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FREQUENTLY ASKED QUESTIONS (FAQ):

Network Storage Server (NSS) 6.0

1. What is FalconStor® Network Storage Server (NSS)?

FalconStor NSS is a TOTALLY Open™ storage solution that administrators can use to more efficiently and cost-effectively provision and manage their storage resources across the entire organization. FalconStor NSS is available as turnkey storage appliances, gateway appliances, and as standalone software (software appliance kit) that allows you to build your own appliance/server.

2. Why do I need FalconStor NSS?

Storage administrators face many challenges in managing their storage environment. With the explosive growth of data from database applications, mail applications, and office automation applications, they are finding it impossible to keep up with storage demands and manage environments efficiently and cost-effectively. Additionally, they are challenged to get the most return on investment (ROI) on their storage device purchases.

On the business side, IT organizations need to increase staff productivity and focus more resources on helping “grow the business” versus “running the business”. Many organizations manage and support a wide variety of disparate data protection solutions, many of which don't integrate with each other, causing unnecessary pain and resource drain, as well as additional costs. Maximizing storage utilization is critical to eliminating unnecessary storage devices and expenditures.

3. How can FalconStor NSS help us overcome storage challenges?

FalconStor NSS helps maximize storage utilization, reduce overall storage costs, and increase staff productivity. IT organizations can significantly increase productivity while leveraging existing storage investments, reducing total cost of ownership (TCO). FalconStor NSS empowers organizations by offering centralized storage management and improving performance, provisioning, and utilization through virtualization.

4. What are the key distinguishing features of FalconStor NSS, and how will they help me manage my SAN storage?

> **TOTALLY Open architecture:** FalconStor NSS runs on Linux, an open-source operating system. It supports a wide range of industry-standard hardware and software and can scale to manage large, heterogeneous storage environments. NSS provisions storage for database, email, and file server systems from market leaders including Microsoft, Oracle, IBM, and Sybase. NSS supports server virtualization solutions from top solution providers including VMware, Virtual Iron, and Citrix, and is certified to work with top enterprise management software solutions from BMC, CA, HP, and Tivoli. This flexibility and broad support enables easy integration with an existing infrastructure without disrupting operations and without the vendor lock-in often associated with other providers.

- > **Storage virtualization:** Allows FalconStor NSS administrators to virtualize physical storage for ease of provisioning and management, and to aid in “green” computing by using less physical space and utilities.
- > **Thin Provisioning:** Allows provisioning of virtual storage that represents a higher capacity than is physically available. Physical storage is automatically allocated only when needed. This enables more efficient storage utilization. Thin Provisioning may be applied to primary storage, replica storage (at the disaster recovery [DR] site), and mirrored storage.
- > **TimeMark® snapshots:** Enable the creation of periodic, scheduled, or on-demand point-in-time delta snapshot copies of data volumes. These delta snapshots contain only changed data and as such use minimal disk storage space. Up to 255 delta snapshots can be maintained per volume.
- > **TimeView® images:** TimeMark technology includes the TimeView feature, which creates an accessible, mountable delta snapshot image that enables administrators to freely create multiple and instantaneous virtual copies of an active data set. The data set and/or replica copies can then be assigned to multiple application servers with read/write access for concurrent, independent processing, all while the original data set is actively being accessed/updated by the primary application server.
- > **Replication option:** Used to replicate primary storage via IP to secondary storage, whether onsite or offsite. It uses MicroScan™, which is a FalconStor patented data deduplication technology that eliminates exaggerated block-level changes due to inefficiencies at the application and file system layer. As a result, only real changes at the granularity of disk-sector level (512-byte) are transferred. The MicroScan feature significantly reduces WAN bandwidth utilization and costs, making offsite DR technically and financially feasible for organizations of all sizes. Replication also includes built-in data compression and encryption.
- > **Application-aware Snapshot Agents:** Ensure full protection for active databases such as Microsoft SQL Server, Oracle, Sybase, and DB2, and messaging applications like Microsoft Exchange and Lotus Notes. Complete data and transactional integrity is attained through a robust and automated process that safely and reliably takes snapshots of databases for point-in-time copy purposes and DR. Snapshot Agents work seamlessly with FalconStor Replication and TimeMark options. A group snapshot feature ensures transactional integrity of databases across multiple storage volumes.
- > **Mirroring:** FalconStor Synchronous Mirroring provides block-level data mirroring across any disk system regardless of vendor/brand, disk type or data interface (Fibre Channel [FC], iSCSI, InfiniBand). Data can be synchronized to a second storage device independent of the servers involved. There is no need for OS-specific host based tools. Once the mirror is online, all future data is written simultaneously to both the primary volume and mirror.

5. What are the components of the FalconStor NSS solution?

- > **NSS Server:** Provides storage provisioning, virtualization, and management services. The NSS Server also provides snapshots and mirroring.
- > **NSS/IPStor® Console:** Comprehensive, graphical administration tool to add/configure clients, set properties, and manage all SAN-attached storage.
- > **SAN Disk Manager:** Easy-to-use graphical administration tool designed for smaller organizations with limited IT resources. Provides much of the same functionality as the IPStor Console.

6. What storage vendors does FalconStor NSS support?

FalconStor NSS supports the widest range of disk arrays including those from:

- > Adaptec
- > Compellent
- > EMC
- > Hitachi
- > HP
- > IBM
- > Fujitsu
- > NEC
- > StorageTek
- > Sun

A complete Certification Matrix can be found on www.falconstor.com under "Support & Services."

7. What connection protocols does FalconStor NSS support?

FalconStor NSS supports a variety of protocols such as FC, iSCSI, and InfiniBand to deliver unparalleled storage performance across your business.

8. How many FalconStor NSS servers can I manage from one console?

As many as needed. The FalconStor NSS/IPStor Console can manage multiple NSS appliances, either individually or in groups, and allows administrators to perform comprehensive management tasks including:

- > Create virtual volumes
- > Assign volumes to specific clients
- > Connect to existing SAN volumes
- > Create mirrors between volumes
- > Set TimeMark snapshot schedules and policies
- > Set up replication and policies between NSS devices
- > Set up connections to external storage devices (gateway models)

9. If I already have volumes created on my SAN, can I still use FalconStor NSS?

Yes. Through the Storage Service Enabler function, you can include existing data volumes into the NSS management scheme in order to take advantage of data services such as snapshots and replication. The existing data volumes are not changed in any way.

10. What kind of reports can I get with FalconStor NSS?

FalconStor NSS includes a number of preconfigured reports that cover a wide range of information. For example, reports are available for data throughput, disk utilization, replication status and performance, physical configuration information, and disk resource distribution.

Reports can be saved in various formats: Comma delimited (.csv), tab delimited (.txt) text, Microsoft Excel spreadsheet (.xls), PDF (.pdf), or HTML (.html), and sent via email. Each report can be created for a specific server or for multiple servers in a group, and can be scheduled to run at regular intervals.

11. I want to upgrade my current disk array for another with larger capacity or more efficient power utilization. Can FalconStor NSS help me?

Yes. FalconStor NSS provides simple mirroring as a simple way to migrate data in a heterogeneous storage environment via a SAN infrastructure. With NSS, downtime is kept to a minimum when migrating data from existing storage to a newer disk array. Real-time migration is done through synchronous mirroring from the primary storage to the new storage device. This solution provides an exact replica of the primary storage while maintaining access to the data.

12. My databases require very large volumes. How large can a single volume be using FalconStor NSS?

FalconStor NSS supports virtual and physical LUNs up to 16TB.

13. What is the position of FalconStor NSS in the marketplace?

FalconStor NSS is a massively scalable solution designed to meet the needs of small-to-medium businesses (SMBs) as well as large enterprise organizations. FalconStor NSS storage appliances offer cost-effective self-protecting iSCSI storage for SMBs. For large enterprises, NSS gateway appliances and software appliance kits (SAKs) offer storage virtualization, provisioning, and centralized management for heterogeneous environments. Geographically distributed organizations can use FalconStor NSS storage appliances in remote/branch offices and use gateway appliances or SAKs at the data center to centralize and virtualize storage across the SAN.

14. How can we purchase FalconStor NSS?

FalconStor NSS is available through system integrators and value added resellers (VARs) around the world. Because FalconStor NSS is available in a variety of formats, prices vary.

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