

## IBM TotalStorage Proven™ program

### Cisco Systems, Inc. Cisco ONS 15454 MSTP supports IBM PPRC



#### **Testing Template:**

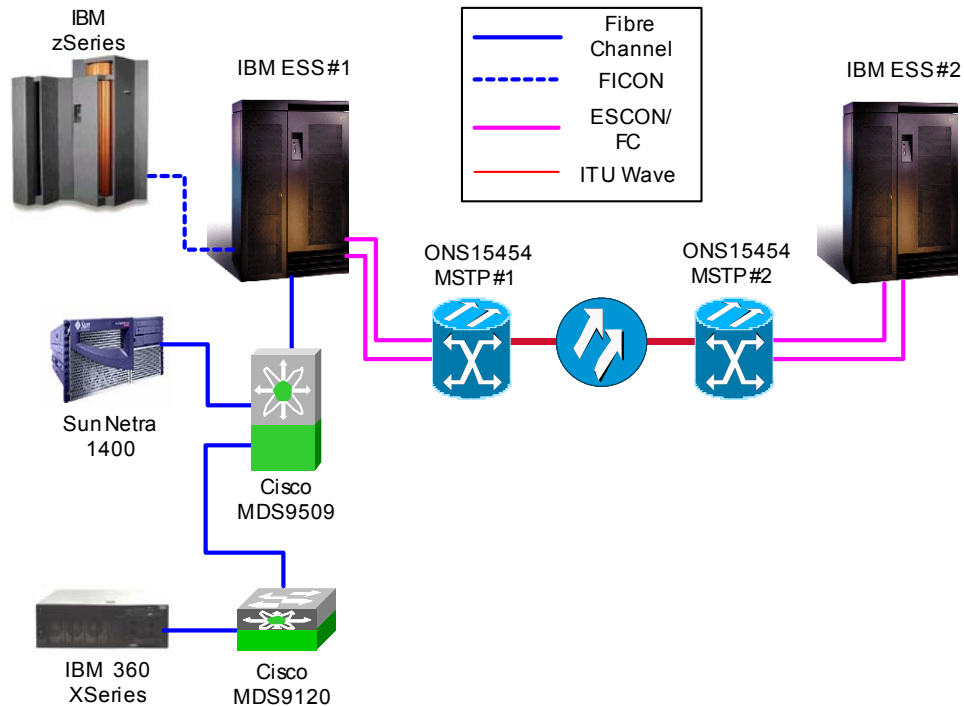
This document will be used to describe, from a technical perspective, the elements that were included as part of the IBM TotalStorage Proven testing. It is intended to give an overall picture of the technical elements of the configuration, with a brief description of the results of the testing including any specific highlights of the interoperability results.

High-level architecture/description, include a list of products that meet the compatibility requirements ("Approved Product(s)") as well as a list of the IBM storage products with which the Approved Products meet the compatibility requirements ("Qualified IBM Storage Products"):

The connectivity solution consisting of the Cisco ONS 15454 MSTP Dense Wavelength Division Multiplexer (DWDM) enables a cost effective interconnection platform which supports IBM Peer to Peer Remote Copy (PPRC). Compatibility was tested successfully with IBM Enterprise Storage Server (ESS) Model 2105-F20 and ESS Model 800 attached to multiple servers and Cisco MDS Storage Switches.

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## Testing scenario



**Testing level achieved:** Comprehensive

## Test Environment

The test objective was to determine how the Cisco ONS 15454 MSTP Dense Wavelength Division Multiplexer (DWDM) interoperates with the IBM Enterprise Storage Server and Peer to Peer Remote Copy (PPRC) data replication solution. Multiple server platforms and Cisco MDS Storage Switches were also included in the test environment.

## Versions of products included in the testing

- Servers
  - IBM 2064 -104 zSeries Server
  - IBM 360 xSeries Server with Red Hat AS3
    - HBA firmware 3.02.13
    - Driver level 6.06.00b11
  - Sun Netra 1405 Server with Solaris
    - Firmware level 3.1.14
    - Fibre Channel Driver 4.06

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- Storage
  - ESS Model 2105-F20
    - Version 2.2.0.693
    - 64 drives and 18 GB capacity
    - 32 drives and 18 GB capacity
  - ESS Model 800
    - Version 2.4.1.54
    - 128 drives and 36 GB capacity
- Switches
  - Cisco ONS 15454, Version 4.7
  - Cisco MDS 9509, SAN-OS V 2.0(2b)
  - Cisco ONS 9120, SAN-OS V 2.0 (2b)
- Data replication
  - IBM Peer to Peer Remote Copy (PPRC) - ESCON and Fibre Channel

### Description of the testing results

- Testing completed between October 25 – November 16, 2004
- Testing steps on Cisco ONS included:
  - Pulled one of two PPRC links and verified traffic continues
  - Pulled trunk fiber and verified failover to protection path worked correctly
  - Pulled power supply and verified backup power supply is utilized and no traffic disruption occurred during the test
  - Pulled various line cards, including standby CPU and verified no traffic failure
  - In-line software upgrades performed and then performed CPU switchover
  - During exception handling testing, verify ONS properly displayed alarms
  - Utilized Bonnie test tool to stress I/O

### Technical customer support information

[www.cisco.com](http://www.cisco.com) technical support

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