

HPE NonStop VTR

Entry-level backup and restore

HPE NonStop Virtual Tape Repository (VTR) provides a simple and affordable physical tape replacement for NonStop backups, reducing and simplifying operations.



What is VTR?

VTR is a simple product containing all the necessary components to provide the customer with a tape drive replacement solution. Tailored to small data centers, it supports one or two NonStop systems and can replicate virtual tape images between VTR units in the same or different data centers.

The VTR emulates tape devices to the HPE NonStop system, encapsulates virtual tape volume contents as files, and then writes those files in a compressed format to its internal disk storage—or reads them back in case of a restore. It does this fully automatically and transparently, eliminating the need for operator actions.

In a world that never stops, failure—for even a minute—is simply not an option. With HPE NonStop fault-tolerant computing, you can deliver unbroken access to information and services with an integrated solution stack that has been uniquely designed for continuous availability. The fully virtualized, integrated stack of hardware, operating system, database, software, and applications provides the foundation that HPE NonStop customers rely on for their mission-critical applications.

NonStop customers can enhance their backup and TMF protection coverage by use of virtual tape instead of physical tape handling. Fully automated and transparent backups mean that they can be done more easily and often—improving protection coverage. With this automation, operations staff can be freed up for more valuable tasks.

Note: For larger data centers, with more complex requirements and environments, and for use with a range of storage types, Hewlett Packard Enterprise offers the NonStop BackBox Virtual Tape Controller (VTC) product.

HPE NonStop VTR architecture

A VTR unit is managed as a single domain that controls access to a set of virtual tapes across one or two local NonStop systems. VTR Domain Manager software¹ is installed on the HPE NonStop system designated to control the domain, along with its associated media catalog. VTR Extractor software is installed on each HPE NonStop system in the domain. VTRs connect via Fibre Channel (FC) to each HPE NonStop system and provide emulation of up to eight tape drives per domain (four on each of two systems or eight on a single system).

¹ HPE NonStop VTR Domain Manager software is used with licensed VTR units at no additional charge.

Fault tolerance

Deploying HPE NonStop VTR in redundant pairs offers significant benefits, such as:

- During normal operation, the VTR Domain Manager load balances jobs across both VTRs, giving twice the throughput from each HPE NonStop system.
- Upon a single VTR failure, restarted jobs are re-routed through the remaining VTR.
- Continuous operation is possible through maintenance or software updates to each VTR.
- Separate VTR domains for each of two NonStop systems can be used so that each NonStop system is not dependent on the other.

Virtual tape storage is protected by VTR's RAID 6 internal disk storage and can be further protected using its data replication capability to maintain copies on a corresponding local or remote VTR.

Where disaster recovery capabilities are required, a second VTR can be located in a remote data center and the contents of the primary data center VTR replicated to it. The remote VTR storage is treated as read-only until a production system failure requires it to become the primary.

Virtual tape storage features

NonStop system connections

HPE Integrity NonStop X systems and HPE Integrity NonStop i systems running the J- and H-series NonStop OSs are supported by HPE NonStop VTR. Connection to all NonStop systems is via FC at the highest speed supported by the system model.

Designed for reliability and availability

Elimination of hard disk drive (HDD) moving parts by use of an SSD system drive contributes to the VTR's high reliability, along with redundant power connections and flash-based write cache (FBWC)-based storage controller cache.

Internal disk storage

NonStop VTR is available as two models with usable capacities of 12 or 24 TB. These models both use RAID 6 technology to be tolerant of up to two disk drive failures without endangering virtual tape data. For a further level of protection, one of the following is also recommended:

- Replication of virtual tape images to a VTR at a disaster recovery site
- Bidirectional replication of virtual tape images between two VTRs in the same site

Efficient storage management

NonStop-resident VTR software cleans up unnecessary virtual tape image storage by deleting the associated VTR-resident files after the volumes expire in NonStop DSM/TC or TMF catalogs, ensuring storage capacity for new backups is maximized.

One-step tape creation

Using the NonStop VTR user interface, multiple virtual tape volumes can be created, labeled, and cataloged with a single, simple action.

Physical tape support options

Current model physical tape drive attachment

Current industry-standard model tape drives, including the latest HPE StoreEver Linear Tape-Open (LTO) Ultrium generation, can be connected to the VTR via an optional Serial Attached SCSI (SAS) interface. This permits import of physical tape content to virtual tape storage, or export of virtual tapes to HPE NonStop readable physical media.

Migration from physical tape

Contents of existing physical tape cartridges can be easily migrated to VTR, either via an existing tape drive attached to a NonStop system or via a current model tape drive directly attached to a VTR. Existing volume contents can also be copied to VTR via the NonStop system without disturbing catalog contents. The VTR user interface can be used to initiate direct "virtualization" of tapes from a VTR-attached drive.

Migration from HPE Virtual TapeServer (VTS)

Contents of existing tape volumes on an HPE VTS unit can also be migrated to VTR via a NonStop system using the included BackClone software.

Technical specifications



Internal storage—12 TB
2U server with self-contained disk storage for use in small data centers



Internal Storage—24 TB
2U server with self-contained disk storage for use in small data centers

Server	HPE ProLiant DL180 Gen9 Server	HPE ProLiant DL180 Gen9 Server
Processor	1 x Intel® Xeon® E5-2620 v3 2.4 GHz six-core	1 x Intel Xeon E5-2620 v3 2.4 GHz six-core
Memory	1 x 16 GB single rank DDR4-2133	1 x 16 GB single rank DDR4-2133
Storage controller	HPE Smart Array P440/4G FIO Controller	HPE Smart Array P440/4G FIO Controller
System disk drives	1 x 120 GB 6G SATA LFF SSD	1 x 120 GB 6G SATA LFF SSD
Internal data storage	6 x 3 TB 7.2K rpm 6G SAS LFF HDD RAID 6 array Usable capacity of 12 TB (10.9 TiB)	6 x 6 TB 7.2K rpm 6G SAS LFF HDD RAID 6 array Usable capacity of 24 TB (21.8 TiB)
External data storage	None	None
Enterprise backup subsystem products supported	None	None
Network interfaces	Flexible LAN-on-Motherboard (LOM)—2 x 1GbE ports Dedicated 1GbE Integrated Lights-Out (iLO) port	Flexible LOM—2 x 1GbE ports Dedicated 1GbE iLO port
HPE NonStop host models supported	HPE Integrity NonStop X and HPE Integrity NonStop i systems running the J- and H-series NonStop OS	HPE Integrity NonStop X and HPE Integrity NonStop i systems running the J- and H-series NonStop OS
Number of HPE NonStop hosts connectable	One or two	One or two
Max. number of VTR domains	One	One
Number of virtual tape drives	Up to 8 total (4 per NonStop system if 2 systems are connected)	Up to 8 total (4 per NonStop system if 2 systems are connected)
Power requirements (at 115 volts AC)	381 W, 154 W idle 382 VA at 115 VAC	357 W, 136 W idle 358 VA at 115 VAC

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Support when and how you need it

HPE Technology Services help build an infrastructure that is reliable, highly available, and rooted in best practices. We offer a support experience that is proactive, personalized, and simplified—delivering support when and how you need it.

Hewlett Packard Enterprise recommends the following services for HPE NonStop systems:

HPE Critical Service (CS)—high-performance reactive and proactive support designed to help minimize downtime. It offers an assigned support team, which includes an account support manager (ASM). This service offers access to the HPE Global Mission-Critical Solution Center, 24x7 hardware and software support, six-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.

HPE Proactive 24—provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with four-hour onsite response, 24x7 software support with two-hour response, and flexible call submittal.

HPE Installation and Startup Services—provides efficient and effective deployment of HPE hardware components.

For more information, visit hpe.com/services/nonstop.

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