



ATTO XstreamCORE® ET 8200

ATTO XstreamCORE® intelligent Bridges add Fibre Channel or Ethernet connectivity to tape storage to provide remote connectivity, sharing and common services with minimal added latency.

Models include ATTO XstreamCORE FC 7550, FC 7600, ET 8200, ET 8200T.

### Technical Features

- Integrates with up to 16 tape drives per bridge
- Individually map drives to a host or multiple drives to multiple hosts
- ATTO eCORE offload processor virtualizes a common set of services and features
- ATTO SpeedWrite™ technology improves SAS tape write performance up to 20%
- ATTO Drive Map Director™ simplifies mapping and reduces maintenance costs for storage
- ATTO Data Mover technology improves storage performance while reducing compute, memory and network utilization
- Management capable through RS-232, USB, Ethernet or in-band

### FC 7550, FC 7600

- Four 16Gb (7550) or 32Gb (7600) Fibre Channel ports to four x4 12Gb mini-SAS connectors
- Adds less than four microseconds of latency

### ET 8200, ET 8200T

- Connects two 40 GbE ports to four X4 12Gb mini-SAS connectors
- Adds less than two microseconds of latency
- Uses iSER (iSCSI extensions for RDMA) for deterministic latency over Ethernet

## Offsite Archiving to Tape ATTO XstreamCORE® intelligent Bridges

### Data Backup

Backing up data remains one of the primary ways of protecting a company's digital assets from data loss, data corruption, and ransomware. Inevitably, a company will experience one of these issues. Protecting data via backup can avoid all manner of undesirable situations from loss of time and revenue to permanent loss of critical business data or digital assets.

### Add Speed and Flexibility to Backup Processes

ATTO XstreamCORE® intelligent Bridges act as external adapters providing connectivity and adding a common set of services and features to SAS tape devices. ATTO XstreamCORE eliminates the costs of up to two extra servers and the disk backup storage array as well as reduces the cost of managing data archiving.

With ATTO XstreamCORE intelligent bridges and exclusive ATTO SpeedWrite™ technology, users can archive directly to a remotely located tape drive and maintain sufficient speeds to meet customer's demanding backup windows.

While backup involves many different criteria, media type and location are the primary considerations. Media are usually of two types: large capacity hard drives in a JBOD or RAID configuration or tapes used with either a standalone tape drive or a tape library. When referring to location, the two types are onsite backup and offsite backup, each with its pros and cons.

#### Tape backup pros/cons:

Lowest cost per GB; zero electrical cost for data at rest; creates an 'air gap' for better protection against viruses and ransomware than using disks; generally slower backup and restore time than disk.

#### Disk backup pros/cons:

Faster backup and restore times; more costly than tape and more costly to keep running (electricity). Disk is more susceptible to cyber threats because it is always connected and on.

#### Onsite backup pros/cons:

quicker backup and restore times usually; no protection against on-site disruptions and disasters.

#### Offsite backup pro/cons:

Usually slower backup and restore times compared to onsite; protection against onsite disruptions and disasters.

Figure 1 represents a typical implementation of performing a backup to a remote site for disaster recovery. The primary site usually has at least one server that will back up the data from either primary storage or from dedicated onsite backup storage. These backups are usually directed to a remote site server which moves the data to the remote site backup disk storage.

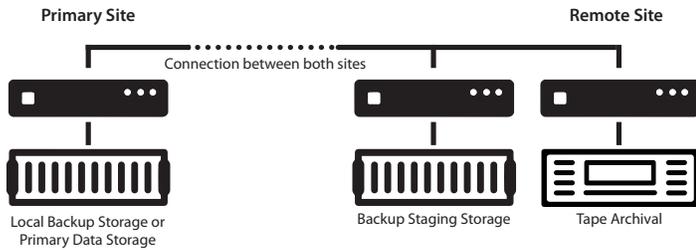


Figure 1 - Typical disaster recovery backup implementation.

This remote site disk storage can be accessed in case of an emergency at the primary site. However, the remote site backup storage is primarily used as a staging area to archive data to tape. The reason that data is backed up to disk storage at the remote site and not directly to the tape library is latency. As the distance between the two sites increase, there is more latency per packet. Tape drives are inherently single-threaded and thus can only handle a single stream of data at a time. Disk Storage can handle multiple streams at once which helps to mitigate the impact of latency from the distance between sites.

With disk-based backup at the remote site, multiple streams of data can be handled allowing some mitigation of latency caused by the distance.



Figure 2 - Single stream to tape.

In Figure 2, the primary site is sending data to be backed up directly to the tape library at the remote site. However, since tape drives are sequential and can only handle a single stream of data, the primary site has to wait until data stream A completes before it can send data stream B. The combination of only handling a single stream of data and the latency introduced by distance has a dramatic impact on tape performance. This is why you do not see solutions that archive directly to tape drives in remote sites.

The downside of such configurations illustrated in Figure 1 are the costs of the additional storage arrays as well as the additional servers. Also, the backup storage array needs to have enough capacity to perform a full backup of the data from the primary site which could add cost.

Then there are operational costs of maintaining this configuration like the need to stock spare disk drives and the payroll of admins who manage the servers. Some costs can be reduced by decreasing the number of servers.

Figure 3 illustrates how ATTO XstreamCORE with SpeedWrite allows more data to be processed, increasing overall throughput even at distances of 50km.



Figure 3 - More data with SpeedWrite.

Figure 4 shows how ATTO XstreamCORE intelligent bridges improve the setup represented in Figure 1.

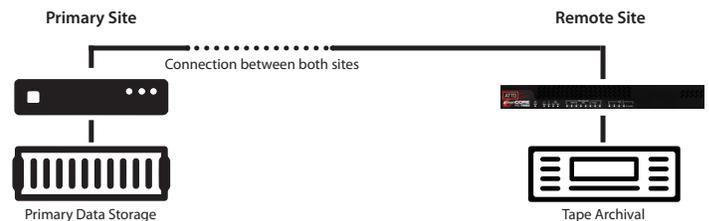


Figure 4 - Simplified disaster recovery backup implementation.

### Performance with and without ATTO SpeedWrite

2:1 Compression		Four LTO 8 Drive (MB/s)		Sixteen LTO 8 Drives (MB/s)	
Distance (km)	Distance Latency (µs)	No SpeedWrite	With SpeedWrite	No SpeedWrite	With SpeedWrite
5	16.7	1128	1566	4320	6000
10	33.3	1074	1492	4296	5967
50	166.7	779	1081	3114	4325

**ATTO SpeedWrite provides up to 40% better performance even over distances up to 50 km.**