



High Availability Operations Center

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1 COMPANY BACKGROUND

Cervalis addresses the rapidly growing demand for reliable, highly available primary and backup technology infrastructure services. Cervalis provides business and technology solutions, based in our fault-tolerant, highly secure facility, enabling organizations to further protect their data resources, reduce operating costs and enhance their business operations. Cervalis solutions are customized to meet the complex and ever changing needs an organization faces. Offering a broad range of services, Cervalis can accommodate solutions that range from remote data backup and management of IT resources to full outsourcing of a corporate data center. Clients may choose the extent of management services delegated to Cervalis.

Acting as an extension of the organization's IT department, Cervalis utilizes best-of-breed providers in all components of its infrastructure. The company employs at least N+1 redundant configuration strategies in all power and network components. Through its state-of-the-art, fault-tolerant Operations Data Center, Cervalis offers 24 X 365 world-class customer support with the technology needed to scale complex environments in a timely, secure and cost-effective manner.

Highly available and scalable solutions, coupled with an unwavering commitment to customer support and satisfaction, comprise the Cervalis advantage. Additional core company strengths include:

- Comprehensive solution offerings with focus on business continuity and disaster recovery and e-business applications management and support.
- Up to 50,000 sq. ft. of available space for dedicated, custom backup office operations
- Robust, flexible and reliable products and services addressing the IT outsourcing needs of organizations of all sizes.
- Extensive experience in hosting and Internet infrastructure management and telecommunications.
- Flexible, nimble company that can develop and customize a solution to address specific customer and market needs.
- Traditionally managed company using best business practices, with extensive emphasis on proven enterprise management policies and methodologies.
- Solid back-office processes and infrastructure with scalable and robust corporate IT management systems.
- Intense focus on customer service and support while creating a value-added proposition with our clients.
- Strong management team with a proven track record of success. Executive team includes several members who have held prior CIO or CTO positions.
- Skilled staff with industry experience from large corporations in various vertical sectors such as Financial Services, Telecommunications, Health Care, Information Technology, etc.
- Received SAS70 Type II certification, one of the most stringent and widely recognized auditing standards for service companies.
- SAS70 is the authoritative guidance that allows service organizations to disclose their control activities and processes to their customers and their customers' auditors in a uniform reporting format.

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- Received “TruSecure / Cybertrust Service Provider” certification for its robust and highly secure network operations. TruSecure provides independent testing and verification of all dimensions of the security of a service provider's offerings. Cervalis met TruSecure's strict requirements for security surrounding the physical environment, access controls, backup / failover / redundancy / disaster recovery capabilities, network/connectivity, server configurations and overall security posture.
- Cervalis is headquartered in Stamford CT, and has Operations Data Centers in Wappingers Falls, NY and Stamford, CT.



2 CERVALIS OPERATIONS CENTER

Cervalis designed and built its Operations Center for applications with high availability infrastructure requirements. With a total of 70,000 sq. ft., the Cervalis' Wappingers Falls, NY operations center includes 30,000 sq. ft. of active data center raised floor and 20,000 sq. ft. of Class-A office space (also on raised floor). The data center can be easily expanded to 50,000 sq. ft. of data center space. This is a former IBM facility with N + 1 infrastructure. It was remodeled in 2001 to support mission critical applications.

Location Details:

- Wappingers Falls, Dutchess County, New York State
- Approx. 65 miles North of New York City
- Approx. 85 miles South of Albany, New York

2.1 Network Environment

Cervalis' network environment has been built as a fault tolerant network, which provides divergent routes and multiple connections via multi-homed Synchronous Optical Network Technology ("SONET") rings. This setup establishes a Necessary + 1 ("N+1") redundancy. All network devices are, at a minimum, N + 1 redundant. Our self-healing wide area network and fully redundant, high-speed local area network infrastructure (Fast Ethernet/Gigabit Ethernet) provide our customers with network solutions that are secure, scalable and highly reliable.

- Two separate entry points into building and complex
- Four providers of "local" loop connectivity
- Divergent routes and multiple connections in networking cable plant
- Interconnection points in New York City
- Capability of providing end to end Ethernet connectivity to Cervalis' data center facility
- Cervalis is a carrier-neutral provider able to provide virtually unlimited Internet bandwidth
- Interconnected and peering with multiple national and international Tier 1 and Tier 2 carriers

2.2 Physical Security

Cervalis' integrated security approach ensures that our customers' equipment and data are protected at all times with multiple levels of security protection. Dedicated security personnel monitor controlled access at the building perimeter and within the data center. Proximity card readers and video surveillance systems monitor and control access within the facility. Especially sensitive areas such as the data center floor, are additionally protected by biometric readers. Video surveillance, proximity and biometrical readers' data are monitored from the central security office.

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- 56 video surveillance cameras
- Motion sensors
- Biometric identification readers for Data Center access
- Data center designed with “external buffer” corridor
- Proximity badges matched to an individual fingerprint
- 4-foot mound (berm) surrounds the facility
- Cervalis employs bonded Security staff for 24x365 physical security management

2.3 Network Security

Cervalis employs stringent security and privacy policies based on auditing standards, industry best practices and TruSecure recommendations. Cervalis denies any unnecessary protocols. Business rules on TCP and/or UDP ports are strictly enforced, thereby allowing limited access required to perform necessary business functions. Remote access for management purposes is only allowed for authorized individuals through 3DES encrypted VPN sessions.

Cervalis has successfully passed and found in full compliance with the most rigorous security audits from TruSecure and was awarded TruSecure’s certification for service providers. We are continuously monitoring new development in this field and currently testing a leading-edge security anti-DDoS tool with one of our partner vendors and Mercury Interactive.

2.4 Electric Power

Our Wappingers Falls Data Center is designed with full N+1 redundancy—at any time each component is connected with multiple power and networking connections. The data center power design is based on multiple and fully divergent power grids and substations, 2N Uninterruptible Power Supply (UPS), N+1 generator backup, and N+1 feeds to the complex.

Cervalis has an electrical infrastructure designed for high availability. The facility has the capacity to support over 100 watts per sq. ft. Our system is built on a tiered electrical system:

- In house electrical sub-stations
- 2 Separate Power Grids
- 3 Kohler 2 MW Diesel Generators powered by a Detroit Diesel 4000 HP engine
- 3000 Gallons of Fuel per Generator
- 100-Gallon Per/Hour Burn
- 8 - 500 KVA PowerWare 9315 UPS systems with Cyberex Static Switches
- 14 Kohler Transfer switches.
- Kohler Parallel Switch gear built for 3 generators
- 22 – PDI Power Distribution Units model PPB4150G641

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2.5 Cooling Systems

The data center cooling system is a closed loop, glycol based system.

- 4 units of 750 Ton HVAC cooling towers supported by four 600-ton and one 250-ton chillers.
- 31 air handlers, 12 with humidification systems.
- Each unit is provided cold water (approximately 48 degrees Fahrenheit), which circulates through a heat exchange unit, moving cold air under the data center floor.
- Individual air handlers equipped with smoke detectors
- The entire Cervalis data center is equipped with 18-inch raised floors facilitating distribution of cool air

2.6 Water Detection Systems

Each of the air handlers in the data center is configured with two water detectors below the raised floor. All detectors are connected together so that on alarm indicates alarms for all. There is a single green "Water" lamp on each of the three-enunciator panels which is constantly monitored from the Network Operations Center (NOC).

2.7 Network Operations Center

Cervalis' Wappingers Falls facility houses its state-of-the-art Network operations center (NOC) which is manned 24x365. The facilities in the NOC include:

- 8 station network operations and command center
- 2 overhead projectors for wall display
- 2 TV sets for monitoring

2.8 Fire Protection and Suppression

A Cerberus Pyrotronics Fire Protection System is in place at the Wappingers Falls, NY facility. This system monitors all the smoke detectors throughout the building. If a smoke detector is activated, the specific location of the incident is displayed on unit monitors located within the Security Command Center, Network Operations Center, data center and off-site Central Station.

The Wappingers Falls data center is equipped with a dry pipe, pre-action sprinkler system while the office space has a wet sprinkler system. The dry pipe sprinklers are tested two times per year. The system requires for a number of events to occur before water is deployed within the data center. Initially all overhead pipes are dry; after any Data Center smoke detector is activated the local Fire Department is notified as well as in house security and Network Operations staff. At this point all air handlers are automatically shutdown. After a second detector activates, water is released into the pipes, however water is not yet released into the data center. Once the fire reaches 155 degrees Fahrenheit, the head that reaches that

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temperature is released. Additionally, there are multiple fire extinguishers mounted throughout the data center.

- Fire suppression is a dry-pipe pre-charged system.
- All air handlers have auto EPO on first detector activation.
- Facility/Data center contains 164 smoke detectors above and below the floor.
- Fire control/detection panel is a Siemens Cerberus Pyrotronics. The system is monitored by Cervalis Security (24x365) and Central Station.
- Enunciator / alarm panels in NOC.
- Motion sensors and door contact on perimeters and secured doors. Monitored by Cervalis Security and Central Station.
- The nearest fire station is less than half a mile from the data center facility

2.9 Floor Space

The Cervalis data center is equipped with 2'x2' floor tile raised 18" above the sub-floor.

- Electrical outlets 14 inches off the raised ground under the raised floor
- Network connection cables located in overhead cable trays
- Distributed weight limit is rated at 1,200 pounds per square foot. These limitations can be easily increased with the installation of additional corner support stations

2.10 Office Space and Support Areas

Cervalis' 20,000 sq. ft. of office space consists of:

- Offices: 19 – 10x10
- Personnel space available
- Multiple conference rooms
- Executive briefing conference room
- Work Area Recovery Space

2.11 Work Area Recovery Space

Cervalis Work Area Space is provided as part of a Business Continuity/Disaster Recovery solution. The work area recovery space supports personnel that are required to continue business operations from a remote location in the event of an outage causing the primary location to be inaccessible. Work Area Space is connected to Cervalis Data Center Infrastructure space and is typically conterminously contracted.

Cervalis' Work Area Recovery Space consists of Shared and Dedicated Seats with:

- 24" x 36" work surface
- Desktop Computers
- Telephone service
- Connectivity to Data Center space

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- Office amenities including fax machines, copy machines, printers

Cervalis has 50,000+ sq. ft. of space available for custom backup and work group recovery requirements.

2.12 Operations and Services

The Cervalis facility in Wappingers Falls is staffed and operated 24 hours a day, 365 days per year. In addition to security personnel, skilled IT professionals are available 24 hours a day to assist our customers in the process of system design and configuration, implementation and technical support. The services that are provided on a 24x365 basis consist of:

- Business Continuity Services
- Collocation
- Data Backup
- Data Replication
- Database Administration
- E-Mail Services
- Hardware Provisioning
- Internet Bandwidth
- Managed Exchange
- Managed Storage
- Managed Security
- Network Monitoring
- Network Administration
- Network Load Balancing
- Private Network Circuits
- Remote Hands
- Software provisioning
- Systems Admin Services
- Test Lab Environment
- VPN Services
- Voice Services
- Web Monitoring
- Work Area Recovery Services

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2.13 Illustrations and Pictures

2.13.1 Operations Center Facility



2.13.2 Network Operations Center (NOC)



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2.13.3 Security Guard Station



2.13.4 Ready Data Center Space



2.13.5 Main Network Distribution Facility



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2.13.6 Redundant UPS Pairs



2.13.7 Redundant 2 MW Generators



2.13.8 Redundant Chillers & Pumps





2.13.9 Redundant Water Cooling Towers



2.13.10 Overhead Communication Cable Trays



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2.13.11 Work Area Recovery Space



2.13.12 Conference Rooms



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