Lakeview Technology
MIMIX® network1™

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"):
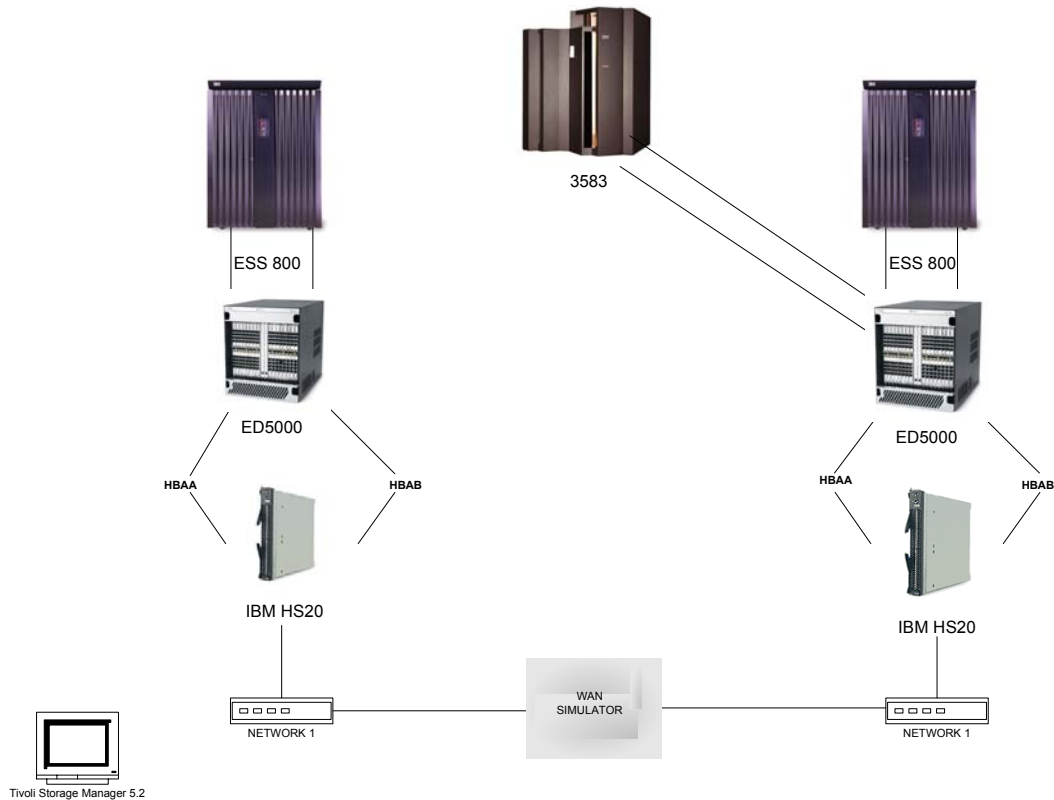
MIMIX® network1™ is the network data compression solution used to move more data traffic through the same bandwidth. MIMIX® network1™ is application and platform independent and can be integrated into any IP-based network.

A WAN simulator separated two IBM HS20 blade servers. Each server was connected to an Enterprise Storage System (ES800) via a McData ED5000 switch. The second server configuration was also attached to an IBM 3583 Tape Library via the McData switch. MIMIX® network1™ appliances were placed between the blade servers and the WAN simulator and served as the network gateway for each configuration.

MIMIX® network1™ appliances can be configured to compress selected network traffic or all IP-based communications. For testing purposes the appliance were configured to compress all IP traffic.

The actual testing scenario:

Testing level achieved: **Standard**
> The standard test consists of install, configuration, load, exercise I/O, and backup/restore testing.

Testing:

> **Test #1 description:** Server1 and Server 2 both use fibre channel SAN storage (ESS800). Data from Server 1 was copied to Server 2 using Windows™ copy utilities through the MIMIX® network1™ appliance. Several file types and sized were copied in multiple tests. At the end of each test total file sizes and data integrity was verified with no exceptions.

> **Test #2 description:** An application residing on the ESS800 attached to Server1 was launched over the network and through the MIMIX® network1™ appliances from Server2. At the end of the test, the application's successful execution and relevant data integrity was verified with no exception.

> **Test #3 description:** The entire contents of a hard drive were copied from Server1 to Server2 using Tivoli Storage Manager. At the end of each test total file sizes and data integrity was verified with no exception.

Server power failures initiated on both MIMIX® network1™ appliances. The appliances successfully "switched-to-wire" maintaining uninterrupted communications between the two IBM blade servers while powered off.

Backup and restores were performed under the above scenarios using Tivoli Storage Manager 5.2 and IBM 3583 Tape Library. Data integrity of backups and restores was verified with no exceptions.

Benefits of MIMIX® network1™ appliances include:
- Robust communication protocols, advanced packet-loss recovery capabilities, and use of industry-standard redundancy protocols ensure reliable data transmission.
- "Switch-to-wire" ensures uninterrupted communications in the event to a power failure.
- Integrates seamlessly with existing Quality of Service (QoS)
- Compatible with IP Virtual Private Networks (VPN) and encryption devices
- Provides historical and real-time reporting, including utilization and application statistics system-wide, per link, PVC, IP Tunnel, IP subnet, class or application.

Test Configuration:

Hardware Details:
  Server type(s) and quantity: (2) IBM Blade Server HS20
  Host Bus Adapter (HBA) vendor model(s): 48P7062
          Firmware level: 1.35
          Driver level: v6.05.0

  Network Interface Card (NIC) vendor: IBM
          Model(s) 48P7054
          Firmware levels: v7.0.00 Bios: V1.35

Storage Product(s) Used:
  IBM (2) 3583 Tape Library
  Version: L36-36
  Number of Drives: 6
  Drive Type: Ultrium 2 08L9870 LTO
  Capacity: 200/400GB
  Microcode Level: v5.14_01
  Comments: Tape drive will be connected via fibre channel to fabric

  IBM ESS 800
  Version: 2105
  Number of Drives: 16
  Drive Type: 36.4 GB
  Capacity: Raid Group 1: 245 GB (7+P) RAID 5; Raid Group 2: 245 GB (7+P) RAID 5

Microcode Level:
Comments: ESS 800 will be connected to fabric with dual connections for
redundant zoning from fibre channel fabric. Need license 2.1.0 for Microsoft level
support.

Switches:
McData ED-5000 (2)
Version: V.3.2

Software Details:
IBM Tivoli Storage Manager
Release level(s): 5.2
Description: Tivoli Storage Manager for backup and archive.
OS Version: Windows 2003

Test Results:

Files of various sizes and types, including the entire contents of a drive, were
successfully copied between the two IBM HS20 blade servers and ESS800s through
the MIMIX® network1™ appliances with no exceptions. Applications residing on a
server functioned properly and were successfully accessed from the other sever
through the MIMIX® network1™ appliances.

The above tests were successfully completed with the MIMIX® network1™
appliances powered on and off. When powered off, the devices default to a "switch-
to-wire" state that ensures the physical network link is never lost.

Backup and restore processes using Tivoli Storage Manager were successfully
completed through the MIMIX® network1™ appliances with no exceptions.

MIMIX® network1™ status screens and reporting processes correctly documented
the various status conditions in the testing scenarios.

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