

IBM TotalStorage Proven™ program

Kashya Inc. KBX5000, Data Protection Appliance



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"):

Introduction:

Intelligent Storage Networks promise a new heterogeneous, flexible and high performance platform for hosting storage applications. Kashya has delivered on this promise by utilizing the Cisco MDS 9000 Series SANTap Service, offering a fully heterogeneous fabric based data replication solution without the need of a host agent. The Kashya KBX5000 Data Replication Appliance replicates data in any SAN attached array, across any distance, to any other array, without any of the traditional downsides of deploying devices in-band (within the data-path), or out-of-band, in conjunction with host-based software agents.

The KBX5000 reduces the total cost of data protection and management by taking into consideration the value of different types of data and the associated requirements for data accessibility, performance, availability and protection. The KBX5000's intelligent features specifically address key customer pain points related to data migration and replication, recovery, storage utilization, and high cost of bandwidth and storage management. Utilizing the Cisco MDS 9000 Series SANTap Service ("SANTap") the KBX5000 can be deployed out-of-band (outside the data path) and *without a host agent*, since SANTap provides a *reliable copy* of storage *write* operations. SANTap functionality is enabled through the Storage Services Module (SSM) linecard which can be inserted into any modular switch within the Cisco MDS 9000 family of Multilayer Intelligent storage switches.

IBM TotalStorage Proven™ program

KBX5000 Architecture with Cisco SSM

Storage applications can be delivered either on the host or initiator, on the storage or target, or inside a SAN attached appliance. A purpose-built appliance that is designed to provide a specific storage application such as replication offers the benefit of supporting heterogeneous storage while minimizing the impact to hosts, applications, or array performance. Long distance data replication is uniquely suited for this architecture, since host and storage are relieved from the burden of managing the data movements across the WAN and dealing with complex data consistency issues inherent in cross-site data replication. An appliance placed in the SAN and WAN junction will have to be connected either in-band (between host and storage) or out-of-band, with the aid of a host agent. Both approaches can have obvious drawbacks: the in-band approach has the potential of compromising SAN performance, integrity, and availability and can be very disruptive to deploy; the out-of-band deployment removes these drawbacks, but requires installation of a driver in the host, potentially adding complexity to the solution's deployment.

The Cisco MDS 9000 Series SANTap Service eliminates the need for host agents, enabling a simplified, agent-less implementation of the Kashya KBX5000 Data Replication Appliance. This out-of-band appliance approach offers an optimized architecture for data replication that protects existing investments in storage arrays with no host footprint and delivers high performance bi-directional data replication between SANs across any distance, without any impact to host and array performance. With ample processing, and utilizing native SAN and WAN interface, the KBX5000 appliance efficiently replicates data across multiple (homogeneous or heterogeneous) arrays without the need for protocol converters or edge connect devices.

SANTap Benefits for Data Replication

- Seamless deployment of Kashya KBX5000 Data Replication Appliance
KBX5000 appliance can be deployed seamlessly without any disruption. The SANTap architecture eliminates the need for host side agents which further simplifies the deployment.
- No disruption of the Primary I/O from the server to the storage array
 - KBX5000 design takes advantage of SANTap to eliminate the risk of impacting the availability & performance of deployed applications.
- Deployment flexibility & investment protection
 - KBX5000 data replication services can be provided to all the existing servers and storage in the SAN, irrespective of the operating systems or array types. This allows customers to get more out of the existing storage and server infrastructure investments.

IBM TotalStorage Proven™ program

- On-demand storage services
 - KBX5000 data replication services can be provisioned on-demand without any application downtime for any server/storage connected to any port of a storage network.
- Unlimited scalability, no performance bottlenecks
 - A single SSM line card provides 320,000 IOPs performance and 20Gbps throughput. Moreover SANTap has been implemented in a distributed architecture that enables multiple SSMs on a storage network to provide the SANTap services. Coupled with the linear scalability of data replication appliances, this means that customers are no longer constrained by the performance limitations of using host CPU cycles and in-band appliances.

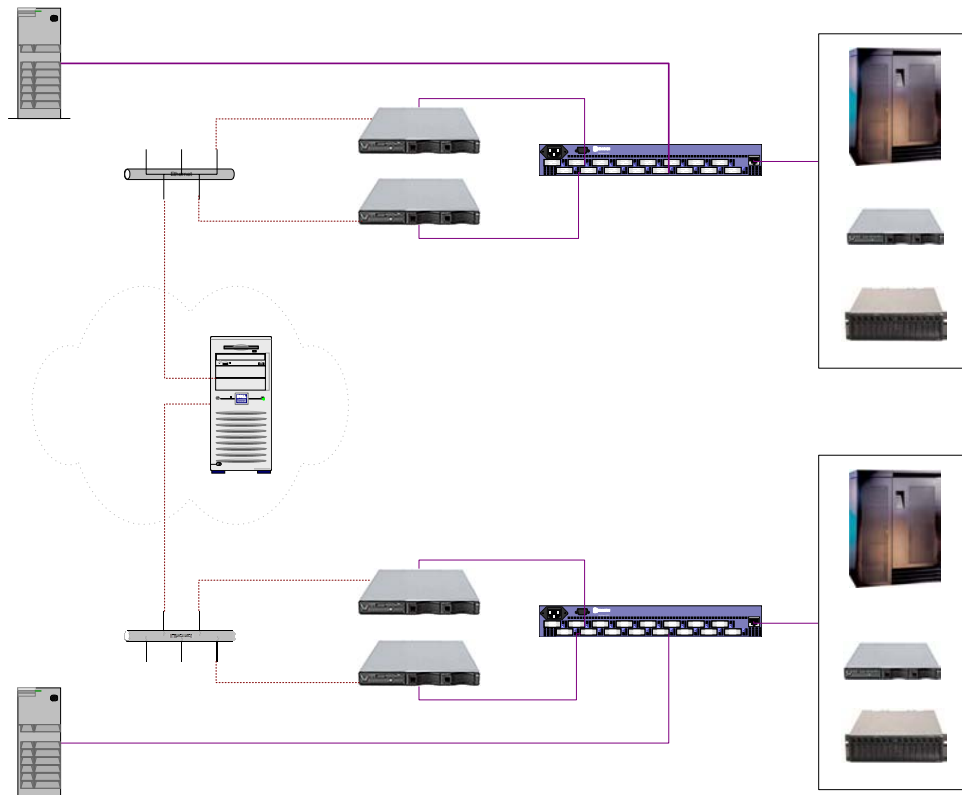
TSP test Configuration

The following Configurations were tested:

- a) Replication from DS4000 to DS4000
- b) Replication from DS4000 to DS4000 using SVC on both sides
- c) Replication from DS4000 to DS4000 using SVC on one side

Note: While the DS6000/DS8000 is listed in the test plan, the actual validation on that system has been deferred until the IIC-Petach Tikva receives its DS6000 or DS8000 system.

Test Scenario



IBM TotalStorage Proven™ program

Testing level

3. Testing level achieved: **Comprehensive**

- Standard: The standard test consists of elements like install, configuration, load, exercise I/O, and backup/restore testing.
- Comprehensive: Comprehensive testing would include the standard testing in addition to a much higher level of integration and failure testing. In either case, these tests are customized for the specific product(s) being tested, and in consultation with the participant.
- The level is determined by IBM based on the test plan and results.

Test Configuration

1. Software used: KBX5000 proprietary SW
2. Release level(s): 2.1

Kashya Support

7x24 Customer Support

To contact our support team, please e-mail us at support@kashya.com or call us at:

1-866-KASHYA1 (1-866-527-4921) (Option 2).

This product information sheet was prepared by and/or on behalf of Kashya. IBM is not the author of this product information sheet, and any reproduction, redistribution or republication of such sheets by IBM is not intended, nor should be deemed, to be an endorsement, recommendation or warranty of the non-IBM products described herein. For information concerning IBM's products and services, please visit www.ibm.com.