

# Mission-Critical Data Protection: How a Major Utility Authority Virtualized SAS Tape Backups

To integrate SAS tape storage into a virtualized environment, PNP Storage deployed the ATTO XstreamCORE 8100T intelligent bridge for a public utility. The 8100T uses iSCSI to allow SAS tape libraries to directly connect to all of the virtual machines over an Ethernet network. The utility now maintains full VM mobility and SLA compliance through a vendor-supported, high-performance backup architecture.

ATTO XstreamCORE® Intelligent Bridges, HPE Tape Libraries, and Archiware P5 Suite

## Background

PNP Storage, a premier solutions integrator in the Middle East, was commissioned by a regional Water & Electricity Authority to architect a critical backup infrastructure. The objective was to enable direct backups from a virtualized environment to an HPE tape storage system. However, the team faced a fundamental architectural hurdle: **virtual servers lack the native SAS connectivity required to mount physical tape drives.**

PCIe passthrough was an initial consideration as it allows a virtual machine to communicate directly with physical SAS hardware via a dedicated data path. However, this method is notoriously unreliable for tape storage. Such a 'hack' is not a viable path for environments with rigorous uptime requirements, as implementing passthrough would have:

- **Compromised High Availability:** Breaking live migration capabilities and directly impacting SLAs.
- **Stranded Resources:** Locking an entire HBA to a single VM, wasting scarce physical host resources.
- **Introduced Risk:** Defying industry best practices regarding hardware and software reliability.

The Authority required a production-ready, vendor-supported solution—not a workaround or an unsupported "DIY" hack.

## Outcomes

- **Seamless Virtual Integration:** Successfully bridged the gap between virtual servers and HPE tape storage, enabling production-ready backups without native SAS connectivity.
- **Uncompromised Mobility:** Unlike the restricted "passthrough" method, this solution preserved vMotion and multi-tenancy capabilities, keeping the virtual environment agile.
- **Zero-Disruption Deployment:** Rapid implementation was achieved without reconfiguring the core infrastructure or creating complex, isolated management silos.
- **Client Satisfaction:** The Water & Electricity Authority now utilizes a vendor-supported, flexible backup path that balances high performance with long-term cost-efficiency.

## The Solution

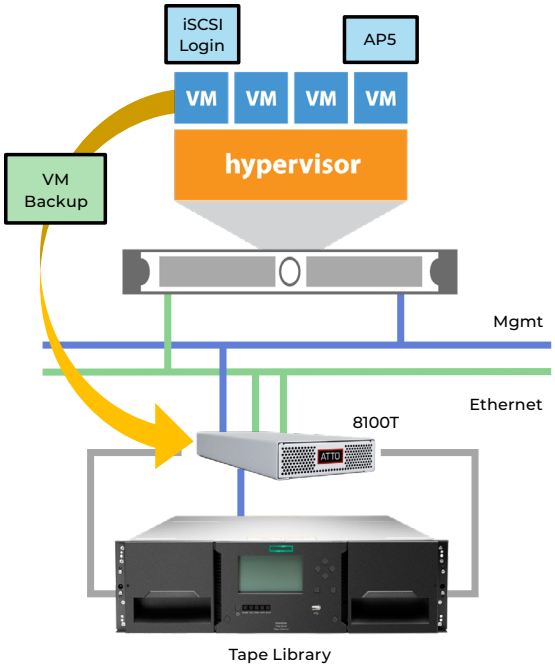
Conventional SAS tape architecture relies on dedicated physical resources and drivers to manage tape drives. In contrast, virtualized servers operate over network fabrics, creating a compatibility hurdle for backup administrators.

To solve this, a translation layer is required to encapsulate SAS commands into network block storage protocols. The ATTO XstreamCORE 8100T provides this exact functionality, seamlessly maintaining the SAS tape command set and streaming performance within a virtualized infrastructure.

## How It Works

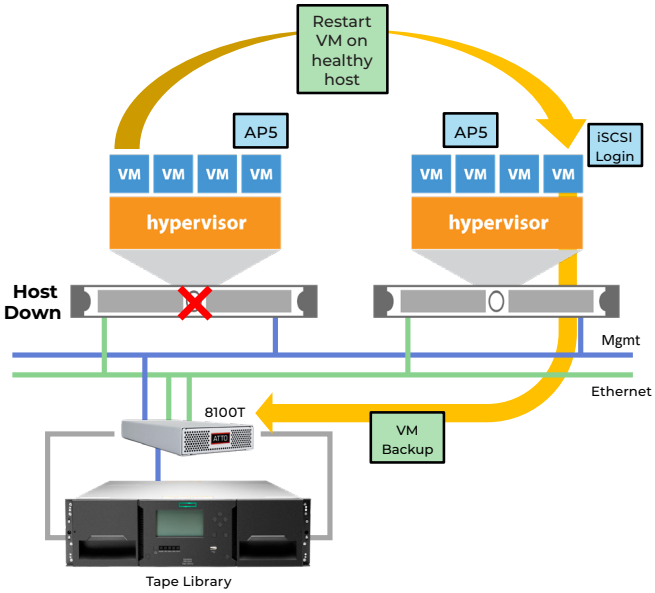
The HPE LTO SAS library connects to the 8100T using SAS cables. The 8100T simply presents the tape drives as iSCSI Targets to the VMs over the Ethernet network via dual 10GbE connections.

**VM Configuration and Access:** The virtual server mounts iSCSI LUNs via a software initiator. The backup ISV application successfully discovers the tape device and executes backup jobs as scheduled.




**AP5** - Archiware P5

The ATTO 8100T exposes tape drives as network-attached iSCSI targets, removing the limitations of hardware-locked SAS connections. This network-centric approach allows for seamless failover; if a VM goes down, a different VM on a healthy host can mount the drive and resume backups immediately.




The solution supports High Availability by hosting the tape library on the network fabric. If a host goes down, connection to the tape drives can be instantly established through a healthy host to ensure backup continuity.

"With ATTO, we shifted the challenge of enabling native SAS tape drives on a hypervisor to simply presenting tape over the network. In doing so, we didn't just solve the primary integration issue, but the customer also gained high availability and the flexibility to treat tape as a shared network resource. A very clean and simple integration that their team can manage without adding operational complexity."

**– Akash Jain, Sales & Technical Director, PNP Storage**

Founded in 2005, PNP Storage, based in Dubai, UAE, is a leading storage solutions provider serving enterprise and SMB customers across the Middle East and Gulf countries. Specializing in tape, hard drive, and flash technologies, PNP applies deep technical expertise to help hundreds of channel partners and end users solve everyday data challenges with practical, innovative solutions.

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