

BACKBOX

Versatile, reliable backup and restore

Integrating BackBox Virtual Tape Controllers from ETI-NET with HPE NonStop systems enables data backups and restores using an architecture that reflects HPE NonStop principles: fault-tolerance and linear expandability.

What is BackBox VTC?

The main functions of BackBox are to emulate virtual tape devices to the HPE NonStop systems, to encapsulate the content of any written virtual tape volume as pair of files, and then to write the file to the appropriate storage target—or read/access it back, in the case of a restore. The entire process is run in a context-free environment.

In a world of constant data change, storage failure—for even a minute—is simply not an option. HPE NonStop fault-tolerant computing delivers 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 provide the foundation that HPE NonStop customers rely on for their mission-critical applications.

You can add the benefits of virtual tape drives to the HPE NonStop backup and restore operations. BackBox Virtual Tape Controller runs on a Windows server and emulates several physical tape devices per connection in order to support high throughput parallel backup or restore streams. The HPE NonStop-resident BackBox software component integrates HPE backup utilities and tape catalog systems the BackBox VTC. BackBox VTC acts as context-free data pipes to the storage destination of your choice.

This fully integrated solution enables backups and restores from HPE NonStop source systems to a range of storage targets using an architecture that reflects HPE NonStop ground rules: fault-tolerance and linear expandability.

BackBox architecture

A BackBox domain can be specific to a single system or common to a group of systems. BackBox Domain Manager software is installed, along with its associated media catalog, on the specific HPE NonStop system designated to control the domain.

The BackBox Extractor software is installed on every HPE NonStop system in the domain. BackBox VTCs connect via Fiber Channel (FC) or via iSCSI to each HPE NonStop system and provide emulation of a number of tape drives per connection. The BackBox VTC is also supporting the iSCSI connection. The iSCSI can be used to connect to either a physical NonStop or a virtualized NonStop.

Virtual tape media files can be sent to storage according to their use, retention, replication, and archiving requirements. Data deduplication storage products are the right choice where multiple data copies with a low rate of changes must be retained.

Virtualized BackBox Software

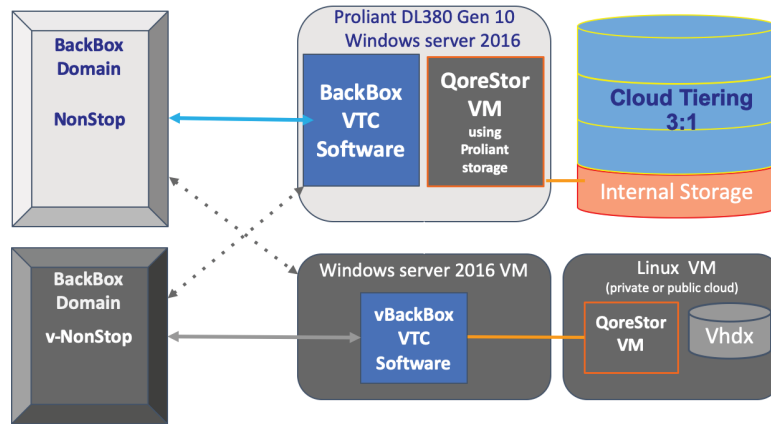
BackBox software can be virtualized and can run in any enterprise virtual environment, such as VMWare, KVM, etc. It is designed to meet the backup needs of the HPE Virtualized NonStop (vNS).

BackBox Dedupe Software option

Powered by QoreStor

BackBox Dedupe SW, Powered by QoreStor™ is a software-defined secondary storage platform that provides various options, such as deduplication, replication, encryption, and cloud tiering. With this solution, the platform reduces storage requirements and costs. It increases security and availability by replicating quickly and securely to another BackBox VTC or to the cloud. By leveraging the cloud service capabilities for archiving and disaster recovery, HPE NonStop BackBox™ takes advantage of the simplicity, security, and redundancy of public or private cloud platform.

HPE NonStop BackBox Dedupe SW - Secondary Storage



Fault tolerance

Deploying BackBox VTC in redundant pairs offers significant benefits, such as:

- During normal operation, the BackBox Domain Manager load-balances jobs across all BackBox VTCs, resulting in twice the bandwidth from each HPE NonStop system to storage
- Upon a single BackBox VTC failure, restarted jobs are re-routed through remaining VTCs
- Continuous operation is possible through maintenance or software updates

BackBox Dedupe SW is integrated with the Virtual Tape Controller (VTC)

The BackBox Dedupe Software is running on the same server as the VTC. This allows the customer to use all the power of the VTC server and to minimize racking space.

Cloud Tier

Move and recover data from cloud storage quickly and easily with this policy-driven, seamless cloud extension.

Remote replication for disaster recovery

Replicate unique data to a remote site, reduce replication windows by 10 to 15 times, reduce network bandwidth requirements by 85 percent, and shorten overall replication time.

Back up to the cloud

Back up directly to the cloud over your WAN, but with LAN-like speeds through source-side deduplication, whereas only the data changes are transmitted. Achieve recovery point objectives (RPOs) that are typical of on-premises deployments, even over the WAN.

Data security

Meet security requirements with built-in encryption at rest and compliant with FIPS 140-2.

Encryption at rest uses industry-standard 256-bit Advanced Encryption Standard (AES) keys

Physical tape support options

Enterprise backup systems

If the enterprise backup content needs to be consolidated across physical tape silos, BackBox VTC can back up or archive virtual tape images to an EBS server.

Import/export support options

Current model tape drives—including the latest LTO tape drives—can be connected to BackBox VTC via SAS or FC. This type of connection allows the import of any physical tape content to virtual tape storage and the export of virtual tapes to HPE NonStop-readable physical media.

Legacy tape drives can also be used.

Encryption

Compatibility with LTO tape encryption formats

With the encryption option, the specified categories of virtual tape volumes are encrypted by the BackBox VTC's tape emulator, as data is received from an HPE NonStop host. Encryption conforms to the IEEE P1619.1 standard for LTO tape encryption. This feature requires the use of Utimaco Enterprise Secure Key Manager (ESKM) or a KMIP compatible key manager to generate and store encryption keys associated with virtual media.

You can also use HPE NonStop SecureTape to encrypt the data that will be backed up using the BackBox VTC. Since SecureTape manages the encryption keys through its own built-in key manager, there is no need for a separate external key manager device.

It is important to note that encrypting virtual data makes it unsuitable for data deduplication, so storage of encrypted virtual tape volumes in HPE StoreOnce appliances will be inefficient. StoreOnce's own encryption option should be used in such cases.

Application/Software

BackBox User Interface allows wide-range interaction with the back-end storage system. The interface is generally installed as images (ISO) on the enterprise storage system in order to ensure efficient management of virtual data backup and recovery.

Hardware features

The third-generation HPE NonStop VTC features a built-in read-only copy of the VTC factory image, which means a quick restore of the VTC in case of a catastrophic server failure.

Server Monitoring

The software events are logged into NonStop EMS, and the hardware events can be routed via HPE's Insight Remote Support (Insight RS) system. The system automatically opens support cases in order to replace or repair the failing component(s). This includes ProLiant server components, as well as disk drives in JBOD shelves.

Technical specifications for virtualized BackBox software

Maximum number of vNS systems supported	12
Maximum number of tape devices supported	12
Minimum software version	EH4.09
Number of cores	2 (unpinned)

Suggested Technical specifications for BackBox VTCs



Server	HPE ProLiant DL380 Gen10
Processor	2 x Intel® Xeon® -Silver 4110 2.1 GHz, 8-core
Memory	64 GB
Storage controller	HPE Smart Array P816i-a SR Gen10 <i>Optional:</i> HPE Smart Array P408e-p SR Gen10
System disk drives	2 x HPE 960 GB 12G SSD, 10K rpm SFF
VTC server factory image	On internal SD card
Internal data storage	<i>Optional:</i> 24TB raw (16 TB usable) 48TB raw (32 TB usable) 72 TB raw (48 TB usable) 144 TB row (96 TB usable)
External data storage	<i>Optional:</i> Up to 2 JBOD enclosures (up to 144 TB raw storage per JBOD)
Other external data storage connectivity	SAN, via optional FC HBA. NAS storage solutions include HPE StoreOnce and other data deduplication products.
Network interfaces	4 x 1GbE ports 2 x 10GBASE-T ports <i>Optional</i> —up to four copper or optical 10GbE ports
Supported HPE NonStop servers	HPE Integrity NonStop X, HPE Virtualized NonStop, and HPE Integrity NonStop i systems running the J-series NonStop OS
Number of HPE NonStop hosts connected	Two standard, expandable to 4 or 6
Number of virtual tape drives	Up to 32 per FC connection. 4 to 12 is optimal, depending on the HPE NonStop system model
Server Management	HPE Integrated Lights Out (iLO 5) Advanced
Power requirements	100–120 VAC, 200–240 VAC 434W (294W at idle)