



PRODUCT OVERVIEW

Optica's next generation zVT family of mainframe virtual tape products deliver new levels of modularity, scalability and performance. When combined with Optica's world-class service and support and satisfaction guarantee, the zVT 5000-iNAS, zVT 3000i and zVT 5000-FLEX offer the enterprise class features required to serve the broadest set of mainframe customers and workloads in the industry.

The next generation zVT 5000-iNAS High Availability (HA) multi-node base configuration is architected with (2) zVT Virtual Tape Nodes (VTNs) and (2) zVT Intelligent Storage Nodes (ISNs) to eliminate all single points of failure. Two VTNs provide (4 or 8) FICON channels and license support for 512 virtual tape drives. Two ISNs deliver 72TB of mirrored, usable capacity. Hardware compression and deduplication are standard enabling 288TB of effective storage capacity**. The ISNs provide encryption of data at rest and in flight, WORM, and replication features for secure data management, DR and recovery processes.



Benefits

- Architected for High Availability requirements
- Modular, scalable, resilient and affordable support of all Z workloads
- Deploys seamlessly with no impact to tape operations or applications
- Improves reliability, integrity, and performance of backup and recovery
- Improves Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO)
- Simplifies and automates DR testing and recovery

zVT 5000-iNAS HA Multi-Node Base Configuration Features

- (4/8) 16/32Gb FICON interfaces via (2) zVT VTNs*
- Support for 512 virtual tape drives (256 per VTN)
- ~2,000 MB/sec throughput*
- 144TB Raw / 72 TB Useable / 288TB effective storage capacity via (2) zVT ISNs**
- HW compression and deduplication
- Replication with encryption in flight
- Data at Rest Encryption (DARE) and WORM features
- Cloning feature enables simplified DR testing and recovery (automation)
- Flexible management via GUI, CLI and JCL interfaces
- Integration and compatibility testing with tape management applications and tools
- Efficient form factor: 9U with integrated switching

*Scale up to (8) zVT VTNs for up to (32) FICON connections and throughput of ~8,000 MB/sec

**Effective capacity based on 4:1 benefit from compression and deduplication (Typical Mainframe benefits range from 4:1 to 8:1) Expandable to 1PB RAW in a single frame and a maximum capacity that exceeds 11PB RAW.

HIGH AVAILABILITY AND MORE

The zVT 5000-iNAS HA base configuration include (2) VTNs and (2) ISNs. Each node contains fully redundant components for additional resiliency. zVT VTNs are clustered to enable modular scaling from 2 to 8 VTNs to form a single high performance virtual tape library with any to any file system access to the ISNs. The Primary VTN in the cluster maintains the VOLSER database for the file system while the Secondary VTNs use the Primary database for all file access requests. An automated locking mechanism is used to prevent two VTNs from accessing the same tape at the same time. If the Primary VTN fails, a Secondary VTN becomes the Primary via an automated sub second selection process.

zVT ISNs deliver intelligent capacity via an integrated storage grid with a variety of resiliency features. If an ISN fails, the ISN automatically moves filesystems from the failed ISN to its failover partner ISN. In addition, data is protected across the system with Distributed Resilient Data (DRD) erasure-coded resiliency. DRD allows for 3 concurrent disk failures (out of 12) per ISN while maintaining normal I/O when using the Level 3 resiliency setting (default). The ISN only rebuilds lost data using free capacity on remaining disks, enabling faster drive rebuilds and 150% better protection than traditional RAID-6.



SCALABILITY - PERFORMANCE AND CAPACITY

Our fundamental design principle for zVT 5000-iNAS is the ability for modular, granular and flexible expansion of capacity and performance. Scaling zVT 5000-iNAS performance and capacity is simple due to the modular design. Increase performance by adding VTNs and ISNs from 2 to 8 for granular performance improvements to a maximum performance rating of ~8000 MB/sec*. For additional capacity requirements, a capacity only, cost-optimized Capacity Storage Node (CSN) allows for modular additions of 72TB RAW to a maximum capacity in excess of 11PB RAW.

In addition, IBM's recent z14 ZR1 announcement and the available 16U of contiguous rack space provide an ideal location for the zVT 5000-iNAS HA base configuration (9U).

WAN OPTIMIZED DR REPLICATION

The zVT ISN Repligrd software delivers WAN optimized data replication for disaster recovery and business continuity. By transmitting only unique compressed data chunks and newer reference metadata to the remote zVT ISN, Repligrd significantly reduces network bandwidth requirements, sharing data with another zVT ISN system via asynchronous replication. When combined with in-flight encryption, the data transfer between zVT ISN systems is protected from unauthorized access.

DATA SECURITY

The zVT 5000-iNAS Data at Rest Encryption (DARE) feature protects data against unauthorized access to lost or stolen disks, by encrypting data prior to being written to disk. Additionally, the ISN delivers a cloning capability to generate a deduplicated copy of any filesystem within seconds.

The ISN Write Once Read Many (WORM) capability safeguards record immutability for regulatory and legal mandates. Filesystems with different resiliency levels or different data protection attributes can be intermixed on the same ISN, including the ability to dynamically shred all deleted data, supporting an intermix of classified and unclassified data within the same system.

SERVICE AND SUPPORT

The zVT 5000-iNAS comes with Optica world-class 24/7/365 support.

VTN



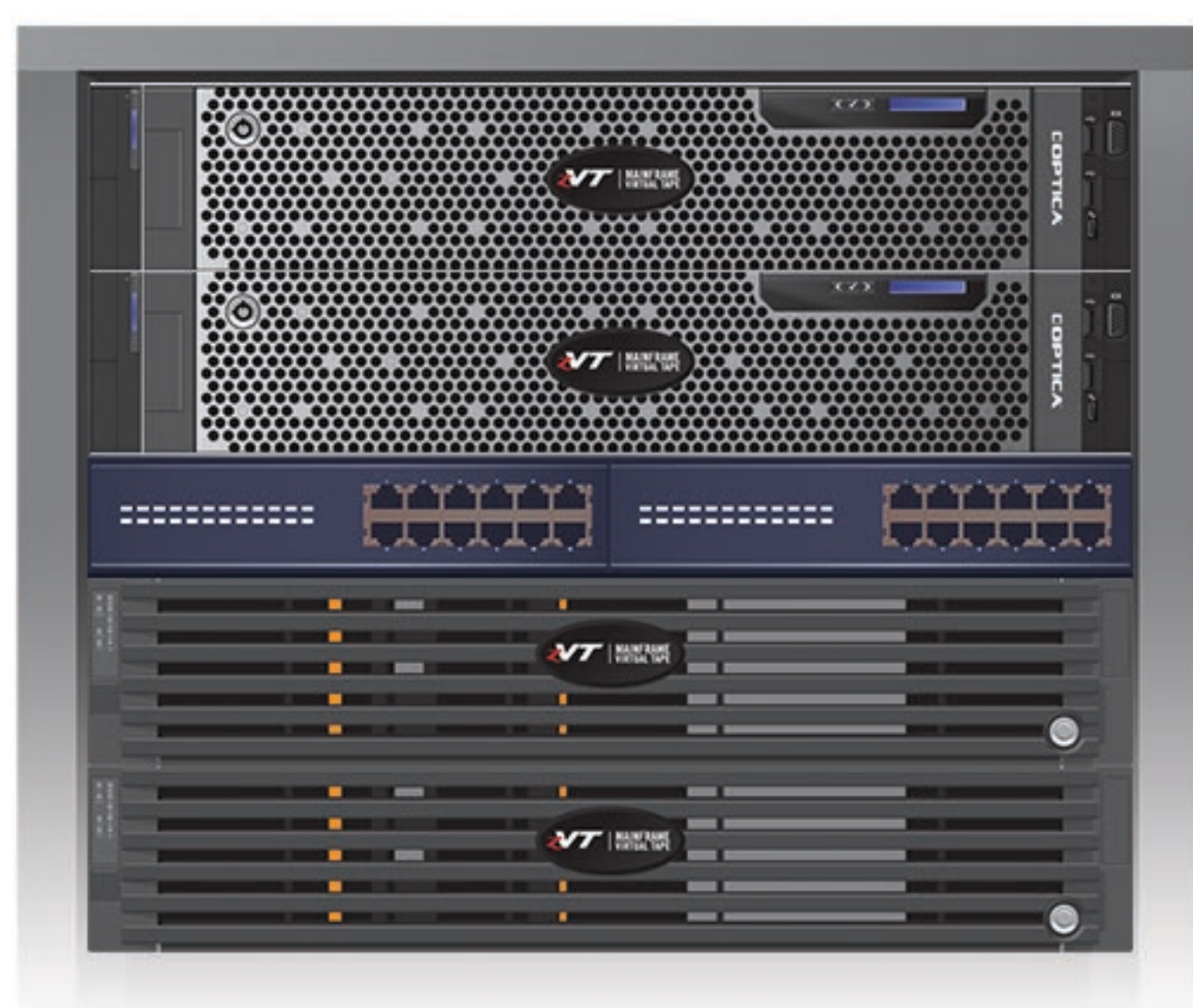
- Virtual Tape Node
- Host connectivity (2/4 FICON)
- 256 Virtual Tape Drives per VTN
- 1000 MB/Sec throughout per VTN

ISN



- Intelligent Storage Node
- Capacity 72 TB raw per ISN
- Intelligent storage features
 - Deduplication, Replication
 - Encryption, WORM (Optional)

HA BASE CONFIGURATION



- (2) VTNs + (2) ISNs
- 2000 MB/Sec throughput
- 512 VTD
- 144TB RAW / 72TB Useable / 288TB Effective
- No single point of failure
- Level 3 erasure-coding for data integrity
- Includes advanced features
- 9U

CSN



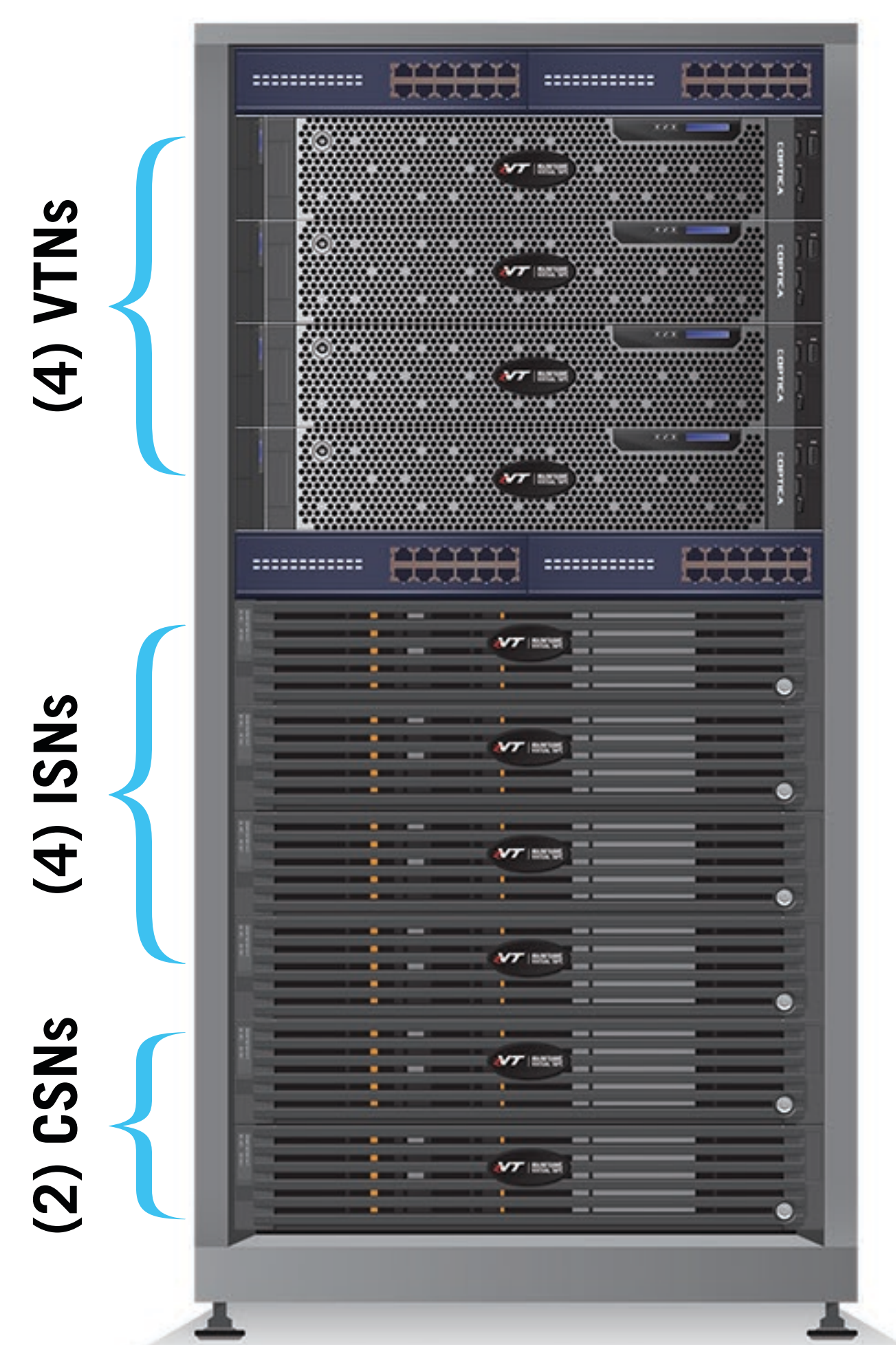
- Capacity Storage Node
- Capacity Only – requires ISN
- 72 TB raw per CSN
- Support for up to 165 CSNs

E-Z SCALE

Increase performance, capacity and resiliency by adding a node

SCALES MODULARLY TO SUPPORT

- Up to (8) VTNs and 2048 VTDs
- 8000 MB/Sec throughput*
- Up to 1PB of RAW capacity in a single frame
- Up to of 11.8PB RAW capacity overall



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ENVIRONMENT

Temperature

- System on: 10°C to 35°C (50°F to 95°F)
- System off: -40°C to 65°C (-40°F to 149°F)
- Altitude 0 to 3048 m (10,000 feet)
- Humidity, Operating: 10% to 80% with 29°C (84.2°F) maximum dew point.
- Humidity, Non-operating: 5% to 95% with 33°C (91°F) maximum dew point. Atmosphere must be non-condensing at all times.

ZVT NODE - VTN



ZVT STORAGE NODE - ISN/CSN



Dimensions

- Height: 2U or 86.8 millimeters or 3.42 inches
- Width: 434.0 millimeters or 17.09 inches (standard 19-inch rack mount)
- Depth: 715.5 millimeters or 28.17 inches (from back of front bezel to rear)
- Depth: 751.34 millimeters or 29.58 inches (including front bezel)
- Weight: Approximately 26 kilograms or 57 pounds

Power

- Dual (2) Power Supplies with IEC-C14 AC outlets; 100/240 Volt; 50/60 Hz, auto-sensing (equipment side)
- Current = 110V-6.5 amps total / 220V-3.0 amps total (balanced across 2 Hot-Swap Power Supplies)
- Watts = 495

Cooling

- Calibrated Vectored Cooling with redundant fans
- BTU = 1908 BTU/hr max

Dimensions

- Height: 2U or 87 millimeters or 3.43 inches
- Width: 448 millimeters or 17.64 inches (standard 19-inch rack mount)
- Depth: 685 millimeters or 26.97 inches
- Weight: Approximately 32 kilograms or 70.5 pounds

Power

- Dual (2) Power Supplies with IEC-C14 AC outlets; 100/240 Volt; 50/60 Hz, auto-sensing (equipment side)
- Current = 110V-4.22 amps total / 220V-2.23 amps total (balanced across 2 Hot-Swap Power Supplies)
- Watts:
 - o ISN: 665
 - o CSN: 540

Cooling

- Calibrated Vectored Cooling with redundant fans
- BTU:
 - o ISN: 2268 BTU/hr max
 - o CSN: 1842 BTU/hr max