



Neterion Joint Certification Test Results: Force10 S2410

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I. Document Revision History

Revision	Date	Description
Initial 01	Nov, 2007	<ul style="list-style-type: none">Initial Version.
02	Jan. 2008	<ul style="list-style-type: none">Completed NDISTEST 6.0 section and changed to rev 03 of test

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1. Introduction

This document describes the test procedures and results of the Neterion and Switch Vendors Joint Certification Test Plan (Document number S2Q000005 Rev 03) as it pertains to a Force10 S2410 switch that was started October 2007 and subsequently finished January 2008 with additional testing. The Force10 S2410 switch was found to successfully pass the NDISTEST 6.0 testing. Additionally advanced GUI feature testing passed successfully. The advanced GUI feature testing included Link Aggregation/LACP testing, VLAN testing, and Pair Failover testing. Also, the test tool netpipe.exe was used and showed passing latency performance. Finally, the port performance in both the receiving and sending directions was found to be line rate compatible with no negative impact on the Xframe II in throughput testing.

Summary of results:

Test Category	Result
NDISTest 6.0	PASS
Advanced Features Testing	PASS
NetPIPE - Latency Testing	PASS
Performance Testing	PASS

Table 1: Summary of results (1)

2. NDISTest 6.0

The NDISTest 6.0 tests were able to pass while connected through the Force10 S2410 switch. However, when configured for MTU 1500, the NDISTest 6.0 fails the following tests:

2c_mini6stress.htm
2c_receivepackets.htm
2c_sendpackets.htm
2c_transferdata.htm.

These tests require a MTU of 1522. Although this does not happen in back to back testing, it is not an error in the switch.

After changing the MTU to 10240, the tests all passed successfully.

Result: PASS

3. Advanced Features Testing

Advanced switch features were tested by connecting Xframe II 10 GbE adapters as client and server to the switch. Link Aggregation/LACP, VLANs, Pair Failover and combinations thereof were tested using Neterion Xframe Control Panel (XCP) software and the Xframe NDIS driver.

3.1. LINK AGGREGATION/LACP TEAM TESTING

After properly configuring the Force10 S2410 switch and creating a team of 2 Xframe II adapters using the XCP software on the “server”, the “server” could successfully ping the “client.”

The Force10 S2410 switch and XCP software both reported that LACP properly negotiated and that the team was created successfully.

Furthermore, performance testing showed that both adapters were passing traffic. Upon removal of one physical connection, traffic continued successfully. After replacement of the connection, traffic recovered. After removing the connection to the other team member, traffic also successfully passed over the previously replaced connection.

Result: PASS

3.2. VLANS TESTING

The Force10 S2410 switch was configured for tagged traffic on VLANs. Also, a VLAN was created on the XFrame II adapter in the “server” and “client” by using XCP software. The “server” could successfully ping the “client.”

After configuring multiple VLANs on the Force10 S2410 switch and test machines (and configuring IP subnets correctly), traffic also correctly passed.

After changing the VLANs on the Force10 S2410 switch to different VLANs than the Xframe II adapters, traffic would not pass. (Expected)

Result: PASS

3.3. PAIR FAILOVER TESTING

No special configuration to a switch is necessary for Pair Failover testing. However, in this test, pair failover testing was done without VLANs. Thus, VLANs created in 4.2 were removed. A Pair (HAA/BA) combination was created using the XCP software and Xframe II adapter. The “server” HAA could then successfully ping the “client.”

With physical removal of the HAA connection from the Force10 S2410 switch, the ping continued.

Replacing the HAA connection allowed ping to continue over the HAA connection.

Result: PASS

3.4. LINK AGGREGATION/LACP with VLANs TESTING

The Force10 S2410 switch was configured for LACP and a VLAN; and then, a VLAN was created on a team of 2 Xframe II adapters using the XCP software on the “server.” The “server” could then successfully ping the “client” configured to the same VLAN.

The Force10 S2410 switch and XCP software both reported that LACP properly negotiated and that the team was created successfully.

Furthermore, performance testing showed that both adapters were passing traffic. On removal of one cable, traffic continued successfully. Replacing the cable allowed traffic to recover. After removing the other cable, traffic could also pass.

Result: PASS

3.5. PAIR FAILOVER TESTING with VLANs TESTING

A VLAN was added to the Force10 S2410 switch ports connected to the adapters. A VLAN was created on the HAA of an SFT PAIR using the XCP software. A similar VLAN was created on the “client.” The “server” HAA could successfully ping the “client.”

With physical removal of the HAA connection from the switch, the ping continued.

Upon replacement of the HAA connection, ping continued.

Result: PASS

4. NetPIPE - Latency Testing

Latency tests were conducted using the test tool netpipe.exe between two machines. Latency was measured first with 2 machine connected back to back with Xframe II adapters. Next, the same machines were connected through the Force10 S2410 switch. This was done with both 1500 MTU and 9000 MTU. A comparison of the results between a back to back connection and the results of the setup that used the Force10 S2410 switch did not indicate any adverse latency effects. The difference was considered small and in some cases better than back to back.

Result: PASS

5. Performance Testing

5.1. Port Input Performance (Bandwidth / Balance)

The Force10 switch was found to support the line rate performance testing achieved in this test of 9.9+ Gbps input at the port connected to Machine A. (An AMD Opteron Server with 266 Mhz slot)

Result: PASS

The Force10 switch was found to properly balance the bandwidth to Machines B and C.

Result PASS

5.2. Port Output Performance (Bandwidth / Balance)

The Force10 switch was found to support the line rate performance testing achieved in this test of 9.9+ Gbps output at the port connected to Machine A. (An AMD Opteron Server with 266 Mhz slot)

Result: PASS

The Force10 switch was found to properly balance the bandwidth to Machines B and C.

Result PASS

6. Conclusion

After testing the Force10 S2410 switch NDISTEST 6.0 compatibility, advanced features, latency, and port performance the Force10 S2410 switch was found to pass these Neterion compatibility and interoperability tests.