owd = string
                   F - Set l-QC11.min-owd = 1string
Expected result :
                   All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/7**
Test Purpose   :
                   Check that the **max-owd** (maximum one-way-delay) QoS parameter is correctly
                   computed by the receiving ASBR.
Procedure   :
                   Same procedure as TB_P2_FUNCT/QCMP/5. Replace min-owd by **max-owd**.
Expected result :
                   A - max-owd = 750
                   B - max-owd = 750
                   C - max-owd = 250
                   D - max-owd = 500
                   E - max-owd = 65535
                   F - max-owd = 65535
                   G - max-owd = 65535
                   H - max-owd = 65535
                   I - max-owd = null
                   J - max-owd = null
                   K - max-owd = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
                   A - max-owd = 750
                   B - max-owd = 750

C - max-owd = 250
D - max-owd = 500
E - max-owd = 65535
F - max-owd = 65535
G - max-owd = 65535
H - max-owd = 65535
I - max-owd = null
J - max-owd = null
K - max-owd = null

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/8**
Test Purpose   :
                  Check that invalid **max-owd** values are rejected by the command-line interface.
Procedure   :
                  Same procedure as TB_P2_FUNCT/QCMP/6. Replace min-owd by **max-owd**.
Expected result :
                  All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/9**
Test Purpose   :
                  Check that the **average-owd** (average one-way-delay) QoS parameter is correctly computed by the receiving ASBR.
Procedure   :
                  Same procedure as TB_P2_FUNCT/QCMP/5. Replace min-owd by **average-owd**.
Expected result :
                  A - average-owd = 750
                  B - average -owd = 750
                  C - average -owd = 250
                  D - average -owd = 500
                  E - average -owd = 65535
                  F - average -owd = 65535
                  G - average -owd = 65535
                  H - average -owd = 65535
                  I - average -owd = null
                  J - average -owd = null
                  K - average -owd = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
                  A - average-owd = 750
                  B - average -owd = 750
                  C - average -owd = 250
                  D - average -owd = 500
                  E - average -owd = 65535
                  F - average -owd = 65535
                  G - average -owd = 65535

H - average -owd = 65535
I - average -owd = null
J - average -owd = null
K - average -owd = null

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/QCMP/10**
Test Purpose :
Check that invalid **average-owd** values are rejected by the command-line interface.
Procedure :
Same procedure as TB_P2_FUNCT/QCMP/6. Replace min-owd by **average-owd**.
Expected result :
All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result : All the above values are rejected by the command-line interface.
Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/QCMP/11**
Test Purpose :
Check that the **loss-rate** QoS parameter is correctly computed by the receiving ASBR.
Procedure :
Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic. Successively
carry out the following elementary tests with the following parameters values:
A - Set l-QC11.loss-rate = 500 and l-QC21.loss-rate = 250.
B - Set l-QC11.loss-rate = 250 and l-QC21.loss-rate = 500.
C - Set l-QC11.loss-rate = 0 and l-QC21.loss-rate = 250.
D - Set l-QC11.loss-rate = 500 and l-QC21.loss-rate = 0.
E - Set l-QC11.loss-rate = 65535 and l-QC21.loss-rate = 250.
F - Set l-QC11.loss-rate = 500 and l-QC21.loss-rate = 65535.
G - Set l-QC11.loss-rate = 65535 and l-QC21.loss-rate = 65535.
H - Set l-QC11.loss-rate = 0 and l-QC21.loss-rate = 65535.
I - Set l-QC11.loss-rate = null and l-QC21.loss-rate = 500.
J - Set l-QC11.loss-rate = 500 and l-QC21.loss-rate = null.
K - Set l-QC11.loss-rate = null and l-QC21.loss-rate = null.
All other QoS parameters are un-valued. Configure q-BGP so that AS2 announces
network 194.52.168.0/21. Note on AS1 the value of the computed loss-rate QoS
parameter for this network.
A loss-rate = 1 means 0.001%
Expected result :
A - loss-rate = 748 or 749 depending on the round-off
B - loss-rate = 748 or 749 depending on the round-off
C - loss-rate = 250
D - loss-rate = 500
E - loss-rate = 65535
F - loss-rate = 65535
G - loss-rate = 65535
H - loss-rate = 65535
I - loss-rate = null
J - loss-rate = null
K - loss-rate = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
                        A - loss-rate = 748
                        B - loss-rate = 748
                        C - loss-rate = 250
                        D - loss-rate = 500
                        E - loss-rate = 65535
                        F - loss-rate = 65535
                        G - loss-rate = 65535
                        H - loss-rate = 65535
                        I - loss-rate = null
                        J - loss-rate = null
                        K - loss-rate = null

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/12**
Test Purpose   :
                        Check that invalid **loss-rate** values are rejected by the command-line interface.
Procedure   :
                        Specify the following invalid values on AS1:
                        A - Set l-QC11.loss-rate to 65736
                        B - Set l-QC11.loss-rate to 99999999999999999
                        C - Set l-QC11.loss-rate to -1
                        D - Set l-QC11.loss-rate to -65736
                        E - Set l-QC11.loss-rate to string
                        F - Set l-QC11.loss-rate to 1string
Expected result :
                        All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/13**
Test Purpose   :
                        Check that the **jitter** QoS parameter is correctly computed by the receiving ASBR.
Procedure   :
                        Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic. Successively
                        carry out the following elementary tests with the following parameters values:
                        A - Set l-QC11.jitter = 500 and l-QC21.jitter = 250.
                        B - Set l-QC11.jitter = 250 and l-QC21.jitter = 500.
                        C - Set l-QC11.jitter = 0 and l-QC21.jitter = 250.
                        D - Set l-QC11.jitter = 500 and l-QC21.jitter = 0.
                        E - Set l-QC11.jitter = 65535 and l-QC21.jitter = 250.
                        F - Set l-QC11.jitter = 500 and l-QC21.jitter = 65535.
                        G - Set l-QC11.jitter = 65535 and l-QC21.jitter = 65535.
                        H - Set l-QC11.jitter = 0 and l-QC21.jitter = 65535.
                        I - Set l-QC11.jitter = null and l-QC21.jitter = 500.
                        J - Set l-QC11.jitter = 500 and l-QC21.jitter = null.
                        K - Set l-QC11.jitter = null and l-QC21.jitter = null.

All other QoS parameters are un-valued. Configure q-BGP so that AS2 announces network 194.52.168.0/21. Note on AS1 the value of the computed jitter QoS parameter for this network.

Expected result :
- A - jitter = 750
- B - jitter = 750
- C - jitter = 250
- D - jitter = 500
- E - jitter = 65535
- F - jitter = 65535
- G - jitter = 65535
- H - jitter = 65535
- I - jitter = null
- J - jitter = null
- K - jitter = null

Execution date : 22/09/04
Result   : Obtained results are as follows:
- A - jitter = 750
- B - jitter = 750
- C - jitter = 250
- D - jitter = 500
- E - jitter = 65535
- F - jitter = 65535
- G - jitter = 65535
- H - jitter = 65535
- I - jitter = null
- J - jitter = null
- K - jitter = null

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/14**
Test Purpose   :
Check that invalid **jitter** values are rejected by the command-line interface.
Procedure   :
Specify the following invalid values on AS1:
- A - Set l-QC11.jitter = 65736
- B - Set l-QC11.jitter = 99999999999999999
- C - Set l-QC11.jitter = -1
- D - Set l-QC11.jitter = -65736
- E - Set l-QC11.jitter = string
- F - Set l-QC11.jitter = 1string

Expected result :
All the above values must be rejected by the command-line interface.

Execution date : 22/09/04
Result   : All the above values are rejected by the command-line interface.
Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/QCMP/15**

Test Purpose :

Check that the receiving ASBR is able to compute multiple QoS parameters contained in an announcement.

Procedure :

Establish a pSLS between AS1 and AS2 for exchanging MC1 traffic.

Set the l-QC11 parameter values as follow:
   Set l-QC11.reserved-rate = 500.
   Set l-QC11.available-rate = 200.
   Set l-QC11.loss-rate = 1000.
   Set l-QC11.min-owd = 10.
   Set l-QC11.max-owd = 25.
   Set l-QC11.average-owd = 15.
   Set l-QC11.jitter = 5.

Set the l-QC21 parameter values as follow:
   Set l-QC21.reserved-rate = 300.
   Set l-QC21.available-rate = 250.
   Set l-QC21.loss-rate = 2500.
   Set l-QC21.min-owd = 30.
   Set l-QC21.max-owd = 60.
   Set l-QC21.average-owd = 55.
   Set l-QC21.jitter = 15.

Configure q-BGP so that AS2 announces network 194.52.168.0/21. Note on AS1 the value of the computed QoS parameters for this network.

Expected result :
   reserved-rate = 300.
   available-rate = 200.
   loss-rate = 3475.
   min-owd = 40.
   max-owd = 85.
   average-owd = 70.
   jitter = 20.

Execution date : 22/09/04

Result : Obtained results are as follows:
   reserved-rate = 300.
   available-rate = 200.
   loss-rate = 3475.
   min-owd = 40.
   max-owd = 85.
   average-owd = 70.
   jitter = 20.

```
MESCAL11# sh ip bgp local-qos-class 11
BGP table version is 0, local router ID is 11.11.11.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 11 (loose solution options) :
  Network              QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 194.52.168.0/21        63 1.1.1.6                     0    300            200      3475      40      85      70     20    2 i

Total number of prefixes in the local-qos-class 11 : 1
```

Failure level : None

Remarks : None

Test Reference : **TB_P2_FUNCT/QCMP/16**
Test Purpose   :
          Check that the receiving ASBR is able to compute multiple QoS parameters for a
          same prefix announced within different meta-QoS-planes.
Procedure   :
             Establish a pSLS between AS1 and AS2 for exchanging MC1, MC2 and MC3
               traffic.
             Configure l-QC12 and l-QC13 with the same QoS parameter values as l-QC11.
             Configure l-QC22 and l-QC23 with the same QoS parameter values as l-QC21.
             Configure q-BGP so that AS2 announces network 194.52.168.0/21 on meta-QoS-
               planes MC1, MC2 and MC3.
             Note on AS1 the value of the computed QoS parameters for this network and per
               meta-QoS-plane.
Expected result :
          Announcements received for this prefix within the 3 meta-QoS-class planes must have
          the same values as expected in **TB_P2_FUNCT/QCMP/15.**

Execution date : 22/09/04
Result   : Announcements received for this prefix within the 3 meta-QoS-class planes have the
          same values as expected in **TB_P2_FUNCT/QCMP/15.**
Failure level : None
Remarks   : None

10.2.4 TB_P2_FUNCT/RSEL

Sub-group preamble

Unless specified, tests hereafter described involve AS1, AS2, AS3 and AS4. Peering need to be set-up
between: AS1 & AS2, AS1 & AS3, AS3 & AS4, AS2 & AS4 as described in the testbed configuration
section. Only Mescal-42 ASBR from AS4 is involved in this series of tests.

pSLSs established between ASs concern MC1 and Best-effort only.

AS1 announces only the network prefix 193.251.128.0/19 within MC1. Others ASs propagate the
route but do not announce any of their own networks.

QoS guarantees of l-QC implementing MC1 in each AS are defined as follow:

Attributes	Priority	l-QC11	l-QC21	l-QC31	l-QC41
Reserved-rate	1	600	800	400	2000
Available-rate	2	500	400	600	2000
Loss-rate	3	1000	500	1500	200
Min-owd	4	10	15	25	5
Max-owd	5	50	25	10	15
Average-owd	6	30	20	15	10
Jitter	7	20	4	5	5

Table 37: Local QoS Class Characteristics

The priority level and the conformance (mandatory/optional) status of each QoS attribute is specified by each test.

The precision is set to 0%, for all attributes of all l-QCs, unless it is explicitly specified.

Group 2 QoS Service Capability is also configured unless explicit related configuration is recommended by a given test.

Test Reference : **TB_P2_FUNCT/RSEL/1**
Test Purpose :
> Check that several ASs involved in the loose service option are able to exchange route updates containing correctly computed QoS information.

Procedure :
> Start as defined by this sub-group preamble.
> Conformance status is mandatory for all attributes.
>
> Check the number of route received by AS4 for the network prefix
> **193.251.128.0/19**.
> Check that a route has been selected.
> Check that QoS parameters have the expected values.

Expected result :
> **Route431 via AS4,AS3,AS1**:
> reserved-rate = 400.
> available-rate = 500.
> loss-rate = 2680.
> min-owd = 40.
> max-owd = 75.
> average-owd = 55.
> jitter = 30.
>
> **Route421 via AS4,AS2,AS1**:
> reserved-rate = 600.
> available-rate = 400.
> loss-rate = 1692.
> min-owd = 30.
> max-owd = 90.
> average-owd = 60.
> jitter = 29.

AS4 must select **route421**

Execution date : 22/09/04
Result   : Obtained results are as follows:

<u>Route431 via AS4,AS3,AS1</u>:
reserved-rate = 400.
available-rate = 500.
loss-rate = 2680.
min-owd = 40.
max-owd = 75.
average-owd = 55.
jitter = 30.

<u>Route421 via AS4,AS2,AS1</u>:
reserved-rate = 600.
available-rate = 400.
loss-rate = 1692.
min-owd = 30.
max-owd = 90.
average-owd = 60.
jitter = 29.

Route421 is selected.

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop          Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 193.251.128.0/19    34 2.2.2.1                          0        600           400      1692      30      90      60     29   2 1 i
*                      34 3.3.3.5                          0        400           500      2680      40      75      55     30   3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/2**
Test Purpose   :
Check, in simple Scenarios, that the route selection process takes into account the priority level of each QoS attribute.

Procedure   :
As defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Using the table described in the preamble as a reference for each sub-test, exchange the priority value of:
- Scenario A1 - Reserved-rate and the available-rate QoS parameter
- Scenario B1 - Reserved-rate and the loss-rate QoS parameter
- Scenario C1 - Reserved-rate and the min-owd QoS parameter
- Scenario D1 - Reserved-rate and the max-owd QoS parameter
- Scenario E1 - Reserved-rate and the average-owd QoS parameter
- Scenario F1 - Reserved-rate and the jitter QoS parameter

One performed, exchange the QoS attribute values of l-QC21 and l-QC31. Perform the 6 tests again (A2-F2)

Expected result :

- Scenario A1 - Route431 is selected
- Scenario B1 - Route421 is selected
- Scenario C1 - Route421 is selected
- Scenario D1 - Route431 is selected
- Scenario E1 - Route431 is selected
- Scenario F1 - Route421 is selected
- Scenario A2 - Route421 is selected
- Scenario B2 - Route431 is selected
- Scenario C2 - Route431 is selected
- Scenario D2 - Route421 is selected
- Scenario E2 - Route421 is selected
- Scenario F2 - Route431 is selected

Execution date : 22/09/04

Result   : Obtained results are as follows:

- Scenario A1 - Route431 is selected
- Scenario B1 - Route421 is selected
- Scenario C1 - Route421 is selected
- Scenario D1 - Route431 is selected
- Scenario E1 - Route431 is selected
- Scenario F1 - Route421 is selected
- Scenario A2 - Route421 is selected
- Scenario B2 - Route431 is selected
- Scenario C2 - Route431 is selected
- Scenario D2 - Route421 is selected
- Scenario E2 - Route421 is selected
- Scenario F2 - Route431 is selected

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/3**
Test Purpose   :
          Check that the route selection process takes into account the QoS attributes which
          have a lower priority when the previous attributes (with higher priority) are
          equivalent.
Procedure   :
          Start as defined by this sub-group preamble.
          Conformance status is mandatory for all attributes.

Give l-QC31 the same values as l-QC21. Then, perform the following sub-tests:
- Scenario A – Set l-QC31.available-rate=450
- Scenario B – Set l-QC31.available-rate=350
- Scenario C – Set l-QC31.available-rate=400 and set l-QC31.loss-rate=400
- Scenario D – Set l-QC31.available-rate=400 and set l-QC31.loss-rate=600
- Scenario E – Set l-QC31.loss-rate=500 and set l-QC31.min-owd=20
- Scenario F – Set l-QC31.loss-rate=500 and set l-QC31.min-owd=10
- Scenario G – Set l-QC31.min-owd=15 and set l-QC31.max-owd=30
- Scenario H – Set l-QC31.min-owd=15 and set l-QC31.max-owd=20
- Scenario I – Set l-QC31.max-owd=25 and set l-QC31.average-owd=25
- Scenario J – Set l-QC31.max-owd=25 and set l-QC31.average-owd=15
- Scenario K – Set l-QC31.average-owd=20 and set l-QC31.jitter=5
- Scenario L – Set l-QC31.average-owd=20 and set l-QC31.jitter=3

Expected result :

For each sub-test, check that AS4 received 2 routes with the same QoS attribute values except one of them. One of them must have selected.
- Scenario A – Available-rate is different - Route via AS3 must be selected
- Scenario B – Available-rate is different - Route via AS2 must be selected
- Scenario C – Loss-rate is different - Route via AS3 must be selected
- Scenario D – Loss-rate is different - Route via AS2 must be selected
- Scenario E – Min-owd is different - Route via AS2 must be selected
- Scenario F – Min-owd is different - Route via AS3 must be selected
- Scenario G – Max-owd is different - Route via AS2 must be selected
- Scenario H – Max-owd is different - Route via AS3 must be selected
- Scenario I – Average-owd is different - Route via AS2 must be selected
- Scenario J – Average-owd is different - Route via AS3 must be selected
- Scenario K – Jitter is different - Route via AS2 must be selected
- Scenario L – Jitter is different - Route via AS3 must be selected

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario A – Available-rate is different - Route via AS3 is selected
- Scenario B – Available-rate is different - Route via AS2 is selected
- Scenario C – Loss-rate is different - Route via AS3 is selected
- Scenario D – Loss-rate is different - Route via AS2 is selected
- Scenario E – Min-owd is different - Route via AS2 is selected
- Scenario F – Min-owd is different - Route via AS3 is selected
- Scenario G – Max-owd is different - Route via AS2 is selected
- Scenario H – Max-owd is different - Route via AS3 is selected
- Scenario I – Average-owd is different - Route via AS2 is selected
- Scenario J – Average-owd is different - Route via AS3 is selected
- Scenario K – Jitter is different - Route via AS2 is selected

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop          Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*  193.251.128.0/19   34 3.3.3.5                          0         600           400      1692      30      90      60      30    3 1 i
*>                     34 2.2.2.1                          0         600           400      1692      30      90      60      29    2 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

- Scenario L – Jitter is different - Route via AS3 is selected

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 193.251.128.0/19   34 3.3.3.5                      0    600    400      1692      30      90      60     28   3 1 i
*                      34 2.2.2.1                      0    600    400      1692      30      90      60     29   2 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/4**
Test Purpose   :
         Check that the precision command line parameter is correctly handled for the
         reserved-rate QoS attribute.
Procedure   :
         Start as defined by this sub-group preamble.
         Conformance status is mandatory for all attributes.

   ▪ Scenario 1: Set the precision for l-QC41.reserved-rate=50%. The related QoS
     attribute of the 2 routes overlap.
   ▪ Scenario 2: Set the precision for l-QC41.reserved-rate=10%. The related QoS
     attribute of the 2 routes DO NOT overlap.

Expected result :
   ▪ Scenario 1: Route via AS3 must be selected (the decision is enforced by the
     available-rate)
   ▪ Scenario 2: Route via AS2 must be selected (the decision is enforced by the
     reserved-rate)

Execution date : 22/09/04
Result   : Obtained results are as follows:
   ▪ Scenario 1: Route via AS3 is selected

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 193.251.128.0/19   34 3.3.3.5                      0    400    500      2680      40      75      55     30   3 1 i
*                      34 2.2.2.1                      0    600    400      1692      30      90      60     29   2 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

   ▪ Scenario 2: Route via AS2 is selected

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*  193.251.128.0/19   34 3.3.3.5                      0    400    500      2680      40      75      55     30   3 1 i
*>                     34 2.2.2.1                      0    600    400      1692      30      90      60     29   2 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/5**

Test Purpose   : Check that the precision command line parameter is correctly handled for the available-rate QoS attribute.

Procedure   : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 1: Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 2: Set the precision for l-QC41.available-rate=10%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- Scenario 1: Route via AS2 must be selected (the decision is enforced by the loss-rate)

- Scenario 2: Route via AS3 must be selected (the decision is enforced by the available-rate)

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario 1: Route via AS2 is selected

- Scenario 2: Route via AS3 is selected

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/6**

Test Purpose   : Check that the precision command line parameter is correctly handled for the loss-rate QoS attribute.

Procedure   : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 1: Set the precision for l-QC41.loss-rate=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 2: Set the precision for l-QC41.loss-rate=10%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- Scenario 1: Route via AS2 must be selected (the decision is enforced by the min-owd)

- Scenario 2: Route via AS2 must be selected (the decision is enforced by the loss-rate)

Execution date : 22/09/04
Result : Obtained results are as follows:

- Scenario 1: Route via AS2 is selected

- Scenario 2: Route via AS2 is selected

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/RSEL/7**

Test Purpose : Check that the precision command line parameter is correctly handled for the min-owd QoS attribute.

Procedure : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.loss-rate=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 1: Set the precision for l-QC41.min-owd=20%. The related QoS attribute of the 2 routes overlap.

- Scenario 2: Set the precision for l-QC41.min-owd=5%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- Scenario 1: Route via AS3 must be selected (the decision is enforced by the max-owd)

- Scenario 2: Route via AS2 must be selected (the decision is enforced by the min-owd)

Execution date : 22/09/04
Result : Obtained results are as follows:
- Scenario 1: Route via AS3 is selected

- Scenario 2: Route via AS2 is selected

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/RSEL/8**

Test Purpose : Check that the precision command line parameter is correctly handled for the max-owd QoS attribute.

Procedure   : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.loss-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.min-owd=20%. The related QoS attribute of the 2 routes overlap.

- Scenario 1: Set the precision for l-QC41.max-owd=50%. The related QoS attribute of the 2 routes overlap.
- Scenario 2: Set the precision for l-QC41.max-owd=5%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- Scenario 1: Route via AS3 must be selected (the decision is enforced by the average-owd)
- Scenario 2: Route via AS3 must be selected (the decision is enforced by the max-owd)

Execution date : 22/09/04
Result   : Obtained results are as follows:
- Scenario 1: Route via AS3 is selected
- Scenario 2: Route via AS3 is selected

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/9**

Test Purpose   : Check that the precision command line parameter is correctly handled for the average-owd QoS attribute.

Procedure   : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.loss-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.min-owd=20%. The related QoS attribute of the 2 routes

overlap.

Set the precision for l-QC41.max-owd=50%. The related QoS attribute of the 2 routes overlap.

- ▪ Scenario 1: Set the precision for l-QC41.average-owd=50%. The related QoS attribute of the 2 routes overlap.
- ▪ Scenario 2: Set the precision for l-QC41.average-owd=2%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- ▪ Scenario 1: Route via AS2 must be selected (the decision is enforced by the jitter)
- ▪ Scenario 2: Route via AS3 must be selected (the decision is enforced by the average-owd)

Execution date : 22/09/04
Result   : Obtained results are as follows:

- ▪ Scenario 1: Route via AS2 is selected

```
MESCAL42# sh local-qos-class 41
local qos-class 41
  qos-class-id: 34
   available-rate 2000 priority 2 mandatory precision 50
   average-owd 10 priority 6 mandatory precision 50
   jitter 5 priority 7 mandatory
   loss-rate 200 priority 3 mandatory precision 50
   max-owd 15 priority 5 mandatory precision 50
   min-owd 5 priority 4 mandatory precision 20
   reserved-rate 2000 priority 1 mandatory precision 50
  solution-option: loose

MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop      Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 193.251.128.0/19   34 2.2.2.1             0   600        400          1692       30      90      60     29    2 1 i
*                     34 3.3.3.5             0   400        500          2680       40      75      55     30    3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

- ▪ Scenario 2: Route via AS3 is selected

```
MESCAL42# sh local-qos-class 41
local qos-class 41
  qos-class-id: 34
   available-rate 2000 priority 2 mandatory precision 50
   average-owd 10 priority 6 mandatory precision 2
   jitter 5 priority 7 mandatory
   loss-rate 200 priority 3 mandatory precision 50
   max-owd 15 priority 5 mandatory precision 50
   min-owd 5 priority 4 mandatory precision 20
   reserved-rate 2000 priority 1 mandatory precision 50
  solution-option: loose

MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network          QC-id Next Hop      Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*  193.251.128.0/19   34 2.2.2.1             0   600        400          1692       30      90      60     29    2 1 i
*>                    34 3.3.3.5             0   400        500          2680       40      75      55     30    3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/10**

Test Purpose : Check that the precision command line parameter is correctly handled for the jitter QoS attribute.

Procedure : Start as defined by this sub-group preamble.
Conformance status is mandatory for all attributes.

Set the precision for l-QC41.reserved-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.available-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.loss-rate=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.min-owd=20%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.max-owd=50%. The related QoS attribute of the 2 routes overlap.

Set the precision for l-QC41.average-owd=50%. The related QoS attribute of the 2 routes overlap.

- Scenario 1: Set the precision for l-QC41.jitter=10%. The related QoS attribute of the 2 routes overlap.

- Scenario 2: Set the precision for l-QC41.jitter=1%. The related QoS attribute of the 2 routes DO NOT overlap.

Expected result : The following results must be obtained:

- Scenario 1: The same Route in best effort and in l-QC41 plan must be selected (depends on BGP route selection process)

- Scenario 2: Route via AS2 must be selected (the decision is enforced by the jitter)

Execution date : 22/09/04

Result : Obtained results are as follows:
- Scenario 1: Route via AS2 is selected in best effort and in l-QC41 plan.

- Scenario 2: Route via AS2 is selected

Failure level : None

Remarks : The default bestpath selection configured compare router-id for identical q-eBGP paths. The router-id of MESCAL21 is set to 21.21.21.1 and the router-id of MESCAL31 is set to 31.31.31.1. So route via AS2 is selected in scenario 1.

Test Reference : **TB_P2_FUNCT/RSEL/11**

Test Purpose : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of reserved rate to mandatory:

- Scenario 1: Configure AS1, AS2 and AS3 to send reserved-rate as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send reserved-rate as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send reserved-rate as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send reserved-rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Selected route is R421.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Selected route is R421.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/12**
Test Purpose   : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of available rate to mandatory:

- Scenario 1: Configure AS1, AS2 and AS3 to send available-rate as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send available -rate as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send available -rate as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send available -rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- ▪ Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- ▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- ▪ Scenario 2: Only one Route is received from AS3. This route is selected.

- ▪ Scenario 3: Only one Route is received from AS2. This route is selected.

- ▪ Scenario 4: No route has been received for the specified prefix.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/13**
Test Purpose   : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of loss rate to mandatory:

- ▪ Scenario 1: Configure AS1, AS2 and AS3 to send loss-rate as described in the introduction of this test group.

- ▪ Scenario 2: Configure only AS1 and AS3 to send loss-rate as described in the introduction of this test group.

- ▪ Scenario 3: Configure only AS1 and AS2 to send loss-rate as described in the introduction of this test group.

- ▪ Scenario 4: Configure only AS2 and AS3 to send loss-rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

- ▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- ▪ Scenario 2: Only one Route is received from AS3. This route is selected.

- ▪ Scenario 3: Only one Route is received from AS2. This route is selected.

- ▪ Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- ▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- ▪ Scenario 2: Only one Route is received from AS3. This route is selected.

- ▪ Scenario 3: Only one Route is received from AS2. This route is selected.

- ▪ Scenario 4: No route has been received for the specified prefix.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/14**

Test Purpose   : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of min-owd to mandatory:

- Scenario 1: Configure AS1, AS2 and AS3 to send min-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send min-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send min-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send min-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/15**
Test Purpose   : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of max-owd to mandatory:

- Scenario 1: Configure AS1, AS2 and AS3 to send max-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send max-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send max-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send max-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/16**
Test Purpose   : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of average-owd to mandatory:

- Scenario 1: Configure AS1, AS2 and AS3 to send average-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send average-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send average-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send average-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

- Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

- Scenario 2: Only one Route is received from AS3. This route is selected.

- Scenario 3: Only one Route is received from AS2. This route is selected.

    ▪   Scenario 4: No route has been received for the specified prefix.

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/RSEL/17**
Test Purpose : Validate the behaviour of q-BGP when mandatory parameters aren't received.

Procedure :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of jitter to mandatory:

▪ Scenario 1: Configure AS1, AS2 and AS3 to send jitter as described in the introduction of this test group.

▪ Scenario 2: Configure only AS1 and AS3 to send jitter as described in the introduction of this test group.

▪ Scenario 3: Configure only AS1 and AS2 to send jitter as described in the introduction of this test group.

▪ Scenario 4: Configure only AS2 and AS3 to send jitter as described in the introduction of this test group.

Expected result : The following results must be obtained:

▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

▪ Scenario 2: Only one Route is received from AS3. This route is selected.

▪ Scenario 3: Only one Route is received from AS2. This route is selected.

▪ Scenario 4: No route has been received for the specified prefix.

Execution date : 22/09/04
Result : Obtained results are as follows:

▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. Route Route421 is selected.

▪ Scenario 2: Only one Route is received from AS3. This route is selected.

▪ Scenario 3: Only one Route is received from AS2. This route is selected.

▪ Scenario 4: No route has been received for the specified prefix.

Failure level : None
Remarks : None

Test Reference : **TB_P2_FUNCT/RSEL/18**
Test Purpose : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of reserved rate to optional:

▪ Scenario 1: Configure AS1, AS2 and AS3 to send reserved-rate as described in the introduction of this test group.

▪ Scenario 2: Configure only AS1 and AS3 to send reserved-rate as described in the introduction of this test group.

> ▪ Scenario 3: Configure only AS1 and AS2 to send reserved-rate as described in the introduction of this test group.

> ▪ Scenario 4: Configure only AS2 and AS3 to send reserved-rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

> ▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

> ▪ Scenario 2: Two routes are received by AS4, from AS3 and AS2. R431 is selected.

> ▪ Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

> ▪ Scenario 4: Two routes are received by AS4, from AS3 and AS2. R431 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

> ▪ Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

> ▪ Scenario 2: Two routes are received by AS4, from AS3 and AS2. R431 is selected.

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network            QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*  193.251.128.0/19     34 2.2.2.1               0      -     400          1692        30      90      60     29   2 1 i
*>                      34 3.3.3.5               0    400     500          2680        40      75      55     30   3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

> ▪ Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network            QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*> 193.251.128.0/19     34 2.2.2.1               0    600     400          1692        30      90      60     29   2 1 i
*                       34 3.3.3.5               0      -     500          2680        40      75      55     30   3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

> ▪ Scenario 4: Two routes are received by AS4, from AS3 and AS2. R431 is selected.

```
MESCAL42# sh ip bgp local-qos-class 41
BGP table version is 0, local router ID is 42.42.42.1
Status codes: s suppressed, d damped, h history, p stale, * valid, > best, i - internal
Origin codes: i - IGP, e - EGP, ? - incomplete

local-qos-class 41 (loose solution options) :
   Network            QC-id Next Hop        Metric LocPrf Weight reserved-rate available-rate loss-rate min-owd max-owd avg-owd jitter Path
*  193.251.128.0/19     34 2.2.2.1               0      -     400          1692        30      90      60     29   2 1 i
*>                      34 3.3.3.5               0      -     500          2680        40      75      55     30   3 1 i

Total number of prefixes in the local-qos-class 41 : 1
```

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/19**

Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of available rate to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send available-rate as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send available -rate as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send available -rate as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send available -rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/20**
Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of loss rate to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send loss-rate as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send loss-rate as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send loss-rate as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send loss-rate as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/21**
Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of min-owd to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send min-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send min-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send min-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send min-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/22**
Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of max-owd to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send max-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send max-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send max-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send max-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/23**
Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of average-owd to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send average-owd as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send average-owd as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send average-owd as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send average-owd as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/RSEL/24**
Test Purpose   : Validate the behaviour of q-BGP when optional parameters aren't received.

Procedure   :
q-BGP configuration will be update as specified in the description of each scenario:
Set the conformance status of jitter to optional:

- Scenario 1: Configure AS1, AS2 and AS3 to send jitter as described in the introduction of this test group.

- Scenario 2: Configure only AS1 and AS3 to send jitter as described in the introduction of this test group.

- Scenario 3: Configure only AS1 and AS2 to send jitter as described in the introduction of this test group.

- Scenario 4: Configure only AS2 and AS3 to send jitter as described in the introduction of this test group.

Expected result : The following results must be obtained:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 2: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 3: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

- Scenario 4: Two routes are received by AS4, from AS3 and AS2. R421 is selected.

Failure level : None
Remarks   : None

10.2.5 TB_P2_FUNCT/INT

Test Reference : **TB_P2_FUNCT/INT/1**
Test Purpose   : Validate the behaviour of a BGP speaker when receiving unsupported capability.

Procedure   :
q-BGPD process is activated in MESCAL11. BGPD is activated in MESCAL21.

- Scenario 1: Configure MESCAL11 as a neighbor of MESCAL21. MESCAL21 is to be configured in MESCAL11 as a neighbor. Configure MESCAL11 to support QoS Service Capability Group 1. Check the messages exchanged between MESCAL21 and MESCAL31 with a traffic analyzer.

- Scenario 2: Configure MESCAL11 as a neighbor of MESCAL21. MESCAL21 is to be configured in MESCAL11 as a neighbor. Configure MESCAL11 to support QoS Service Capability Group 2. Check the messages exchanged between MESCAL21 and MESCAL31 with a traffic analyzer.

- Scenario 3: Configure MESCAL11 as a neighbor of MESCAL21. MESCAL21 is to be configured in MESCAL11 as a neighbor. Configure MESCAL11 to support QoS Service Capability Group 1 and Group 2. Check the messages exchanged between MESCAL21 and MESCAL31 with a traffic analyzer.

Expected result : The following results must be obtained:

- Scenario 1: MESCAL21 has to send a notification message with the Error Sub Code set to Unsupported Capability. MESCAL11 should re-attempt to open a BGP session with MESCAL21 but without sending to the peer the Capabilities Optional Parameter.

- Scenario 2: MESCAL21 has to send a notification message with the Error Sub Code set to Unsupported Capability. MESCAL11 should re-attempt to open a BGP session with MESCAL21 but without sending to the peer the Capabilities Optional Parameter.

- Scenario 3: MESCAL21 has to send a notification message with the Error Sub Code set to Unsupported Capability. MESCAL11 should re-attempt to open a BGP session with MESCAL21 but without sending to the peer the Capabilities Optional Parameter.

Execution date : 22/09/04
Result   : Obtained results are as follows:

- Scenario 1: The BGP session is established and MESCAL21 has not sent any notification message.

- Scenario 2: The BGP session is established and MESCAL21 has not sent any notification message.

- Scenario 3: The BGP session is established and MESCAL21 has not sent any notification message.

Failure level : None
Remarks   : ZeboS BGP process has been implemented so that unknown capabilities are by default ignored. In order to validate the test, MESCAL11 must be configured as a neighbor of MESCAL21 with the "strict capability match" command. This command permits to close the BGP connection if capability value does not completely match to remote peer. If this command is used and if an unknown capability is received, the behaviour of BGP depends on the code of the unknown capability. If the capability code is greater or equal to 128, the capability is a "for private use" capability and is only ignored. If the capability code is lower than 128, a notification message with the Error Sub Code set to Unsupported Capability is sent. In this case the results of the tests match the expected ones.

Test Reference : **TB_P2_FUNCT/INT/2**

Test Purpose   : Validate the behaviour of a q-BGP speaker when receiving notification set to unsupported capabilities from BGP speaker.

Procedure   :
q-BGPD process is activated in MESCAL11. BGPD is activated in MESCAL21.

Configure local-QoS-class in MESCAL11 as specified in the introduction of the previous test group. Also AS1 networks that are listed in testbed configuration are also to be announced by MESCAL11 in l-QC1 and best effort.

AS2 Networks that are listed in testbed configuration are also to be announced by MESCAL21.

Launch a traffic analyzer in eth1 of MESCAL11. Check the messages that are exchanges between MESCAL11 and MESCAL12.

Expected result : MESCAL11 must not send QoS_NLRI messages to MESCAL21.
MESCAL21 must send NLRI information to MESCAL11.
MESCAL11 must send NLRI information to MESCAL21.

Execution date : 22/09/04
Result   :
MESCAL11 does not send any QoS_NLRI messages to MESCAL21.
MESCAL21 sends NLRI information to MESCAL11.
MESCAL11 sends NLRI information to MESCAL21.
Failure level   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/INT/3**
Test Purpose   : Validate the q-BGP router installs routes received from BGP speaker in best effort plane.

Procedure   :
q-BGPD process is activated in MESCAL11. BGPD is activated in MESCAL21.

Configure local-QoS-class in MESCAL11 as specified in the introduction of the previous test group. Also AS1 networks that are listed in testbed configuration are also to be announced by MESCAL11 in l-QC1 and best effort.

AS2 Networks that are listed in testbed configuration are also to be announced by MESCAL21.

Log to MESCAL11 and execute this command line: "**sh ip bgp**". Check if MESCAL21 networks are listed.

Expected result : All MESCAL21's networks must be present in the MESCAL11 best effort RIB.

Execution date : 22/09/04
Result   : All MESCAL21's networks are present in the MESCAL11 best effort RIB.

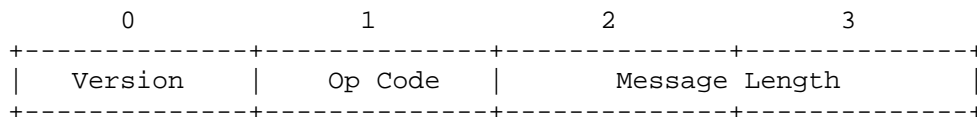*Failure level*   : None
Remarks   : None

Test Reference : **TB_P2_FUNCT/INT/4**
Test Purpose   : Validate the BGP router installs routes received from q-BGP speaker.

Procedure   :
q-BGPD process is activated in MESCAL11. BGPD is activated in MESCAL21.

Configure local-QoS-class in MESCAL11 as specified in the introduction of the previous test group. Also AS1 networks that are listed in testbed configuration are also to be announced by MESCAL11 in l-QC1 and best effort.

AS2 Networks that are listed in testbed configuration are also to be announced by MESCAL21.

Log to MESCAL21 and execute this command line: "**sh ip bgp**". Check if MESCAL11 networks are listed.

Expected result : All MESCAL11's networks must be present in the MESCAL21 BGP RIB.

Execution date : 22/09/04
Result   : All MESCAL11's networks are present in the MESCAL21 BGP RIB.
Failure level : None
Remarks   : None

10.3 Phase 3

The "null" value means no value.

10.3.1 TB_P3_FUNCT/CMES

10.3.1.1   Reminder

Each PCP message consists of the PCP header followed by a number of arguments depending on the nature of the operation.

```
          0               1               2               3
   +--------------+--------------+--------------+--------------+
   |   Version    |   Op Code    |      Message Length         |
   +--------------+--------------+--------------+--------------+
```

10.3.1.1.1 Open message

```
          0             1             2             3
   +-------------+-------------+-------------+-------------+
   |                                                      |
   |                       PCSID                          |
   |                                                      |
   |                                                      |
   +-------------+-------------+-------------+-------------+
```
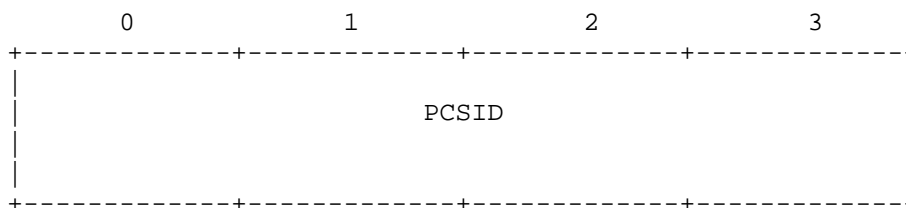
10.3.1.1.2 Accept message

```
          0             1             2             3
   +-------------+-------------+-------------+-------------+
   |      KA-Timer             |/////////////////////////|
   +-------------+-------------+-------------+-------------+
```
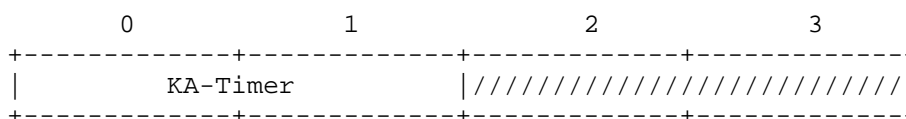
10.3.1.1.3 Close message

```
          0              1              2              3
   +--------------+--------------+--------------+--------------+
   |         Error-Code          | ///////////////////////////|
```

```
    +-------------+-------------+-------------+-------------+
```
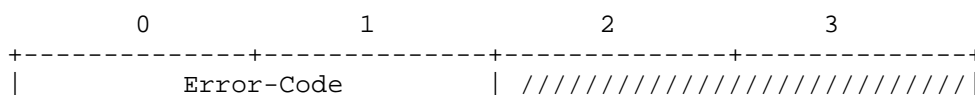
10.3.1.1.4 Path Error message

```
        +------------+------------+
2 bytes|            L1          |
        +------------+------------+-------//----+------------+
        |                PATH-COMPUTATION-ID                |
        |----------------------------------//---------------|
2 bytes|                REQ-REFERENCE-ID                   |
        |----------------------------------//---------------|
1 bytes|        REASON-CODE       |
        +------------+------------+
```

10.3.1.1.5 Cancel message

```
        +------------+------------+
2 bytes|            L1          |
        +------------+------------+-------//----+------------+
        |                PATH-COMPUTATION-ID                |
        |----------------------------------//---------------|
2 bytes|                REQ-REFERENCE-ID                   |
        |---------------------------------------------------|
```
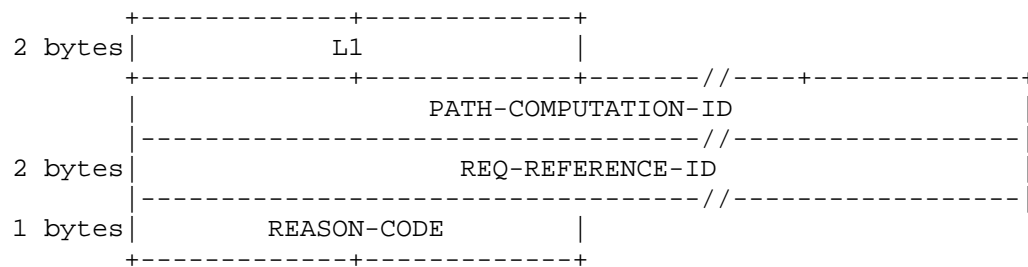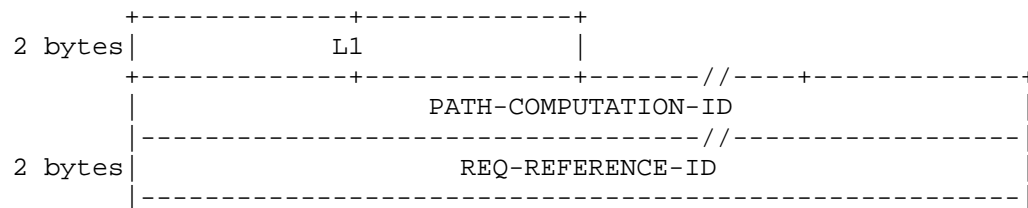
10.3.1.1.6 Acknowledge message

```
        +------------+------------+
2 bytes|            L1          |
        +------------+------------+-------//----+------------+
        |                PATH-COMPUTATION-ID                |
        |----------------------------------//---------------|
2 bytes|                REQ-REFERENCE-ID                   |
        |---------------------------------------------------|
```
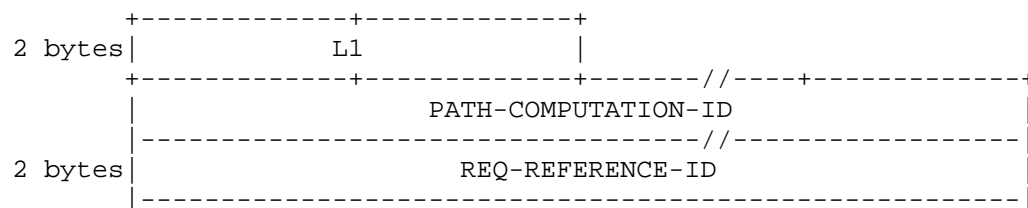
10.3.1.1.7 Request message

```
        +-------------+
1 byte  |     TTL     |
        +-------------+
1 byte  |     L0      |
        +-------------+------------+------------+------------+
2 bytes |                   AS-NUMBER                        |
        +------------+------------+------------+------------+
        //                                                 //
        +------------+------------+------------+------------+
2 bytes |                   AS-NUMBER                        |
        +------------+------------+------------+------------+
2 bytes |            L1           |
        +------------+------------+-------//----+------------+
        |                PATH-COMPUTATION-ID                |
        |-----------------------------------//--------------|
2 bytes |            L2           |
        +------------+------------+-------//----+------------+
        |                 PATH-REFERENCE-ID                 |
        +------------+------------+-------//----+------------+
2 bytes |               REQ-REFERENCE-ID                    |
        +------------+------------+------------+------------+
1 byte  |  ADD-TYPE  |
        +------------+------------+-------//----+------------+
        |                HEAD-END-ADDRESS                   |
        +------------+------------+-------//----+------------+
        |                TAIL-END-ADDRESS                   |
        +------------+------------+-------//----+------------+
1 byte  | NUMBER-OF-QC-CONSTRAINT  +
        +------------+------------+
2 bytes |  QC-CONSTRAINT-LENGTH    +
        +------------+------------+
1 byte  |  QOS-CLASS-IDENTIFIER    +
        +------------+------------+------------+------------+
1 byte  |  QOS-INFO-CODE          +  QOS-INFO-SUB-CODE     |
        +------------+------------+------------+------------+
2 bytes |               QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
        |  QOS-INFO-CODE          +  QOS-INFO-SUB-CODE     |
        +------------+------------+------------+------------+
        |               QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
        |  QOS-INFO-CODE          +  QOS-INFO-SUB-CODE     |
        +------------+------------+------------+------------+
        |               QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
```

10.3.1.1.8 Response message

```
        +-------------+------------+
2 bytes |            L1           |
        +------------+------------+-------//----+------------+
        |                PATH-COMPUTATION-ID                |
        |-----------------------------------//--------------|
2 bytes |               REQ-REFERENCE-ID                    |
        |-----------------------------------//--------------|
1 bytes | PATH-LENGTH |
        +-------------+
1 byte  |  ADD-TYPE   |
        +------------+------------+-------//----+------------+
        |                    NEXT-HOP                       |
```
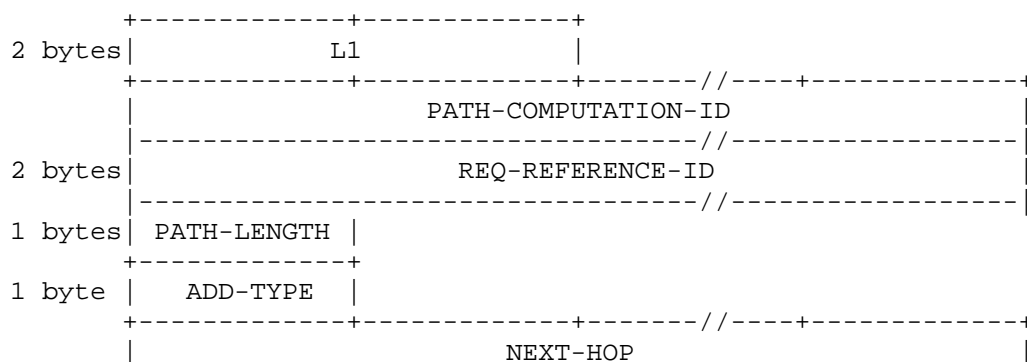
```
        +------------+------------+-------//----+------------+
        //                                                  //
        +------------+------------+-------//----+------------+
        |                       NEXT-HOP                     |
        +------------+------------+-------//----+------------+
8 bytes|       VALIDITY-DATE         +
        +------------+------------+
1 byte |   NUMBER-OF-QC-CONSTRAINT   +
        +------------+------------+
2 bytes|   QC-CONSTRAINT-LENGTH      +
        +------------+------------+
1 byte |   QOS-CLASS-IDENTIFIER      +
        +------------+------------+------------+------------+
1 byte |   QOS-INFO-CODE        +   QOS-INFO-SUB-CODE       |
        +------------+------------+------------+------------+
2 bytes|                QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
        |   QOS-INFO-CODE        +   QOS-INFO-SUB-CODE       |
        +------------+------------+------------+------------+
        |                QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
        |   QOS-INFO-CODE        +   QOS-INFO-SUB-CODE       |
        +------------+------------+------------+------------+
        |                QOS-INFO-VALUE                      |
        +------------+------------+------------+------------+
```

10.3.1.2   pSLS agreement

Configure the following pSLS between AS1 and AS2 (AS2 offers this pSLS to AS1):

- List of Meta-QoS-classes and bandwidth:

    - MQ1: TOS value 0x68 bandwidth 1Mbit

    - MQ2: TOS value 0x71 bandwidth 1Mbit

    - MQ3: TOS value 0x78 bandwidth 1Mbit

    - MQ4: TOS value 0x00 bandwidth 2Mbit

- Total bandwidth: 5Mbit

- MESCAL11'PCSID: 11.11.11.11

- MESCAL21'PCSID: 21.21.21.21

Test Reference : **TB_P3_FUNCT/CMES/1**

Test Purpose   : Check the format of OPEN, CLOSE and ACCEPT messages.

Procedure   :
                  Launch a traffic analyzer that captures MESCAL11' eth1 traffic.

                  Establish a PCP session between MESCAL11'PCS and MESCAL21'PCS.

                  When session is accepted by MESCAL21'PCS, close the session.

                  Verify that OPEN, CLOSE and ACCEPT messages are conform to [D1.2]
                  specifications. For more details see introduction of this test group.

Expected result :

MESCAL21'PCS should answer with CLOSE or ACCEPT message to OPEN request received from MESCAL11'PCS.

OPEN, CLOSE and ACCEPT messages should have a format as indicated in introduction of this test group.

Op Code contained in common header is:

- 1: OPEN
- 2: ACCEPT
- 3: CLOSE

Execution date : 21/04/05

Result   : The format of the exchanged messages is aligning with the specifications. Opcode of recived messaged are as follows:

- 1: OPEN
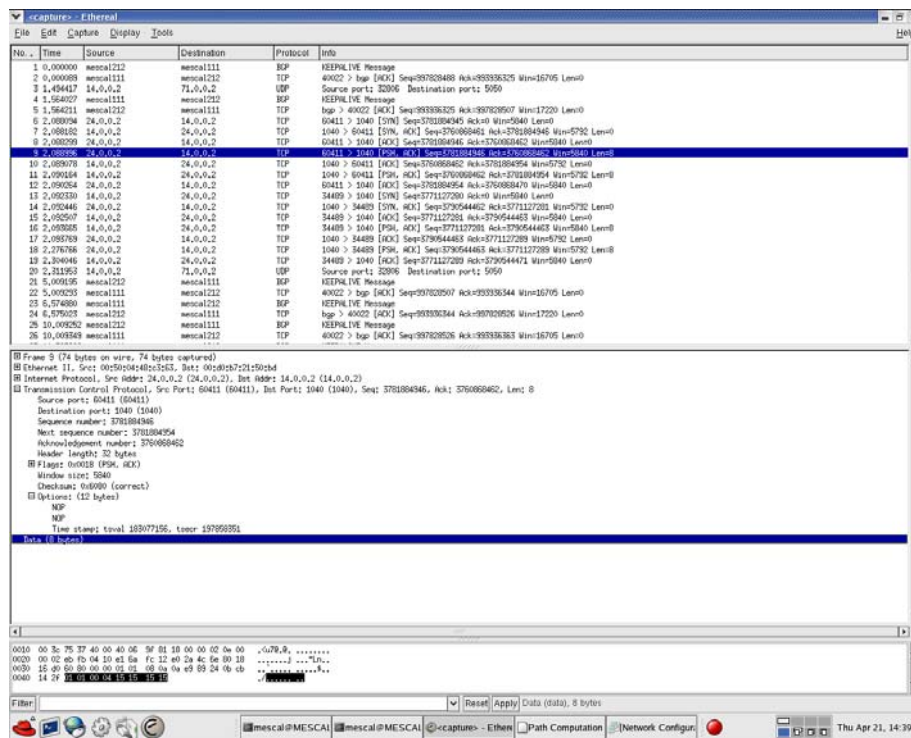
- 2: ACCEPT
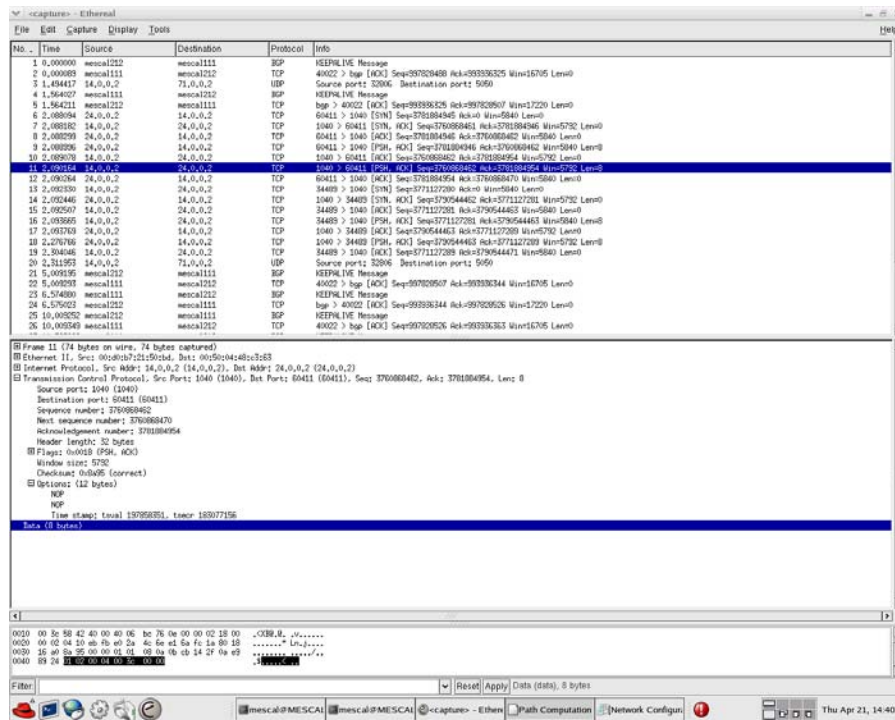
- 3: CLOSE
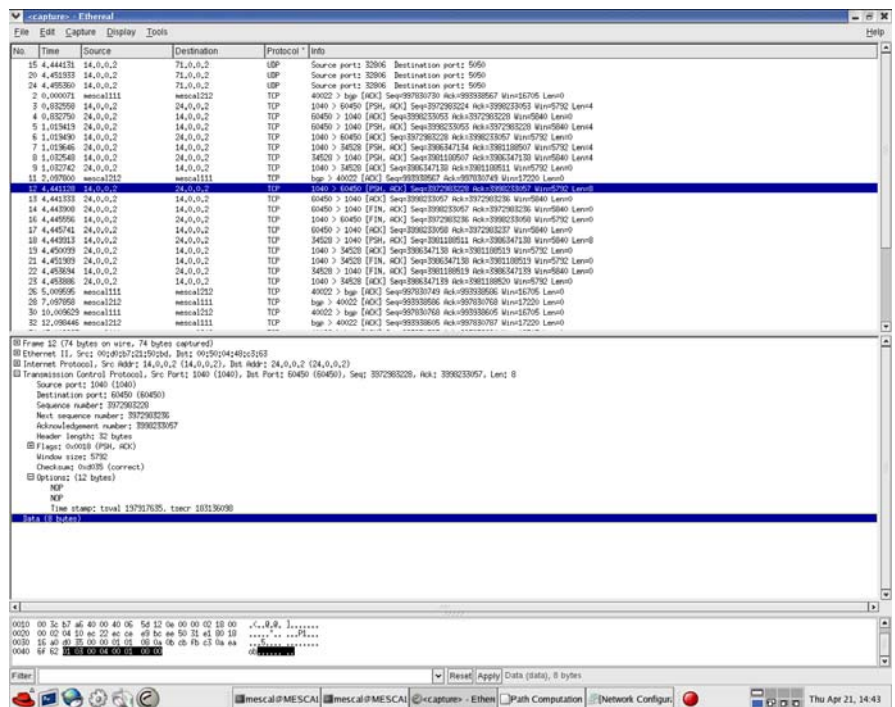
Failure level : None.
Remarks : None

Test Reference : **TB_P3_FUNCT/CMES/2**

Test Purpose : Check the format of REQUEST, RESPONSE PATH-ERROR and ACKNOWLEDGE messages.

Procedure :

Launch a traffic analyzer that captures MESCAL11' eth1 traffic.

Establish a PCP session between MESCAL11'PCS and MESCAL21'PCS.

- Scenario 1: When PCP session is accepted by MESCAL21'PCS, configure MESCAL11'PCS to send a request for an LSP terminating in 2.2.2.1 in MC1 and a bandwidth of 1Mbit. No QoS parameters to be included in the request.

- Scenario 2: Configure MESCAL11'PCS to send a request for an LSP terminating in 2.2.2.1 in MC2 and a bandwidth of 2Mbit. No QoS parameters to be included in the request.

  Verify that REQUEST, RESPONSE, PATH-ERROR and ACKNOWLEDGE messages are conform to [D1.2] specifications. For more details see introduction of this test group.

Expected result :

- Scenario 1:
  - MESCAL21'PCS should answer with CLOSE or ACCEPT message to OPEN request received from MESCAL11'PCS.
  - MESCAL21'PCS should send a RESPONSE-PATH to MESCAL11
  - REQUEST, RESPONSE and ACKNOWLEDGE messages should have a format as indicated in introduction of this test group. Op Code contained in common header is:
    - 4: REQUEST
    - 5: RESPONSE
    - 8: ACKNOWLEDGE
- Scenario 2:
  - MESCAL12'PCS should send a PATH-ERROR to MESCAL11.

Execution date : 21/04/05
Result   : Obtained results are as follows:
- Scenario 1:
  - MESCAL21'PCS sent an ACCEPT message to OPEN request received from MESCAL11'PCS.
  - MESCAL21'PCS sent a RESPONSE-PATH to MESCAL11
  - REQUEST, RESPONSE and ACKNOWLEDGE messages have a format as indicated in introduction of this test group. Op Code contained in common header is:
    - 4: REQUEST

- 5: RESPONSE

- 8: ACKNOWLEDGE

- Scenario 2:
  - MESCAL21'PCS sent an PATH-ERROR to MESCAL11 as shown in the figure below:
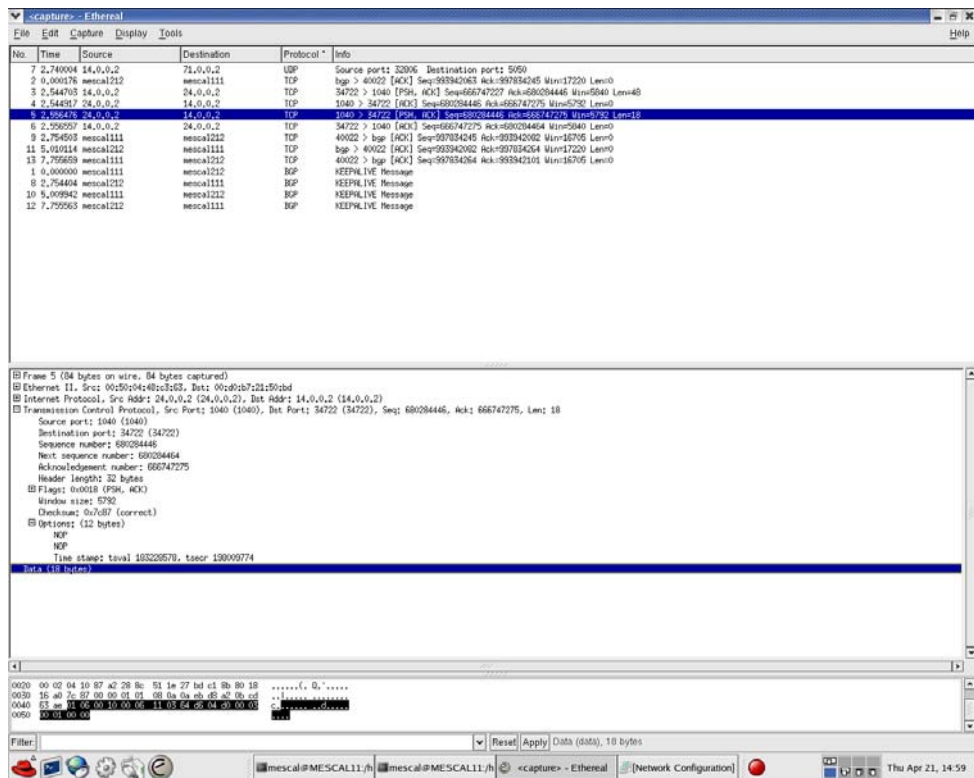
Failure level   : None.
Remarks   : None.

Test Reference : **TB_P3_FUNCT/CMES/3**

Test Purpose   : Validate the REQ-REFERNCE-ID and PATH-COMPUTATION-ID

Procedure   :

        Same configure as for scenario 1 of **TB_P3_FUNCT/CMES/2**

Expected result :

        REQ-REFERNCE-ID and PATH-COMPUTATION-ID that have been inserted in CANCEL, ACKNOWLEDGE and RESPONSE-PATH messages received from MESCAL21'PCS are identical to what have been inserted in REQUEST-PATH sent by MESCAL11'PCS.

Execution date : 21/04/05

Result   : The REQ-REFERNCE-ID and PATH-COMPUTATION-ID that have been inserted in CANCEL, ACKNOWLEDGE and RESPONSE-PATH messages received from MESCAL21'PCS are identical to what have been inserted in REQUEST-PATH sent by MESCAL11'PCS.

Failure level   : None.

Remarks   : None.

Test Reference : **TB_P3_FUNCT/CMES/4**

Test Purpose   : Validate QoS information contained in REQUEST-PATH message

Procedure   :

        Configure MESCAL11' PCS to send a REQUEST message to MESCAL21' PCS.

        Execute tests **TB_P2_FUNCT/CMES/5** until **TB_P2_FUNCT/CMES/10**

Expected result : Same results as **TB_P2_FUNCT/CMES/5** until **TB_P2_FUNCT/CMES/10**

Execution date : 21/04/05

Result   : Obtained   results   are   those   of   **TB_P2_FUNCT/CMES/5**   until **TB_P2_FUNCT/CMES/10.**

Failure level   : None.

Remarks   : None.

Test Reference : **TB_P3_FUNCT/CMES/5**

Test Purpose   : Validate QoS information contained in RESPONSE-PATH message

Procedure   :

        Configure MESCAL11' PCS to send a REQUEST message to MESCAL21' PCS.

        Execute tests **TB_P2_FUNCT/CMES/5** until **TB_P2_FUNCT/CMES/10**

Expected result : Same results as **TB_P2_FUNCT/CMES/5** until **TB_P2_FUNCT/CMES/10**

Execution date : 21/04/05

Result   : Obtained   results   are   those   of   **_P2_FUNCT/CMES/5**   until **TB_P2_FUNCT/CMES/10**

Failure level   : None.

Remarks   : None.

Test Reference : **TB_P3_FUNCT/CMES/6**

Test Purpose   : Check the format of PATH-ERROR and messages.

Procedure   :
                   Establish a PCP communication between MESCAL11'PSCA and MESCAL21'PCS.

                   Scenario 1: Force PATH-COMPUTATION-ID in REQUEST-PATH message to a
                   value that already exists between the two peers.

                   Scenario 2: Force REF-COMPUTATION-ID in REQUEST-PATH message to a value
                   already that has been handled.

                   Launch a traffic analyzer that captures MESCAL11' eth1 traffic.

Expected result : in both scenarios, PATH-ERROR message should be sent by MESCAL21'PCS to
                   MESCAL11'PCS.

Execution date : 21/04/05
Result   : A PATH-ERROR message has been sent by MESCAL21 to MESCAL11. The figure
                   below is a capture of the received message (Note that the reason code value is set to
                   4):
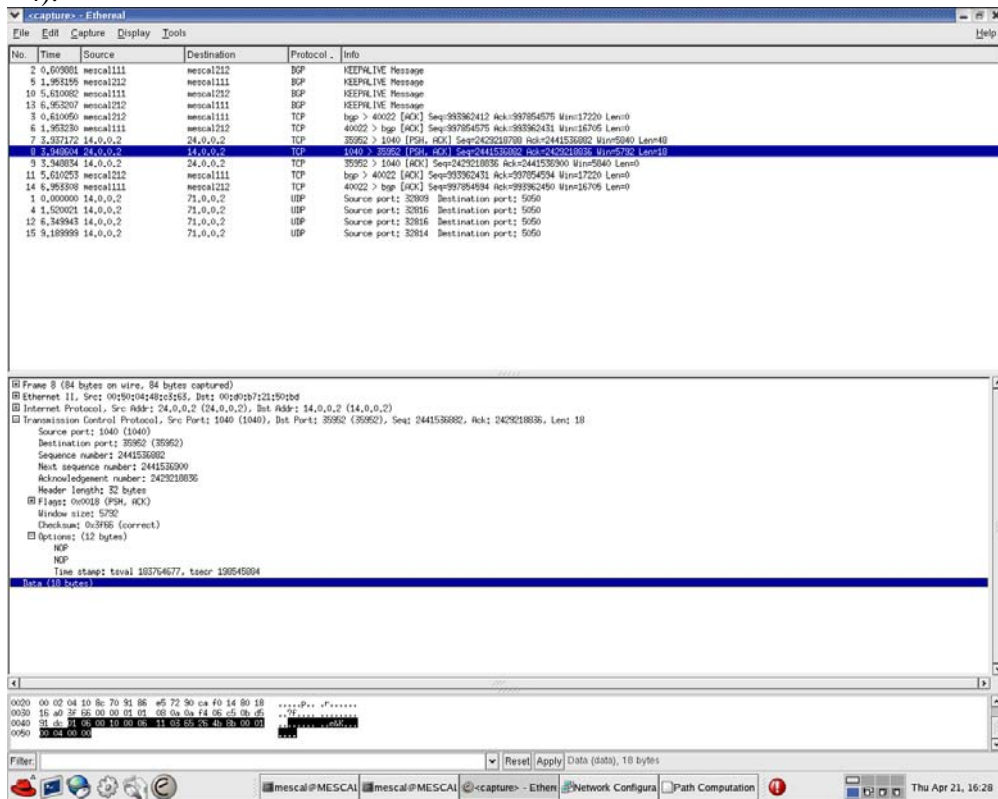
Failure level   : None.
Remarks   : None

Test Reference : **TB_P3_FUNCT/CMES/7**

Test Purpose   : Check the format of CANCEL and messages.

Procedure   :
                   Establish a PCP communication between MESCAL11'PSC and MESCAL21'PCS.

                   Configuration is the same as for scenario 1 of **TB_P3_FUNCT/CMES/2.**

Configure MESCAL11'PCS to send a CANCEL message to MESCAL21'PCS during path negotiation.

Launch a traffic analyzer that captures MESCAL11' eth1 traffic.

Expected result : CANCEL message should be as specified in introduction if this test group. PATH-COMPUTATION-ID and REQ-REFERENCE-ID must be the same as what have been used in the REQUEST message.

Execution date : 21/04/05

Result : The format of the CANCEL message is conform to D1.2 specifications. PATH-COMPUTATION-ID and REQ-REFERENCE-ID are the same as what have been used in the REQUEST message as illustrated by the figures below: the first one is for the REQUEST message, and the second one for the CANCEL message:
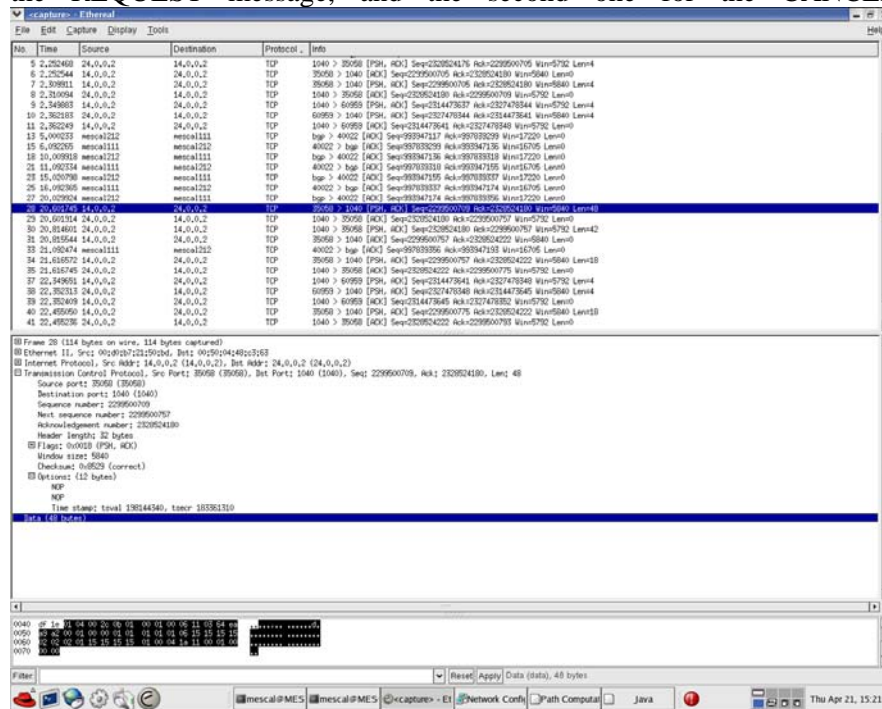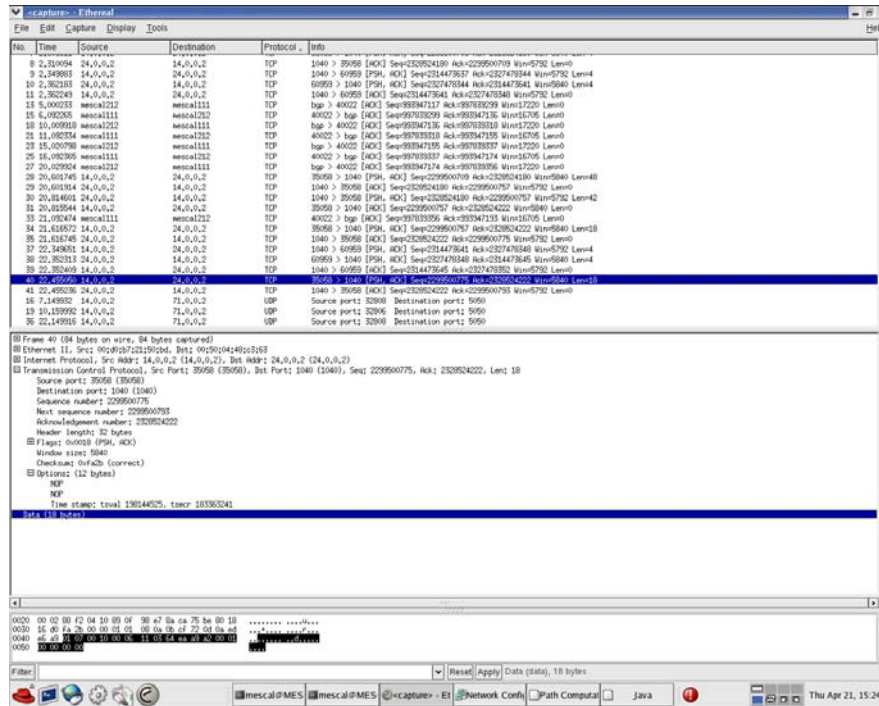
Failure level : None.
Remarks : None.

Test Reference : **TB_P3_FUNCT/CMES/8**

Test Purpose : Check operational behaviours when receiving REQUEST messages.

Procedure :
Launch a traffic analyzer that captures MESCAL11' eth1 traffic.

Establish a PCP session between MESCAL11'PCS and MESCAL21'PCS.

- Scenario 1: When PCP session is accepted by MESCAL21'PCS, configure MESCAL11'PCS to send a request for an LSP with a head-end-address 1.1.1.6 and tail-end-address in 2.2.2.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 0.

- Scenario 2: When PCP session is accepted by MESCAL21'PCS, configure MESCAL11'PCS to send a request for an LSP with a head-end-address 3.3.3.1 and tail-end-address in 2.2.2.1 in MC1 and a bandwidth of 1Mbit.

- Scenario 3: When PCP session is accepted by MESCAL21'PCS, configure MESCAL11'PCS to send a request for an LSP with a head-end-address 1.1.1.6 and tail-end-address in 2.2.2.1 in MC1 and a bandwidth of 5Mbit.

Examine the messages exchanged between the two PCS.

Expected result :

- Scenario 1: MESCAL21' PCS must send a ERROR-PATH message to MESCAL11' PCS with TTL expired error (value = 5)

- Scenario 2: MESCAL21'PCS must send a ERROR-PATH message to MESCAL11'PCS (value = 3)

- Scenario 3: MESCAL21's must send a ERROR-PATH message to
  MESCAL11'PCS (value = 1)

Execution date : 21/04/05
Result   : Obtained results are as follows:

- Scenario 1: MESCAL21' PCS sent a ERROR-PATH message to MESCAL11'PCS
  with TTL expired error (value = 5)

- Scenario 2: MESCAL21'PCS sent a ERROR-PATH message to MESCAL11'PCS
  (value = 3)

- Scenario 3: MESCAL21' PCS sent a ERROR-PATH message to MESCAL11'PCS (value = 1)
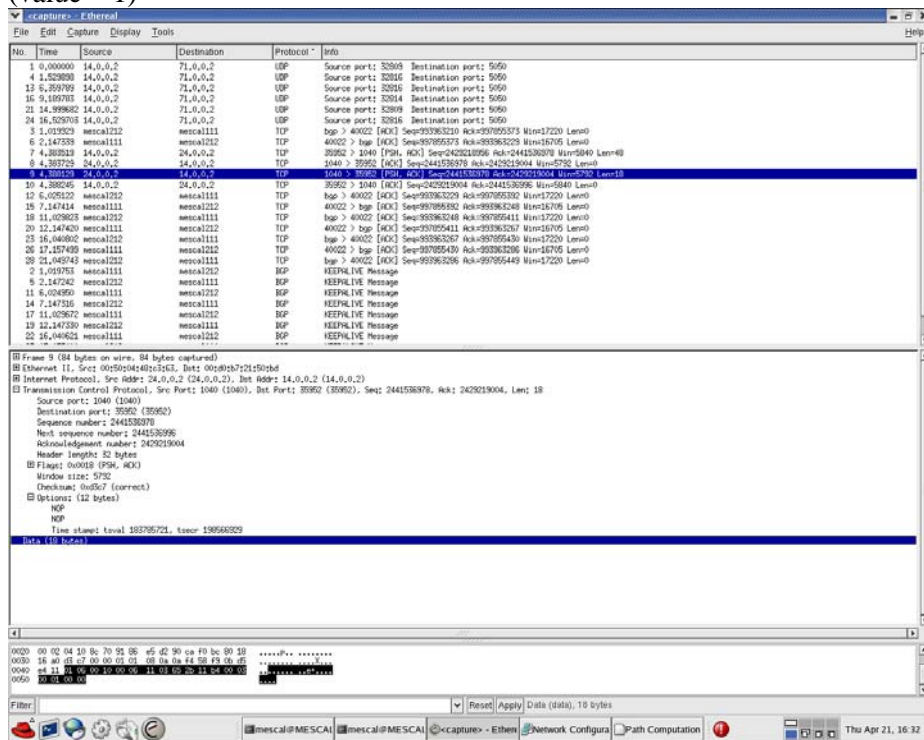
Failure level : None.
Remarks : None.

10.3.2 TB_P3_FUNCT/QAGG

Only AS1, AS2 and AS3 are used to run this tests group. pSLSs are established between AS1 and AS2 and between AS1 and AS3 in order to extend Hard Solution Option of each domain.

- AS1offers a pSLS to AS2

  - MQC1: 0x68 bandwidth: 1Mbit

  - MQC0: 0x00 minimum bandwidth: 2Mbit maximum bandwidth: 3Mbit

- AS3 offers a pSLS to AS1

  - MQC1: 0x88 bandwidth: 1Mbit

  - MQC0: 0x00 minimum bandwidth: 2Mbit maximum bandwidth: 3Mbit

QoS capabilities of each AS are those described in 10.2.4

Test Reference : **TB_P3_FUNCT/QAGG/1**

Test Purpose : Check QoS aggregation operation

Procedure :
Launch a traffic analyzer that captures MESCAL11' eth1 and MESCAL21' eth1 traffic.

Establish a PCP session between MESCAL11'PCS and MESCAL21'PCS.
Establish a PCP session between MESCAL11'PCS and MESCAL31'PCS.

- Scenario 1: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. No QoS parameters are to be inserted in the request.

- Scenario 2: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 5Mbit. TTL is to be set to 30. No QoS parameters are to be inserted in the request.

- Scenario 3: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set minimum one-way delay to 45.

- Scenario 4: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set minimum one-way delay to 25.

- Scenario 5: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set maximum one-way delay to 80.

- Scenario 6: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set maximum one-way delay to 60.

- Scenario 7: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set average one-way delay to 40.

- Scenario 8: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set average one-way delay to 50.

- Scenario 9: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set jitter to 20.

- Scenario 10: When PCP session is established between MESCAL11'PCS and MESCAL21'PCS, configure MESCAL21'PCS to send a request for an LSP with a head-end-address 1.1.1.5 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 30. Set jitter one-way delay to 30.

Examine the messages exchanged between MESCAL11 and MESCAL21 and between MESCAL11 and MESCAL31.
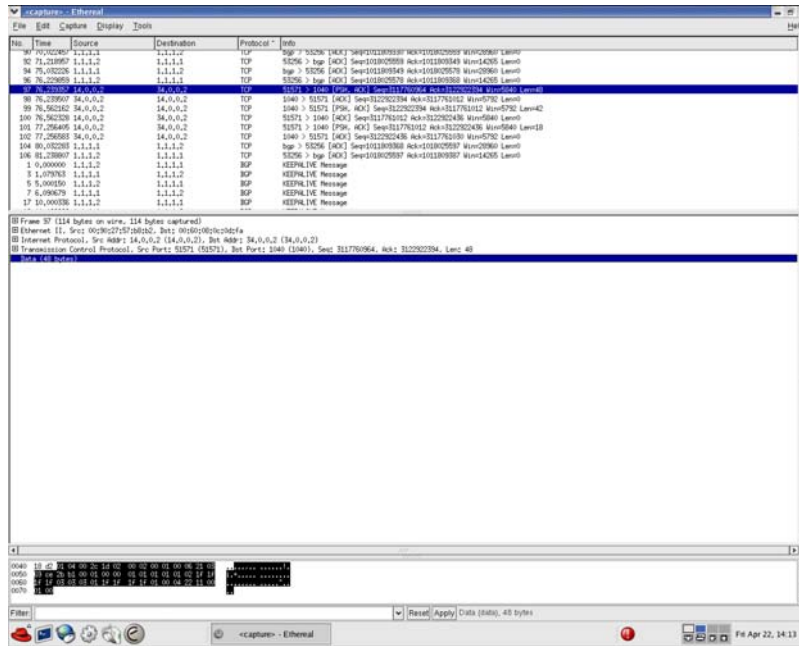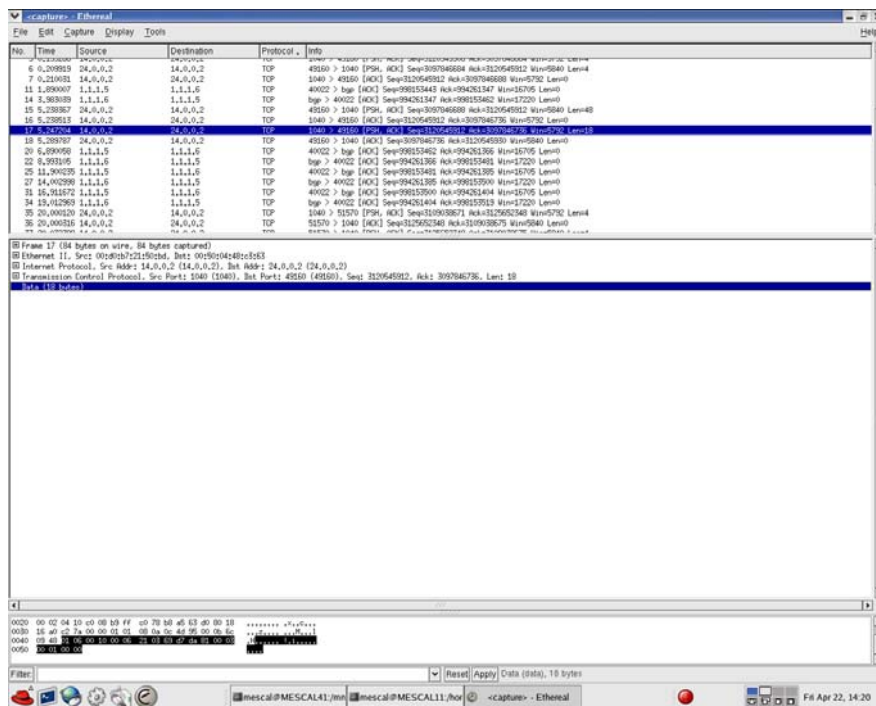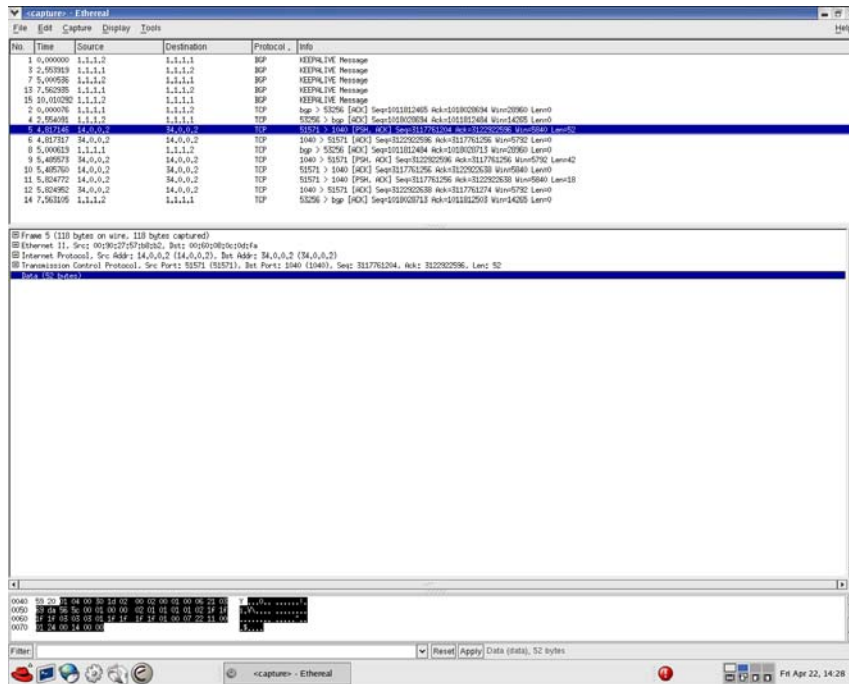
Expected result :

- Scenario 1: MESCAL11'PCS must forward this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 29. No QoS parameters are to be inserted in the request.
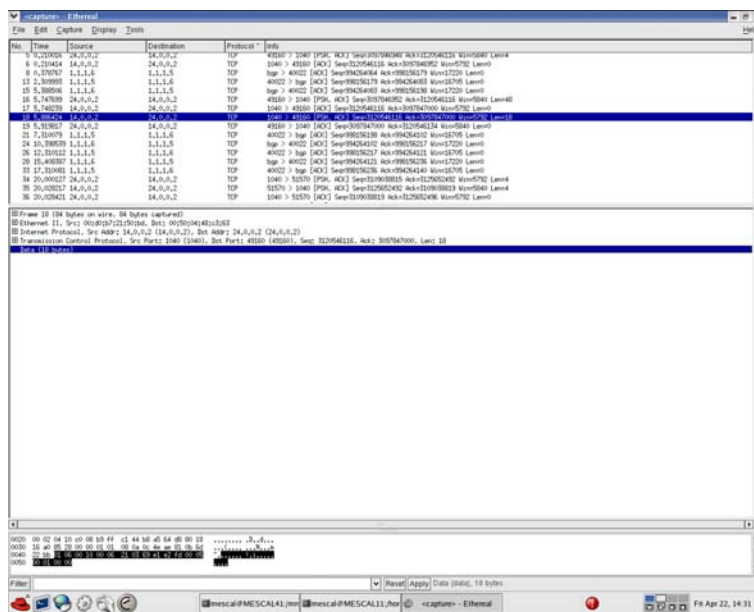
- Scenario 2: MESCAL11's must send a ERROR-PATH message to MESCAL21'PCS (value = 1)
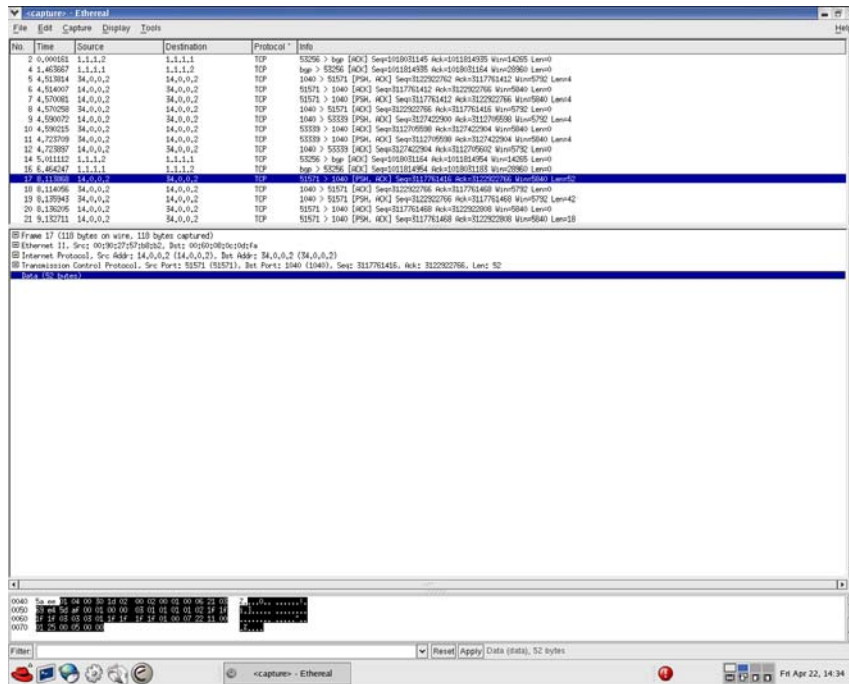
- Scenario 3: MESCAL11'PCS must forward this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 29. Minimum one-way delay is set to a value less than 35.

- Scenario 4: MESCAL11's must send a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 5: MESCAL11'PCS must forward this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 29. Maximum one-way delay is set to a value less than 30.

- Scenario 6: MESCAL11's must send a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 7: MESCAL11's must send a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 8: MESCAL11'PCS must forward this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 29. Average one-way delay is set to a value less than 20.

- Scenario 9: MESCAL11's must send a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 10: MESCAL11'PCS must forward this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is to be set to 29. Jitter is set to a value less than 10.

Execution date : 22/04/05
Result   : Obtained results are as follows:

- Scenario 1: MESCAL11'PCS forwards the request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is set to 29. No QoS parameters are inserted in the request.
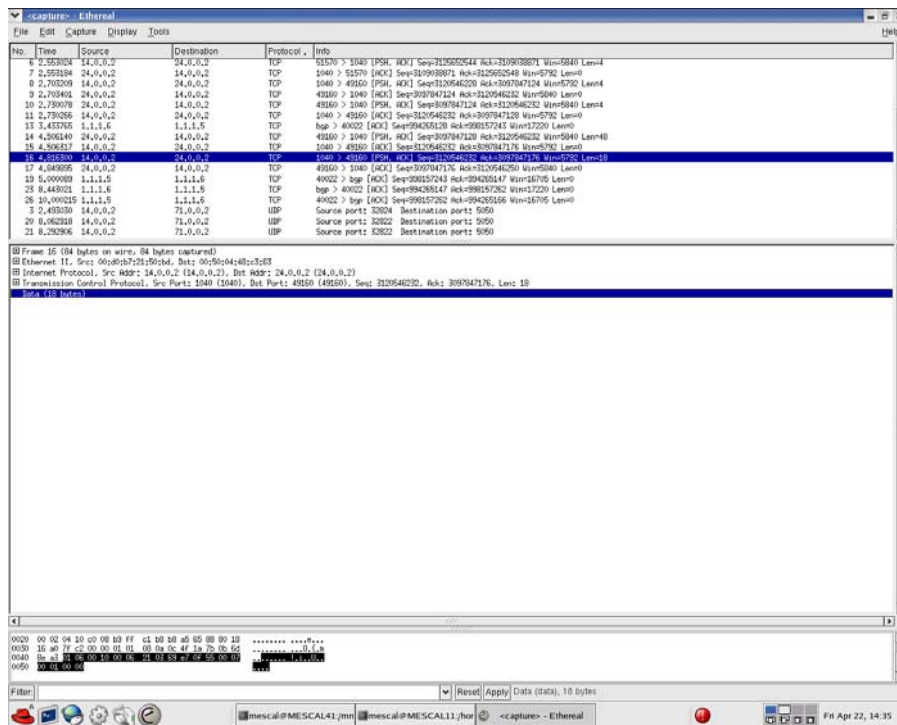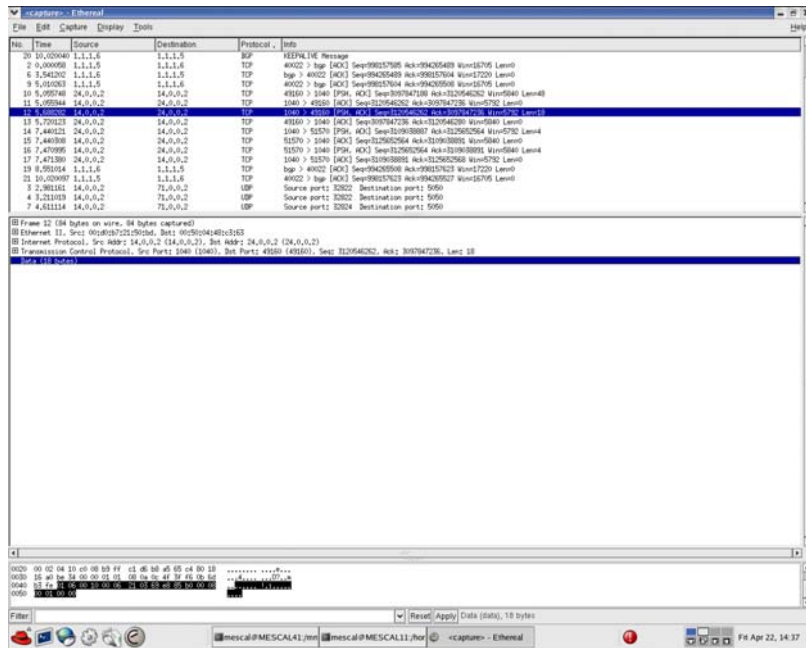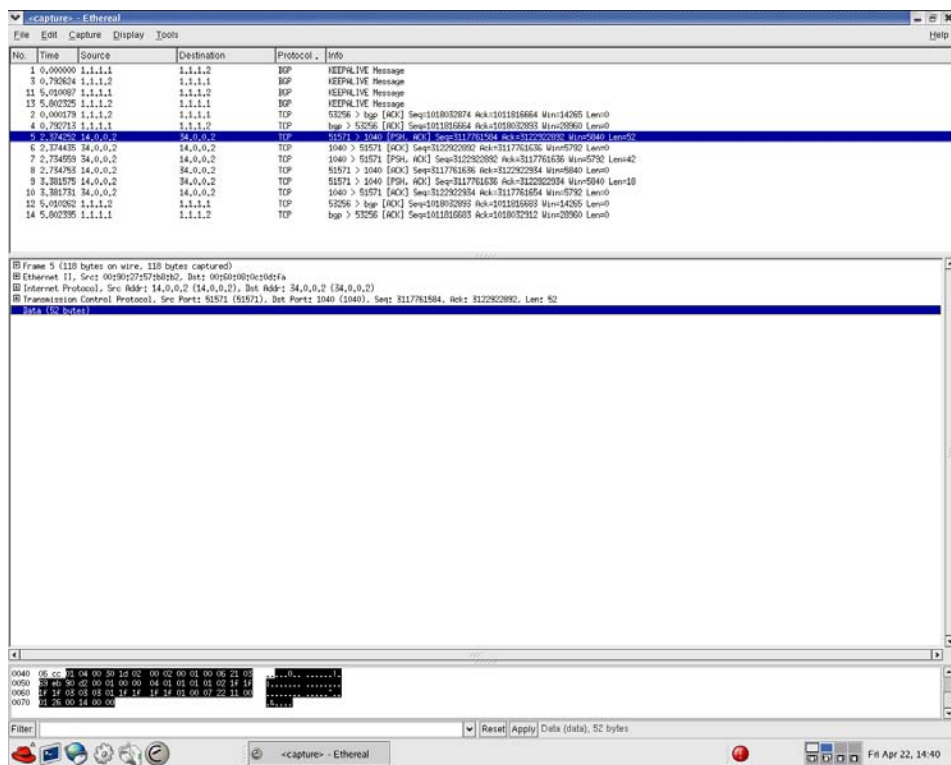
- ▪ Scenario 2: MESCAL11' PCS sent a ERROR-PATH message to MESCAL21'PCS (value = 1)

- ▪ Scenario 3: MESCAL11'PCS forwards the request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is set to 29. Minimum one-way delay is set to a value less than 35.

- Scenario 4: MESCAL11' PCS sent a ERROR-PATH message to MESCAL21'PCS (value = 1)
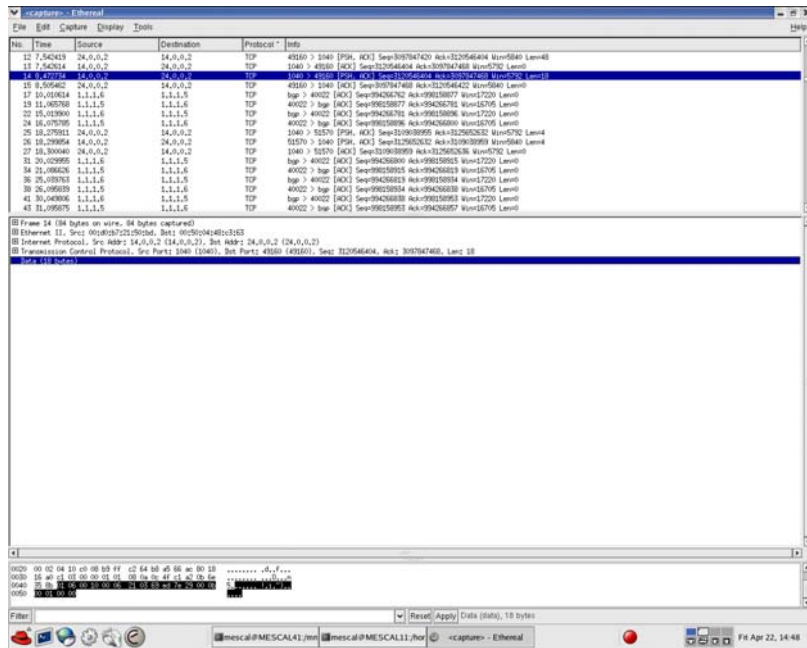

- Scenario 5: MESCAL11'PCS forwards the request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is set to 29. Maximum one-way delay is set to a value less than 30.

- Scenario 6: MESCAL11' PCS sent a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 7: MESCAL11'PCS sent a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 8: MESCAL11'PCS forwards the request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is set to 29. Average one-way delay is set to a value less than 20.

- Scenario 9: MESCAL11' PCS send a ERROR-PATH message to MESCAL21'PCS (value = 1)

- Scenario 10: MESCAL11'PCS forwards this request to MESCAL31'PCS. This request is for an LSP with a head-end-address 1.1.1.2 and tail-end-address in 3.3.3.1 in MC1 and a bandwidth of 1Mbit. TTL is set to 29. Jitter is set to a value less than 10.
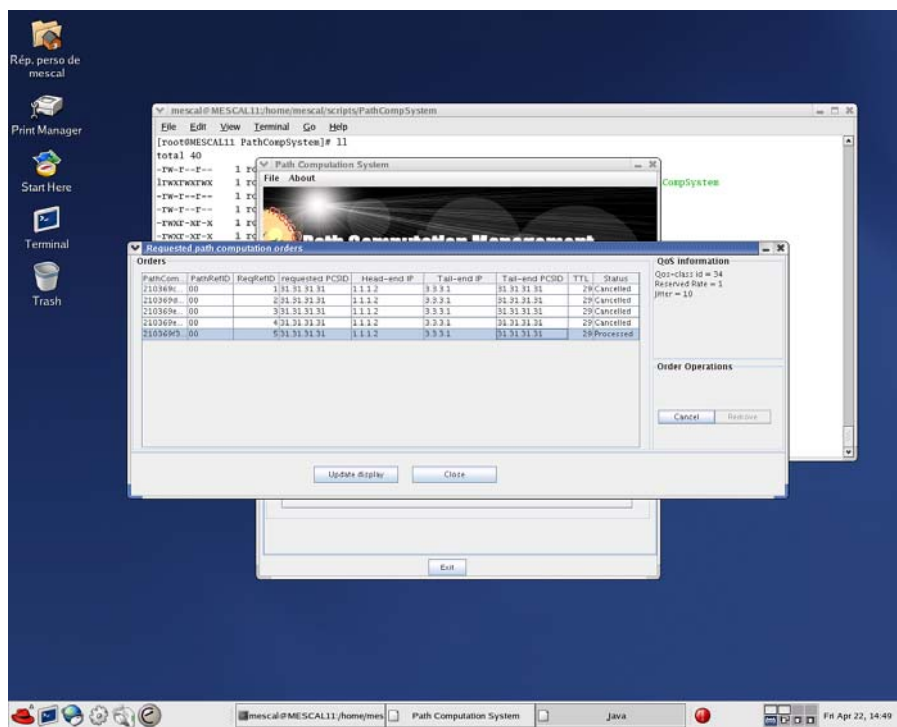
Failure level : None.
Remarks : None.

10.3.3 TB_P3_FUNCT/RESAV

Sub-group preamble

The established pSLSs between ASs concern only MC1 and Best-effort planes.

QoS guarantees of l-QC implementing MC1 in each AS are configured as follows:

Attributes	Priority	l-QC11	l-QC21	l-QC31	l-QC41	l-QC51	l-QC61	l-QC71	l-QC81
Average-owd	1	10	13	12	15	8	9	10	12
Jitter	2	1	2	3	4	2	3	2	1
Max-owd	3	15	19	18	23	13	14	15	18
Loss-rate	4	70	100	110	185	80	90	80	75
Reserved-rate	5	18	22	23	35	24	33	24	21
Available-rate	6	20	28		39		35		23
Min-owd	7	7		9	8				

Table 38: Local QoS Class Characteristics

Psls	PCE1	PCE2	PCE3	PCE4	PCE5	PCE6	PCE7	PCE8
PCE1		15	15					
PCE2	15			20				
PCE3	15			10+10				
PCE4		20	10+10		20	15+15		
PCE5				20			18	
PCE6				15+15			20	20
PCE7					18	20		
PCE8						20		

Table 39: Maximum bandwidth allowed for MC1

The PCSID of AS8's PCE is set to 81.81.81.81.

Test Reference : **TB_P3_FUNCT/RESAV/1**

Test Purpose : Check resource reservation

Procedure : Configure three path computation orders to be sent by PCE1 (AS1). The tail-end PCSID of these requests is set to 81.81.81.81(AS8) and the QoS constraints are: loss-rate=550, max-owd=90, average-owd=60, jitter=13. The requested bandwidths are 8, 8 and 6 Mb/s.

Expected result : The result of each request must be as follows:

- The first path computation order must be successfully achieved. The computed path must contain MESCAL11, MESCAL31, MESCAL41, MESCAL61 and MESCAL81.

- The second path computation order must be successfully achieved. The computed path must contain MESCAL11, MESCAL21, MESCAL42, MESCAL43, MESCAL61 and MESCAL81.

- The third path computation order must fail because of a lack or resources available in the inter-domain link between MESCAL61 and MESCAL81. AS6 must receive 4 orders from AS4 and cancel all of them because of the lack of resources available (REASON-CODE=1). No orders must be sent to MESCAL51 because of the requested QoS constraints.
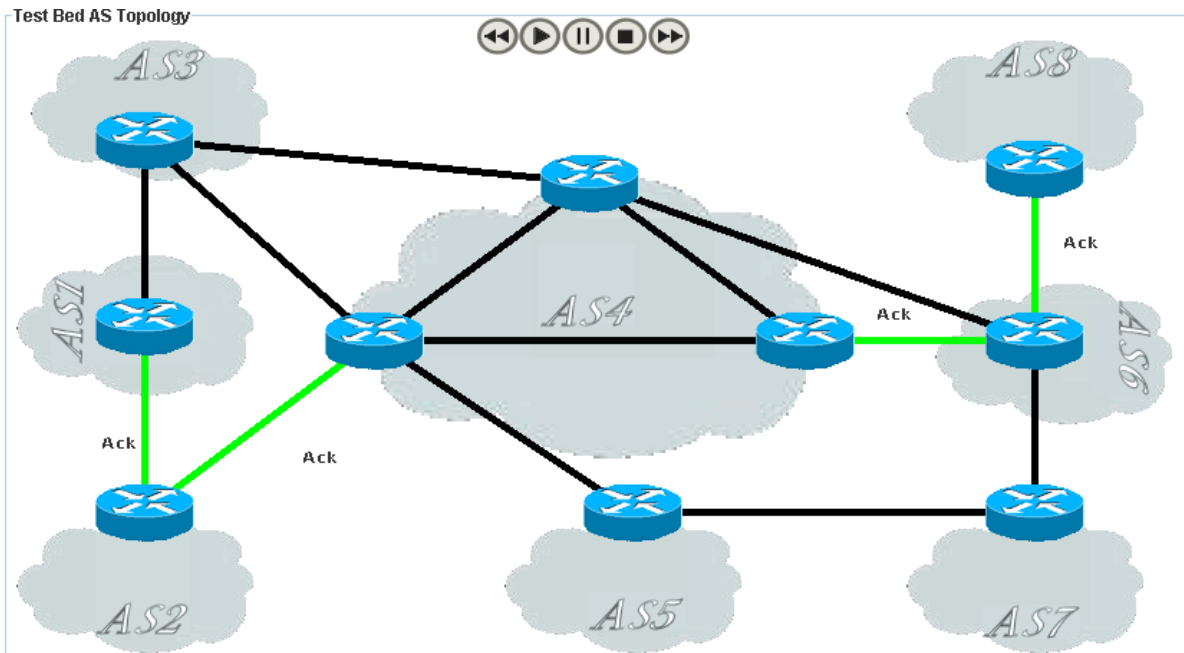
Execution date : 27/05/05
Result : Obtained results are as follows:

- The first path computation order is successfully achieved and the computed path contains MESCAL11, MESCAL31, MESCAL41, MESCAL61 and MESCAL81.
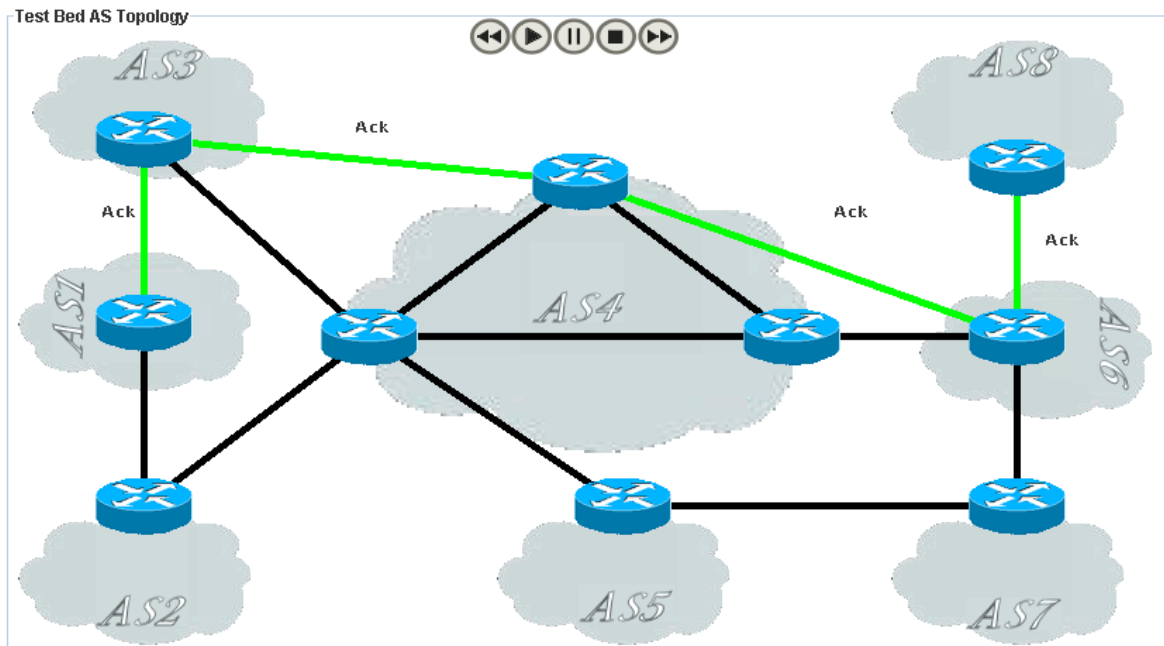

- The second path computation order is successfully achieved. The computed path contains MESCAL11, MESCAL21, MESCAL42, MESCAL43, MESCAL61 and MESCAL81.

- The third path computation order has failed because of a lack or resources available in the inter-domain link between MESCAL61 and MESCAL81. AS6 has

received 4 orders from AS4 and has canceled all of them because of the lack of resources available (REASON-CODE=1). No order has been sent to MESCAL51.
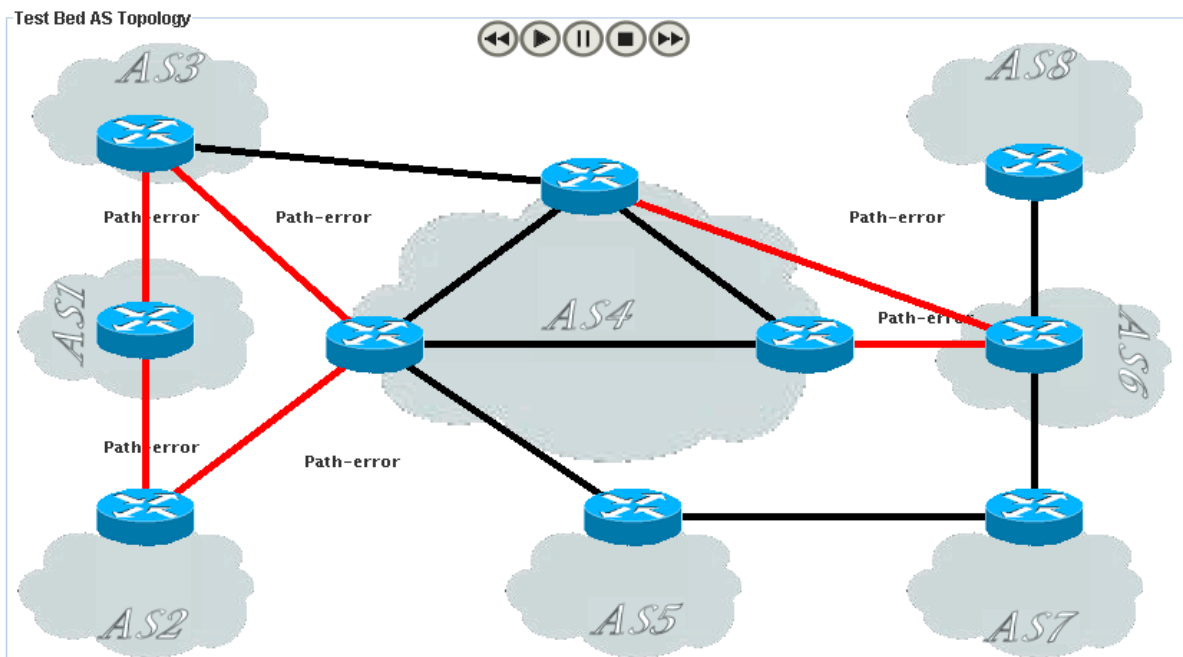
Failure level   : None.

Remarks   : For the third order, there is no resource available between AS6 and AS8, and no sub-order with the requested bandwidth could be satisfied. It could be useful to have a more precise description of the error in the path-error message and to use this information to exclude for instance AS6 in the next requests. In this case AS4 would have sent only one request to AS6 and AS1 would not have sent any request to AS2 because whatever the path is, the order would be rejected by AS6.

Test Reference   : **TB_P3_FUNCT/RESAV/2**

Test Purpose   : Check Resource release when an order is canceled by a requestor.

Procedure   : The following tasks must be done:

- A first computation order must be sent by PCE1 with the tail-end PCSID set to 81.81.81.81. The requested bandwidth is 10 Mb/s.

- A second computation order must be sent by PCE1 with the tail-end PCSID set to 81.81.81.81. The requested bandwidth is 15 Mb/s.

- The first order must be canceled by PCE1.

- An order with the same characteristics as the second one must be sent.

Expected result : The result of each task must be:

- The first order must be successfully computed and resources pre-reserved along the computed path.
- The second order must fail because there is no resource available between AS6 and AS8.
- Cancel Messages must be propagated along the path and resources must be released.

- The last order must be successfully computed and resources pre-reserved along the computed path.
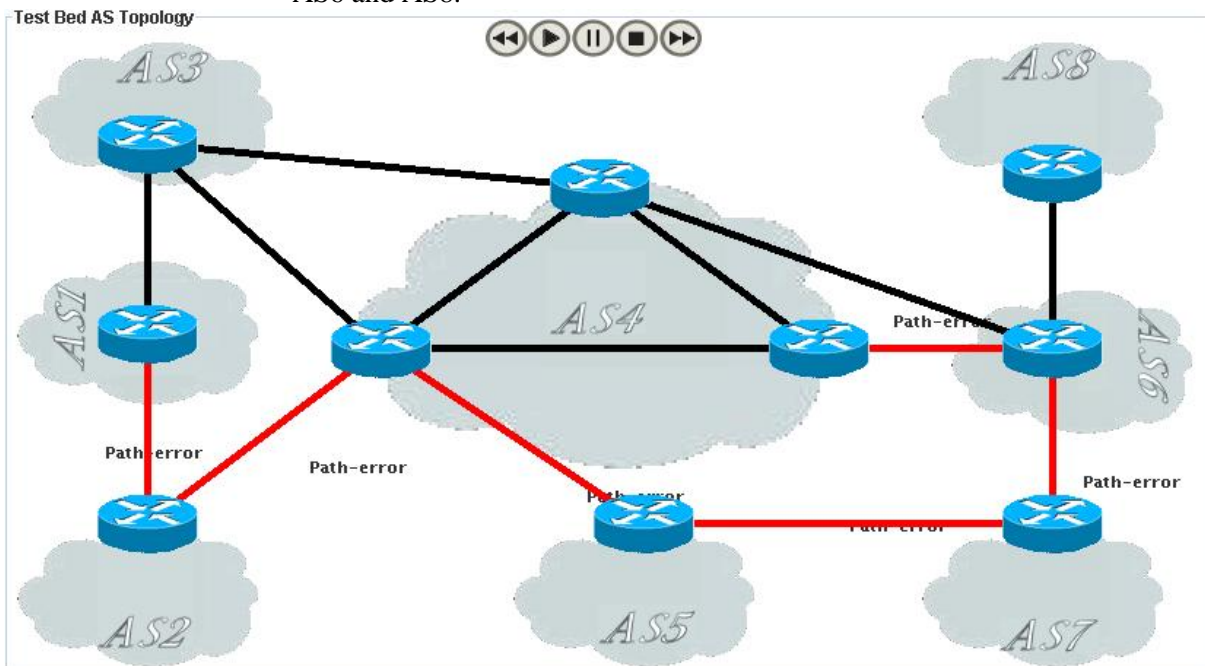
Execution date : 30/05/05
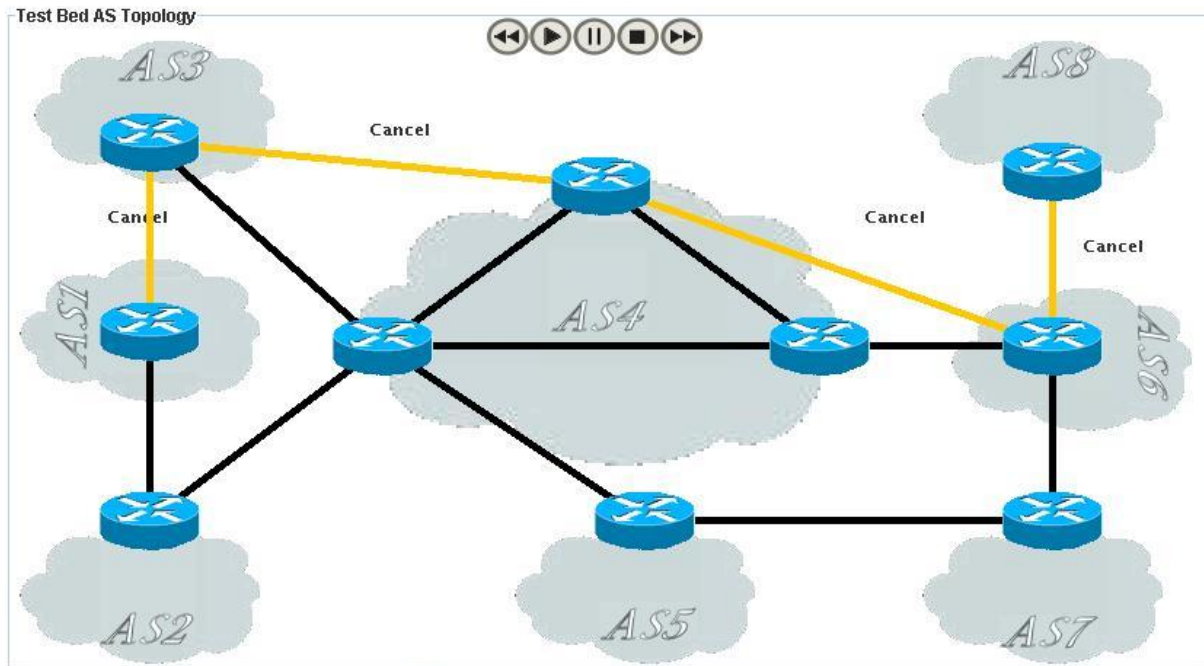*Result*   : Obtained results are as follows:

- The first order has been successfully computed and resources have been pre-reserved along the computed path.
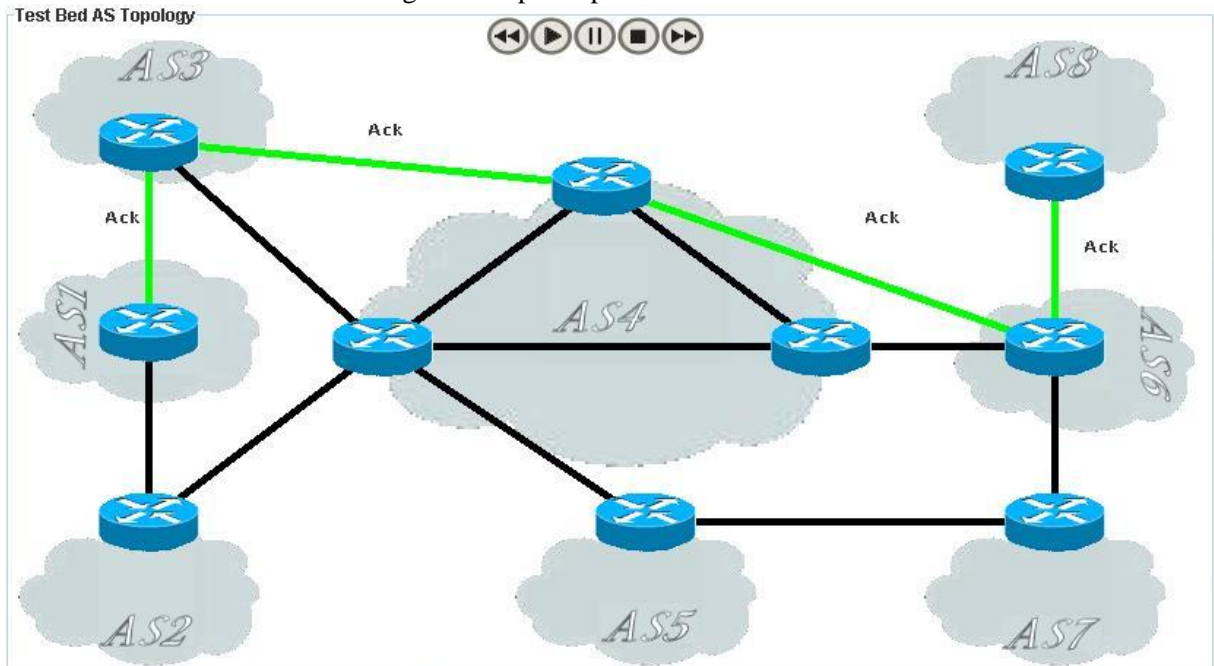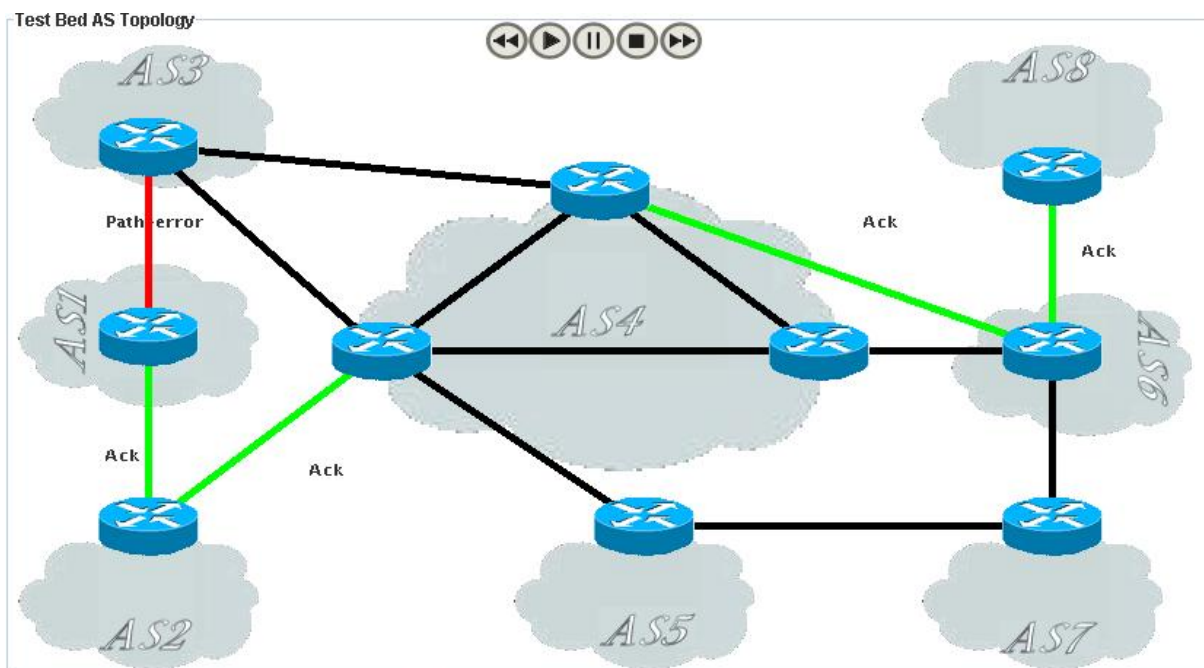

- The second order has failed because there is no resource available between AS6 and AS8.

- Cancel Messages have been propagated along the path and resources have been released.

- The last order has been successfully computed and resources have been pre-reserved along the computed path.

Failure level   : None.
Remarks   : None

Test Reference : **TB_P3_FUNCT/RESAV/3**

Test Purpose   : Check if an expired order is correctly canceled along the path.

Procedure   : The PCE of the AS4 must be configured to set the validy date of computed order to 1 minute after the computation date. The other PCEs are configured to set the validity date to 1 hour after the computation date. An order must be sent by PCE1 with the tail-

end PCSID set to 81.81.81.81 and the requested bandwidth set to 1 Mb/s. Wait until the validity date received in the path-response message expired.

Expected result : The order must be successfully computed and the validity date must be set to 1 minute after the computation date. When this validity date expires, the order must be canceled in each PCE. The order could be canceled by the local PCE because the validity date expired or by a neighbor PCE.

Execution date : 30/05/05

Result : The order has been successfully computed and the validity date was set to 1 minute after the computation date. 1 minute later, the validity date expired and the AS4 sent cancel messages which have been then propagated along the computed path.

Failure level : None.

Remarks : If the AS4 had not sent cancel messages to its neighbours concerned by the order, each PCE would have canceled locally the order because each PCE has a validity date associated to this order.