



# ZX Enterprise-class NAS

## Preserve your data with business continuity

The ZX is ZFS enhanced and made easy as a clustered NAS and file server. The sub-systems provide you with high-performance data storage at a competitive cost/TB.

With the addition of our SAS-attached JBOD expansion chassis, capacities can easily reach over 5PB in each mounted volume. Small, medium and large workgroups will benefit from this strong on- or off-site data protection solution.

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[ZX Embedded Storage Head Unit](#)

[ZX Server with JBOD Expansion](#)

[ZX High-Availability Cluster](#)

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## Key Features & Benefits

### Data Acceleration

- ✓ Acceleration of random writes with write log (ZIL)
- ✓ Hybrid Read Cache with first level in RAM (ARC – Adaptive Replacement Cache) and second Read Cache level on an SSD or NVMe (L2ARC)
- ✓ High cache hit rate by using ARCs most recently used (MRU) and most frequently used (MFU) Read Cache algorithms
- ✓ Data re-silvering (rebuilding of used space)
- ✓ Compression and deduplication for improved performance

### Data Accessibility

- ✓ iSCSI, Fibre Channel (FC), NFS, SMB (CIFS)
- ✓ Use of Virtual IPs

### Data Availability

- ✓ High-availability Dual-Controller Clustering
- ✓ Active-Active and Active-Passive HA Cluster
- ✓ Dual Storage (Stretched) Metro HA Cluster and Common Storage Cluster architectures

### Data Integrity and Protection

- ✓ Data and metadata check-summing
- ✓ Self-healing to detect and correct silent data errors with Scrub utility
- ✓ Atomic Transaction Writes to keep data consistent
- ✓ Transactional copy-on-write I/O operations eliminate silent data corruption and data fragmentation
- ✓ Storing multiple copies of user data

### File System & Storage Virtualization

- ✓ ZFS file system using 128 bit data structures
- ✓ Pooled storage model
- ✓ Unlimited scalability with storage expansion during production
- ✓ Unlimited file and volume size

### Backup of everything

- ✓ Copies of all kinds of data are consistent, including databases and running virtual machines with all of their applications and data.

### Protection against Ransomware

- ✓ Very frequent snapshots with instant access to all data provide a quick way to roll-back to the state before a virus attack.

### Very light backup engine

- ✓ Continuous interval-based replication works in the background with insignificant influence on production. There is an option to skip virtual machine snapshots in very heavy-load timeframes in VMware environments.

### Encrypted transfer

- ✓ Data stream is sent via SSH for safe transfer via the Internet.

### Solved problem of backup window

- ✓ Backup window is reduced to minutes, since only data changes are replicated within every interval. Additionally, the backup is offloaded from the client machine to the storage server.

### Instant access to and restore of previous data versions

- ✓ Old data versions can be accessed and restored quickly since they are kept in the original form. Users can instantly start using their backed up data. Also, every user has a direct access to "Previous Versions" via SMB on MS Windows clients.

### Optional removal and rotation of backup media

- ✓ Thanks to Pool Export and Import functionalities, users can safely remove backup media (disks), rotate with other sets, or ship to another location.

### Data Optimization

- ✓ Online Compression ( LZ4, LZJB, ZLE, GZIP 1..9 )
- ✓ Online Deduplication
- ✓ Thick, Thin and Over-Provisioning
- ✓ Unlimited Snapshots and Clones



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## High-availability Cluster

**Support for various cluster environments**  
 Ranging from small cluster-in-a-box setups to big rack servers with multiple JBODs.

**All major block and file-based protocols**  
 Supports iSCSI, Fibre Channel (FC) and NFS, SMB (CIFS) client protocols.

**Hyper-converged clusters**  
 Possibility to configure clusters with physical servers, as well as with virtual appliances, especially in hyper-converged environments.

**Distances between 1 foot to 50 miles**  
 Range of possible distances between the nodes from local sites to stretched metro storage clusters.

**Easy cluster management**  
 Easy cluster configuration and management with intuitive GUI. Automation of configuration is possible via REST API.

**Flexible cluster over Ethernet**  
 With dual storage mirrored over Ethernet (only with the Advanced Metro HA Cluster Feature Pack).

### Backup Onsite & Offsite Data Protection Server

The Onsite and Offsite Data Protection server enables backup of everything and restoring the data from the same server, local backup server and from off-site locations. Such a solution is highly flexible, as it covers a wide range of disaster recovery plans without the need to use additional third-party tools.

ZX used as a backup sever enables the creation of consistent snapshots and asynchronous snapshot replication to both local and/or remote destinations. All replication tasks can be applied as stated in individual user demands thanks to advanced retention plans that control the processes of creating and deleting snapshots.

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