Leverage the benefits from Microsoft virtualization technology

The Microsoft Hyper-V certified products from QNAP enable fast integration and deployments into Microsoft clustered environment and are able to operate reliably with advanced features such as live migration, high availability, network failover, and Clustered Shared Volume. The features help the customers to create highly scalable, manageable, and agile virtual infrastructure.

Deploy the virtualization environment with flexibility

QNAP Turbo NAS can be utilized as iSCSI storage in Microsoft Hyper-V environment. It allows file sharing across Windows, Mac, Linux, and UNIX platforms at the same time. The iSCSI thin-provisioning offers great flexibility in the storage capacity planning and allocation when creating iSCSI LUNs from the beginning. With QNAP NAS, LUNs can be mapped to, unmapped from, and switched among different iSCSI targets.

Improve work continuity with high availability QNAP shared storage

QNAP Turbo NAS protects all your virtual machines with RAID 1, 5, 6, 10 with hot spare and RAID recovery. The multiple gigabit LAN design (2 to 8) load balancing and failover to sustain any single point of failure, keeping the connection alive between the guest OSes running on the Hyper-V hosts and the QNAP NAS.
**Key Features**

- Supports iSCSI Deployments
- Supports Windows Server 2008 Failover Cluster
- Supports Cluster Shared Volumes
- Multiple Gigabit LAN Design for Continuous Services and Performance Gain
- Segment-leading iSCSI Features
- 10 Gigabit Ready
- Secure Data Protection
- High Ease-of-Use
- Supports Active Directory
- Online LUN Expansion
- Online LUN Snapshot & Backup

**Application Scenario**

- Primary Storage for Microsoft Hyper-V
- Shared Storage for Virtualized Testing Environment
- Backup Storage for Existing Virtualization Environment

**Primary Storage for Microsoft Hyper-V**

QNAP Turbo NAS accelerates the setup of the virtualization infrastructure. Users can deploy the Turbo NAS as an iSCSI storage for the Microsoft Hyper-V environment. Using Turbo NAS for Hyper-V, they can take benefit from QNAP iSCSI features and a High Availability environment for the virtual machines.

**Shared Storage for Virtualized Testing Environment**

In the software development process, R&D and QA teams often require different environments and operating systems (Windows, Mac, Linux) to run a wide variety of applications. To reduce the costs for server setup and increase the work efficiency, virtualization environment is established. QNAP Turbo NAS is the perfect shared storage among different OS in Microsoft Hyper-V environment.

**Backup Storage for Existing Virtualization Environment**

If a Hyper-V environment with a primary storage has already been deployed, additional storage may be needed for data backup, archiving, or extended storage. QNAP Turbo NAS can be seamlessly integrated to the Hyper-V environment. Users can select from 2 to 16-bay Turbo NAS models (tower or rackmount) with up to 64TB storage capacity according to the storage requirements. QNAP NAS supports Microsoft Data Protection to back up virtual machines from the primary storage to the NAS. It also works well with third-party backup software such as Symantec Backup Exec to protect your virtualization environment from primary storage failure.
Advanced RAID Management to Protect Virtual Machines

The Turbo NAS offers RAID 0, 1, 5, 5+spare, 6, 6+spare, 10, 10+spare, single, and JBOD disk configurations. It supports hot-swap design that a failed member drive of a RAID configuration (RAID 1 or above only) can be replaced by hot swapping without turning off the NAS.

Online RAID Level Migration
Users upgrade the disk configuration to higher RAID level with the data retained without turning off the NAS.

Online RAID Capacity Expansion
The storage capacity of a RAID configuration can be expanded by hard drives replacement. All the data will be kept and seamlessly moved to the newly installed hard disk drives without turning off the NAS.

10 GbE Ready and up to 8 Gigabit LAN for Continuous Services and Performance Gain

The TS-x79 Series Turbo NAS is 10 GbE ready and supports up to 8 Gigabit LAN ports with multiple bonding modes: Balance-rr (Round-Robin), Active Backup, Balance XOR, Broadcast, IEEE 802.3ad, Balance-TLB (Transmit Load Balancing), and Balance-ALB (Adaptive Load Balancing). These modes enable continuous services and increase the bandwidth between the Hyper-V hosts and the QNAP storage.

Segment-leading iSCSI Features

Online iSCSI LUN Snapshot & Backup
The Turbo NAS supports point-in-time LUN snapshot to ensure data consistency between the backup contents and the original copy. Users can also back up the iSCSI LUN to and restore the copies from various storage destinations, including Windows shared folders via SMB/CIFS, Linux shared folders via NFS, or simply local shared folders on the NAS.

Online LUN Expansion & Multiple LUNs per Target
Expand LUNs (Logical Unit Number) on the Turbo NAS without losing the data! Flexibly map to, unmap from and switch among different iSCSI targets for easy management of the storage; LUN can be expanded online.

CHAP and LUN Masking
Designed with CHAP authentication and LUN masking, the advanced ACL (Access Control List) offers the capability to block unauthorized access from the initiators.

SPC-3 Persistent Reservation Support
The built-in iSCSI service supports enterprise-level features such as SPC-3 persistent reservation for clustering in Windows Server 2008.

Advanced MPIO and MC/S Support
With the support of MPIO (Multipath Input Output) and MC/S (Multiple Connections per Session) on the Turbo NAS, users can connect to the QNAP iSCSI targets using two or more network interfaces from the server with failover and load balancing. Furthermore, transmission is achieved maximizing performance.
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Ease of Management

Comprehensive Event Log System and Instant Notification
Detailed logs of file-level data access to the NAS via Samba, iSCSI, FTP, AFP, HTTP, HTTPS, Telnet, and SSH; and networking services accessed by online users are all recorded. Moreover, users can configure the SMTP server, SMSC server, and instant messaging settings on the NAS in order to receive instant system warning or error messages by email, SMS, and Windows Live Messenger.

AJAX-based Management Interface
The Turbo NAS provides an AJAX-based management interface that allows convenient system configuration by a web browser. Less technical-savvy users can easily configure the advanced features with simple wizards. The NAS supports Microsoft Internet Explorer, Safari (version 3 & 4), Firefox (version 3 & 4), and Google Chrome.

QNAP® Storage Products for Microsoft Virtualization

Tower Models

- TS-269 Pro
- TS-259 Pro+
- TS-239 Pro II+
- TS-469 Pro
- TS-459 Pro II
- TS-459 Pro+
- TS-439 Pro II+
- TS-569 Pro
- TS-559 Pro II
- TS-559 Pro+
- TS-669 Pro
- TS-659 Pro II
- TS-659 Pro+
- TS-869 Pro
- TS-859 Pro+
- TS-879 Pro
- TS-1079 Pro

Rackmount Models

- TS-459U-SP+
- TS-459U-SP+ RP
- TS-459U-SP+ RP+ RP
- TS-859U-RP+ RP
- TS-EC879U-RP
- TS-879U-RP
- TS-EC1679U-RP
- TS-1679U-RP

For more information on QNAP Turbo NAS, please visit: http://www.qnap.com/

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