



# TRAVERSE SUPPORTED IT INFRASTRUCTURE

## NETWORKS, SERVERS, APPLICATIONS, DATABASES, STORAGE, ENVIRONMENT

This document summarizes a partial list of infrastructure and metrics that Traverse supports. Upon request Zyrion can provide a more comprehensive list of covered infrastructure and metrics.

Network
<ul style="list-style-type: none"><li>• Routing (BGP, OSPF, RIP), WiFi, RMON2</li><li>• Frame Relay &amp; ATM</li><li>• Riverbead Steelhead, Cisco, Foundry, Force10</li><li>• Juniper, Avaya, Amperion, Neoteris</li></ul>
Firewalls
<ul style="list-style-type: none"><li>• Netscreen, Fortinet, NetASQ</li><li>• Checkpoint, PIX</li></ul>
Content Delivery
<ul style="list-style-type: none"><li>• Arrowpoint, Coradient, Bluecoat</li><li>• F5, Peribit</li></ul>
Fixed Wireless
<ul style="list-style-type: none"><li>• DragonWave, Redline</li><li>• NextNet, Tasman</li></ul>
VoIP
<ul style="list-style-type: none"><li>• Cisco SAA/ITP, Cisco Telepresence &amp; Unity</li><li>• Kagoor, Broadworks</li></ul>
Servers
<ul style="list-style-type: none"><li>• VMware, Microsoft Virtual Server</li><li>• Dell OpenManage, HP Blade Enclosures</li><li>• Compaq Insight Manager</li><li>• Linux, Solaris, HP-UX, Windows, Novell</li></ul>
Applications and Databases
<ul style="list-style-type: none"><li>• Oracle, SQL Server, DB2, MySQL, PGP Server</li><li>• Exchange, Lotus Notes</li><li>• IIS, Apache, WebLogic, WebSphere</li><li>• Citrix, Active Directory, DNS, DHCP, WINS</li></ul>
Storage
<ul style="list-style-type: none"><li>• NetApp, Sun T300, Adaptec, Hitachi, QLogic</li><li>• Brocade, ADIC, Dell Equallogic</li></ul>
Environment & Power
<ul style="list-style-type: none"><li>• Liebert, NetBotz, Omnitronix</li><li>• APC, Valere, Cyclades, Avocent</li></ul>

### NETWORKS

Device	Sample List of Metrics
Switches	<ul style="list-style-type: none"><li>- Status</li><li>- Traffic</li><li>- Backplane Utilization</li><li>- CPU Load</li><li>- Memory</li></ul>
Neoteris VPN	<ul style="list-style-type: none"><li>- Log space util</li><li>- Signed-in users</li><li>- CPU</li><li>- Memory</li><li>- File access</li><li>- Web application access</li></ul>
OSPF Routing	<ul style="list-style-type: none"><li>- Status</li><li>- Errors</li><li>- OSPF External LSA Count</li></ul>
BGP4 Routing	<ul style="list-style-type: none"><li>- BGP nbr-Status</li><li>- BGP nbr- Updates Rcvd</li><li>- BGP nbr- Updates Sent</li></ul>
Routers- Network interface (RFC 2863)	<ul style="list-style-type: none"><li>- Status</li><li>- Utilization</li><li>- Traffic</li><li>- Discards</li><li>- Errors</li><li>- Name Packets</li><li>- Bandwidth Utilization</li></ul>
Frame Relay & ATM	<ul style="list-style-type: none"><li>- DLCI-Status</li><li>- DLCI-FECN</li><li>- DLCI- BECN</li><li>- DLCI- Discards</li></ul>
Coradient	<ul style="list-style-type: none"><li>- Avg. Host Latency</li><li>- WatchPoint Latency</li><li>- 85% Host Latency</li><li>- Agv. Network Latency</li></ul>
Aventail (SSL VPN)	<ul style="list-style-type: none"><li>- Log File Util</li><li>- Authenticated Users</li><li>- CPU Util</li><li>- Physical Memory Util</li><li>- Virtual Memory Util</li></ul>
Cisco Routers	<ul style="list-style-type: none"><li>- CPULoad</li><li>- Buffer Allocation Failure</li><li>- Memory Util</li><li>- Status</li></ul>
Cisco Nexus	<ul style="list-style-type: none"><li>- Avg. Response Time</li><li>- Packet Loss</li><li>- Buffer Status</li></ul>
Data Domain Devices	<ul style="list-style-type: none"><li>- Power Module Status</li><li>- CPU Relative Temperature</li><li>- Filesystem Usage</li><li>- CPU Utilization</li><li>- Number of NFS Operations</li></ul>
Atrica Routers	<ul style="list-style-type: none"><li>- Atrica System Alarm</li><li>- Atrica Power Supply Status</li><li>- Atrica Packets Forwarded</li><li>- Atrica Packets Discarded</li></ul>



For the complete list visit  
<http://www.zyrion.com/products/datasheets/>  
 or contact info@zyrion.com

## NETWORKS

Device	Sample List of Metrics
Netrake (VPN Gateway)	<ul style="list-style-type: none"> <li>- IKEv2 Node Initiation Attempts</li> <li>- IKEv2 Node Association TearDowns</li> <li>- VGW 1 VRRP Status</li> <li>- System Operational Status</li> <li>- IPsec Ingress Tunnels</li> </ul>
Wireless LAN (WLAN)	<ul style="list-style-type: none"> <li>- Wireless Associations</li> <li>- Wireless Disassociations</li> <li>- Wireless Nodes Roamed</li> <li>- Wireless Encapsulation Errors</li> </ul>
RMON2 (RFC2021)	<ul style="list-style-type: none"> <li>- Total Traffic</li> <li>- TCP Port Traffic</li> <li>- UDP Traffic</li> </ul>
Cisco Telepresence System	<ul style="list-style-type: none"> <li>- Number Of Calls</li> <li>- Ethernet Peripheral Status</li> <li>- HDMI Peripheral Operational Status</li> <li>- DVI Peripheral Operational Status</li> </ul>
Sycamore Networks DNX-11	<ul style="list-style-type: none"> <li>- T1/E1 Port Status</li> <li>- T1/E1 Error Seconds</li> <li>- Ethernet Port Status</li> <li>- Ethernet Port Traffic In/Out</li> <li>- Ethernet Port Errors In/Out</li> </ul>
F5 Load Balancers (Big-IP)	<ul style="list-style-type: none"> <li>- Logical Interface Traffic Volume</li> <li>- Logical Interface Errors Detected</li> <li>- Pool Traffic Volume</li> <li>- Pool Active Connections</li> <li>- Virtual Server Active Connections</li> </ul>
Sentry Switched CDU	<ul style="list-style-type: none"> <li>- Tower Status</li> <li>- Tower Input Feed Status</li> <li>- Total Power Consumption</li> <li>- Environmental Monitor Temp.</li> </ul>
Packeteer Packetshaper Devices	<ul style="list-style-type: none"> <li>- Power Supply Status</li> <li>- Inside Link Traffic In/Out</li> <li>- Outside Link Packets In/Out</li> <li>- Outside Link Errors In/Out</li> <li>- Partition Traffic In/Out</li> <li>- Class Traffic In/Out</li> </ul>
Redline (Wireless)	<ul style="list-style-type: none"> <li>- Uncoded Burst Rate</li> <li>- RedLine Wireless Uncoded Burst Rate</li> <li>- Wireless (RF) Link Status</li> <li>- Wireless Links Provisioned</li> <li>- LAN Segment Packets</li> <li>- LAN Segment Errors</li> </ul>
NextNet (Wireless)	<ul style="list-style-type: none"> <li>- GPS Clock Status</li> <li>- NextNet GPS Clock Status</li> <li>- NextNet Operational Status</li> <li>- AirLink Status</li> <li>- Base Station Transmit Power</li> <li>- NextNet Base Station Link Saturation</li> <li>- VLAN Uplink Traffic</li> </ul>
Force10	<ul style="list-style-type: none"> <li>- Power Supply Status</li> <li>- Control Processor CPU Load</li> <li>- Control Processor Memory Utilization</li> <li>- Network Interface CRC In</li> </ul>

Device	Sample List of Metrics
DragonWave (Wireless)	<ul style="list-style-type: none"> <li>- System Operational Status</li> <li>- Peer Authentication Status</li> <li>- NIC Frames</li> <li>- Modem Operational Status</li> <li>- Radio Operational Status</li> <li>- Radio RX Signal Level</li> </ul>
Tasman Networks (Wireless)	<ul style="list-style-type: none"> <li>- Traffic Packets</li> <li>- Chassis Temperature</li> <li>- Fan Status</li> </ul>
Cyclades (Wireless)	<ul style="list-style-type: none"> <li>- Port Alarm</li> <li>- Cyclades ACS Port Alarm Condition</li> <li>- Port Traffic</li> <li>- Port Parity Errors</li> </ul>
Load Balancer Cisco SLB	<ul style="list-style-type: none"> <li>- Load Balanced Packets (Assisted)</li> <li>- Active Server Connections</li> <li>- Layer-4 Connections Dropped</li> <li>- Virt-Status</li> </ul>
Cisco/Arrowpoint CSS Switch	<ul style="list-style-type: none"> <li>- Service Connections</li> <li>- Service State Changes</li> <li>- Service Load</li> <li>- Content Rule Traffic</li> <li>- Module Status</li> <li>- Interface Alignment Error</li> </ul>
Cisco/P-Cube (Traffic Optimizer)	<ul style="list-style-type: none"> <li>- Operational Status</li> <li>- Chassis Power Supply Alarm</li> <li>- Chassis Fan Alarm</li> <li>- Active Subscribers</li> <li>- Disk Space Utilization</li> <li>- Active Aggregate Flows</li> </ul>
Cisco ACE	<ul style="list-style-type: none"> <li>- Server Farm Member Count</li> <li>- Load Balanced Packets</li> <li>- Active Server Connections</li> <li>- Layer-4 Connections Dropped</li> <li>- Layer-7 Connections Dropped</li> <li>- Idle Connections Closed</li> <li>- Virtual Server Status</li> <li>- Real Server Status</li> </ul>
Riverbed Steelhead	<ul style="list-style-type: none"> <li>- System Health Status</li> <li>- CPU Utilization</li> <li>- Optimized Connections</li> <li>- Established Connections</li> <li>- Active Connections</li> <li>- Pass-Through Traffic</li> </ul>
Cisco Unity	<ul style="list-style-type: none"> <li>- Unity Server Status</li> <li>- Number Of Ports In Use (Total)</li> <li>- Number Of Ports In Use (Inbound)</li> <li>- Number Of Ports In Use (Outbound)</li> <li>- Number Of Licensed Subscribers</li> </ul>

## SERVERS

Server	Sample List of Metrics
VMWare ESX3, ESX4, vSphere, vCenter	<ul style="list-style-type: none"> <li>- Availability</li> <li>- Memory Available for VMs</li> <li>- Memory Used by VMs</li> <li>- CPU Used</li> <li>- Number of CPUs</li> </ul>
Microsoft Virtual Server	<ul style="list-style-type: none"> <li>- Number CPUs</li> <li>- CPU Utilization</li> <li>- Memory Available</li> <li>- Memory Utilized</li> </ul>

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Server	Sample List of Metrics
Sun Solaris	<ul style="list-style-type: none"> <li>- System Interrupts</li> <li>- Swap in from Disk</li> <li>- User CPU Time</li> <li>- System CPU Time</li> </ul>
HP	<ul style="list-style-type: none"> <li>- Physical Memory Used</li> <li>- Disk</li> <li>- CPU- Load</li> <li>- System CPU Time</li> <li>- Application/Process Count</li> </ul>
Dell Open Manage	<ul style="list-style-type: none"> <li>- Overall Status</li> <li>- Power Supply Redundancy</li> <li>- BIOS</li> <li>- Operating System Status</li> <li>- Physical Memory Usage</li> </ul>
Novell Netware	<ul style="list-style-type: none"> <li>- System Login State</li> <li>- File R/W Operations</li> <li>- Number Of Open Files</li> <li>- Number Of Record Locks</li> </ul>
UNIX	<ul style="list-style-type: none"> <li>- Blocks</li> <li>- Memory Swapped</li> <li>- System CPU Time</li> <li>- Physical Memory Usage</li> <li>- Number of Processes</li> <li>- Disk Space Util</li> </ul>
Windows	<ul style="list-style-type: none"> <li>- Disk Space Util</li> <li>- Physical Memory Usage</li> <li>- Number Of Users</li> <li>- Number Of Processes</li> <li>- Context Switches</li> <li>- File R/W Operations</li> <li>- Utilization</li> </ul>
Lan Manager	<ul style="list-style-type: none"> <li>- Windows Login Errors</li> <li>- System Errors</li> <li>- Workstation I/O Response</li> <li>- Remote Connections</li> </ul>
Compaq Insight	<ul style="list-style-type: none"> <li>- CPU-Load</li> <li>- Disk</li> <li>- PhyMemUsed</li> <li>- VirtMemUsed</li> </ul>
AIX	<ul style="list-style-type: none"> <li>- Average CPU Utilization</li> <li>- Volume Group Utilization</li> <li>- Disk Utilization</li> <li>- File System Utilization</li> <li>- Paging Space</li> </ul>
HP Blade Enclosures	<ul style="list-style-type: none"> <li>- Enclosure Overall Health</li> <li>- Blade Server Status</li> <li>- Enclosure Power Supply Status</li> <li>- Enclosure Fan Status</li> </ul>
Redhat Cluster Service	<ul style="list-style-type: none"> <li>- Overall Cluster Status</li> <li>- Number of Unavailable Nodes</li> <li>- Number of Failed Services</li> <li>- Cluster Node Status</li> <li>- Cluster Service Status</li> </ul>
HP Virtual Connect Module	<ul style="list-style-type: none"> <li>- Link Activity</li> <li>- Port Activity</li> </ul>

## APPLICATIONS

Application	Sample List of Metrics
Microsoft Exchange	<ul style="list-style-type: none"> <li>- Address Book Sessions</li> <li>- Directory Service Sessions</li> <li>- Directory Service Threads</li> <li>- Per-Protocol Traffic</li> <li>- Information Store Users</li> <li>- MTA Messages</li> </ul>
Microsoft SQL Server	<ul style="list-style-type: none"> <li>- Auto Param Total</li> <li>- Batch Requests</li> <li>- Compilations</li> <li>- Re-Compilations</li> <li>- Logging In Users</li> <li>- Transaction Active</li> <li>- Log Cache Hit Ratio</li> <li>- Database IO</li> </ul>
Microsoft Media Services	<ul style="list-style-type: none"> <li>- Active Streams</li> <li>- AAA Requests</li> <li>- Client Count</li> <li>- Live Streams</li> <li>- UDP Resends</li> <li>- Authentication Requests</li> </ul>
Microsoft IIS	<ul style="list-style-type: none"> <li>- Bandwidth Usage</li> <li>- File Transfer</li> <li>- HTTP Send/Receive Operations</li> <li>- Active Connections</li> <li>- Total Traffic</li> <li>- Authenticated users</li> <li>- HTTP (GET) Operations</li> </ul>
Apache	<ul style="list-style-type: none"> <li>- Average Request Size</li> <li>- Server traffic</li> <li>- Requests per minute</li> <li>- Connected Clients</li> <li>- Server Utilization</li> </ul>
BEA Weblogic	<ul style="list-style-type: none"> <li>- Idle Threads</li> <li>- Pending Requests</li> <li>- JVM Heapfree</li> <li>- Open Sockets</li> </ul>
Active Directory	<ul style="list-style-type: none"> <li>- Address Book Sessions</li> <li>- LDAP Threads</li> <li>- Authentications (Kerberos)</li> <li>- Authentications (NTLM)</li> <li>- Users Created</li> <li>- Membership Evaluations (Universal)</li> </ul>
Microsoft DHCP	<ul style="list-style-type: none"> <li>- Available Address</li> <li>- Query/Response</li> <li>- Discover Requests</li> <li>- Lease Request</li> <li>- Server Avail</li> </ul>
Citrix	<ul style="list-style-type: none"> <li>- Application Enumeration</li> <li>- DataStore Traffic</li> <li>- DataStore Reads</li> <li>- Dynstore Writes</li> <li>- Local Cache Traffic</li> </ul>
Remedy	<ul style="list-style-type: none"> <li>- ARsystem Status</li> <li>- Login Failure (Incorrect Password)</li> <li>- Active Users (Total)</li> <li>- API Requests Received</li> <li>- CPU Usage for API Functions</li> <li>- Filter Actions (Notify)</li> </ul>
Activemq Application	<ul style="list-style-type: none"> <li>- Queue Size</li> </ul>

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Application	Sample List of Metrics
Microsoft DNS	<ul style="list-style-type: none"> <li>- Dynamic Updates Received</li> <li>- Recursive Queries Received</li> <li>- TCP based Queries Sent</li> <li>- Zone Transfer Success</li> </ul>
Lotus Notes	<ul style="list-style-type: none"> <li>- Undeliverable Mail count</li> <li>- Mail Queue Size</li> <li>- Mail traffic</li> <li>- Transaction Rate</li> <li>- Active User sessions</li> <li>- Buffer Pool I/O rate</li> </ul>
URL Transactions	<ul style="list-style-type: none"> <li>- Transactions errors</li> <li>- Time to complete</li> <li>- Incomplete transaction</li> </ul>
Sendmail	<ul style="list-style-type: none"> <li>- Process Count</li> <li>- Load Average</li> <li>- MTA Status</li> <li>- Queue Size</li> <li>- System-Wide Messages Rcvd</li> <li>- System-Wide Messages Sent</li> </ul>
PGP Universal Messaging Server	<ul style="list-style-type: none"> <li>- Number Of Messages Processed</li> <li>- Number Of Messages Encrypted</li> <li>- Number Of Messages Decrypted</li> <li>- Number Of Messages In Queue</li> </ul>

## DATABASES

Database	Sample List of Metrics
Microsoft SQL Server	<ul style="list-style-type: none"> <li>- Auto Param Total</li> <li>- Batch Requests</li> <li>- Logging In Users</li> <li>- Database Txn: Active</li> <li>- Log Cache Hit Ratio</li> <li>- Database Status</li> <li>- Percentage Used</li> <li>- Database IO</li> </ul>
Oracle	<ul style="list-style-type: none"> <li>- Performance Counter</li> <li>- Table Space Utilization</li> <li>- Replication Schema Status</li> <li>- Listener Status</li> <li>- Committed transactions</li> <li>- Datafile Reads / Writes</li> </ul>
Sybase, DB2 & Ingres	<ul style="list-style-type: none"> <li>- Transaction Rate</li> <li>- Disk Reads / Writes</li> <li>- Page Reads / Writes</li> <li>- Out Of Space Errors</li> <li>- Requests</li> <li>- Status</li> </ul>
MySQL	<ul style="list-style-type: none"> <li>- Aborted connects</li> <li>- Queries per second</li> <li>- Handler stats</li> <li>- Delayed errors</li> <li>- Key read requests</li> <li>- Opened tables</li> </ul>
Postgres	<ul style="list-style-type: none"> <li>- Database Size</li> <li>- Number of Connections</li> <li>- Number of Locks</li> <li>- Heap Blocks (Read/Hit)</li> <li>- Number of SQL Queries</li> </ul>

## STORAGE

Storage Device	Sample List of Metrics
Brocade / SAN	<ul style="list-style-type: none"> <li>- SAN Switch Status</li> <li>- SAN Port Physical State</li> <li>- Fibre-Channel Switch Status</li> <li>- Traffic</li> <li>- CRC In</li> </ul>
Network Appliance	<ul style="list-style-type: none"> <li>- CPU Utilization</li> <li>- NFS Operations</li> <li>- Disk I/O</li> <li>- RPC Call</li> </ul>
Adaptec Array	<ul style="list-style-type: none"> <li>- Adapter status</li> <li>- Container status</li> <li>- Environmental status</li> </ul>
BlueARC	<ul style="list-style-type: none"> <li>- File System Load (Client)</li> <li>- Volume Space Utilization</li> <li>- CIFS Share Usage</li> <li>- NFSv2 GetAttr Operations</li> </ul>
Dell Equallogic SAN	<ul style="list-style-type: none"> <li>- Total Storage Space Usage</li> <li>- Replication Space Usage</li> <li>- Group Member Average Latency</li> <li>- Group Member iSCSI Connections</li> </ul>
Sun T300	<ul style="list-style-type: none"> <li>- FRU Removal Shutdown</li> <li>- Total Read Requests</li> <li>- Total Blocks Read</li> <li>- Total Cache Hits On Read</li> </ul>
AMI Megaraid	<ul style="list-style-type: none"> <li>- I/O Reads</li> <li>- Adapter I/O Writes</li> <li>- Adapter Read/Write Failure</li> <li>- I/O Failure</li> </ul>
Hitachi Storage Array	<ul style="list-style-type: none"> <li>- Disk Controller Processor Status</li> <li>- Disk Controller Internal Bus Status</li> <li>- Disk Controller Power Supply Status</li> <li>- Disk Controller Battery Status</li> </ul>
Qlogic SAN Switch	<ul style="list-style-type: none"> <li>- Switch Port Status</li> <li>- Switch Port Link Failures</li> <li>- Switch Port Sync Losses</li> </ul>
EMC Avamar Grid	<ul style="list-style-type: none"> <li>- Number Of Active Sessions</li> <li>- Storage Space Utilization</li> <li>- Time Since Last Validated Checkpoint</li> </ul>

## POWER / ENVIRONMENT

Example Equipment	Sample List of Metrics
Liebert UPS	<ul style="list-style-type: none"> <li>- UPS Battery Capacity</li> <li>- UPS Output Line Voltage</li> </ul>
Amperion Broadband over PowerLine	<ul style="list-style-type: none"> <li>- AC Line (Power) Status</li> <li>- AFE Extractor Receive Gain</li> </ul>
Liebert HVAC	<ul style="list-style-type: none"> <li>- Number of Conditions</li> <li>- Overall System State</li> <li>- Temperature Probe</li> </ul>
Valere DC Generators	<ul style="list-style-type: none"> <li>- Valere Power Module Status</li> <li>- System Voltage</li> </ul>
UPS	<ul style="list-style-type: none"> <li>- UPS Battery Status</li> <li>- UPS Battery Capacity</li> </ul>
Omnitronix	<ul style="list-style-type: none"> <li>- Sensor State</li> <li>- Relay/Contact State</li> </ul>
Avocent Intelligent Power Strips	<ul style="list-style-type: none"> <li>- Temperature Sensor 1</li> <li>- Voltage Sensor 1</li> </ul>
APC Powernet (Netbotz) Devices	<ul style="list-style-type: none"> <li>- Sensor Temperature</li> <li>- Sensor Communication Status</li> <li>- Sensor Outlet Status</li> </ul>

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