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## Overview

NetSource is a Chicago area (Naperville) hosting company that owns and operates its own world class datacenter. The initial datacenter buildout was put into operation in 2007 and expanded in 2013. This provided NetSource a unique opportunity to build the center from the ground up according to the most recent standards available. We have built the center to withstand the most rigorous standards and needs of our customers. In particular NetSource referred to the ANSI/TIA 942 standard for datacenters, the only approved standard in existence at the time, PCI-DSS standards for security, and most recently SSAE-16, SOC1, and SOC2 Type 2 compliance. These standards call for rigorous procedures in all facets of datacenter operation. Plus, we were able to leverage years of experience in the Internet business since 1995.

The current SSAE-16, SOC1, and SOC2 audits verify and test our operations and procedures to conform to the highest standards. See the NetSource engagement letter from The Moore Group that specializes in SSAE-16 audits of datacenters for more information. The audit report is available to a customer's auditors upon request; note an NDA is required.

The rest of this short overview summarizes some of the key elements of the NetSource datacenter operation.

## Security

Security is one of the most important aspects of datacenter operation to NetSource and its customers. NetSource provides a secure facility that has passed, first time, many customer audits. NetSource maintains a security policy according to the PCI-DSS standard. NetSource provides locked access to the building and to the computer room(s). Only qualified people are allowed in the computer room. NetSource provides video surveillance throughout the facility and stores digital video for at least 90 days. Customers are required to read and sign data center procedures before NetSource allows entry to the computer room. NetSource enforces sign-in procedures and logs all entry to computer rooms electronically. Once inside the computer room all server and network equipment is in closed and locked cabinets, there are no open racks.

NetSource secures critical networks with firewalls and/or intrusion detection

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systems. Special software monitors the logs from firewall and IDS systems to report events that need attention.

This is a brief summary of the security procedures enforced at NetSource. See the data center specifications for more information.

## **Reliability**

Reliability is another key goal of the NetSource datacenter. NetSource considers itself a tier 3 datacenter according to the uptime institute definitions. Measured uptime of the NetSource backbone network over the last year is 99.997%. Achieving this uptime over a long multiple year period is due to NetSource's knowledge, network architecture, and procedures.

NetSource maintains at least an N+1 architecture in power, cooling, and networking. NetSource utilizes physically diverse Internet connections and network entry points into the building. The APC UPSs are configured as N+1 with automatic bypass and with generator backup. The generators also support the cooling systems. The computer room air conditioners are maintained with N+1 redundancy and maintain the room at the temperatures and humidity required by the ANSI 942 and ASHRAE standards.

Customers have the option to connect to the NetSource backbone with redundant network connections and use redundant A/B power going through separate circuit breakers for the highest level of reliability all the way to the customer's equipment.

See the data center specifications for more information.

## **Performance**

To keep peak performance, NetSource uses 10 gigabit per second fiber connections to the Internet and supports at least 10 gigabit speeds in its backbone network. Customers have the option to connect to the backbone at 1 gbps, 100 mbps, 10 mbps, or custom speeds as needed. NetSource monitors its connections for low packet loss and low latencies and provides appropriate SLAs to customers to ensure high performance. Packet loss is effectively zero with latencies in the backbone of less than 1 millisecond.

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NetSource also monitors connections on the general Internet to make sure its Internet providers continue with a high performance service. Key destinations around the USA are measured between 20 and 30 milliseconds on average.

See the data center specifications for more information.

## **Maintenance and Monitoring**

NetSource constantly monitors and maintains its datacenter. Every piece of equipment has a maintenance plan. All key components including routers, firewalls, switches, CRACs, UPSs, and servers are monitored by automated systems that send alerts on failure. This includes customer's network connections and optionally their systems. NetSource has contracts with third party vendors to maintain certain equipment like CRACs, generators, and fire suppression systems. NetSource has documented emergency recovery procedures that cover every kind of datacenter failure and it focuses first on prevention. NetSource uses redundant systems to keep mean time to failure low. NetSource keeps spare equipment for fast repairs to keep mean time to repair low.

See the data center specifications for more information.

## **Summary**

This document has provided a brief summary of some of the key elements of the NetSource datacenter specifications and procedures. This document is not intended to provide all information regarding procedures but provides enough information to provide an overview. For more information, see the other documents that NetSource provides as listed below.

- Data center procedures for working in an active data center, for customers
- Acceptable use policies
- Data center specifications/presentation
- SSAE16, SOC1, SOC2 audit reports (NDA required)
- The NetSource website at <http://www.ntsourc.com>

NetSource owns and operates our own Chicago area datacenter providing us complete control over the quality of the hosting service we provide. NetSource can host your web site, business application, and mission critical data in our state-of-the-art data center. You will get the highest reliability and performance with 100% network availability including our redundant 10 gigabit fiber bandwidth connections to the Internet. Please review our data center specifications below and see why our Chicagoland (Naperville) data center has some of the highest customer ratings in the Midwest.

## Main Network Specifications and Datacenter Features:

NetSource's datacenter was build using the TIA-942 datacenter standards and provides you with a fully redundant hosting solution for your business. NetSource maintains the datacenter with scheduled maintenance on all critical datacenter systems. NetSource has years of experience (since 1995) managing a complex hosting environment for businesses. Our Network is made up of 10 gigabit fiber connections coming from multiple providers to ensure your connection is always available. Call NetSource at 866-778-1212 with your questions.

- New data center was built to ANSI / TIA 942 DATACENTER STANDARDS
- Customers have been audited and passed HIPAA, Sarbanes-Oxley, Gramm-Leach-Bliley
- NetSource is SSAE16, SOC1, and SOC2 Type II Compliant
- Data center is PCI level 2 compliant for credit card handling and handling of financial data
- Quality APC datacenter components including racks, cooling, and backup UPS systems
- Multiple Physical POEs (points of entry) for fiber inputs into center
- Capacity Planning – Monitoring of links nearing high utilization
- 10 GBPS (GigE) fiber connections for high bandwidth needs
- 1gbps and 100 mpbs connections (or better) to NetSource's routers and switches from your server is standard
- Instant growth and scalability - Potential to install additional bandwidth at any time.
- Redundant bandwidth carriers means no single point of provider failure
- BGP4 is being used on border routers to ensure the quickest path between every request
- Native (dual-stack) ipv6 support
- 42 U, 21 U, 14 U, locking cabinets supporting standard 19" mounting rails
- 20-amp 120 volt AC circuits, 3-phase 208V circuits available. 60 Amps in each rack
- Custom dedicated hosting, colocation, and managed services available
- We can work with you on creating a disaster recovery plan using trained specialists
- Geographically stable (low disaster occurrence location in USA)
- Located 30 mi west of Chicago, Illinois. Located 1/2 mile off I-88
- Senior level system administrators available 24/7/365

## Datacenter Power System Specifications:

The datacenter electrical power system contains fully redundant uninterruptible power systems (UPS) with diesel backup generators. NetSource has regularly scheduled maintenance checks on all power systems to ensure they will work when they are needed. You can trust NetSource's power system because we have proven the success of our infrastructure with zero failures and regular checks via our audits. NetSource is also located in a new section of Naperville and our physical location has some of the most reliable power in the state of Illinois (in the world).

- Redundant APC UPS's - uninterruptible power supply batteries, powers equipment
- Diesel generators - Hospital-grade diesel generators provide for all datacenter operations
- Dense high capacity circuit distribution to prevent circuit failures or load issues
- 120 VAC and 208 VAC (single and three phase power availability) - 60 amps possible in each rack
- 24/7 electrical circuit load monitoring and management
- N+1 power redundancy on all systems.
- APC valve-regulated lead-acid (VRLA) batteries providing backup at full load
- Generator backup - 24 hours of on-site fuel plus emergency refueling service to resupply in an emergency
- Uninterrupted transfer of power using high capacity UPS and Automatic Transfer Switch (ATS)
- Transfer of power is completely automatic and transparent in the event of an outage
- Regularly scheduled maintenance with certified power generator contractors
- 24/7/365 monitoring of power systems at Network Operations Center - NOC

## Datacenter Cooling / Environmental Specifications:

The NetSource datacenter has redundant cooling systems, so at maximum cooling conditions a system can be completely down and it will not affect room conditions. NetSource keeps the front of our racks at between 70 - 75 F (according the ANSI 942 spec, also see ASHRAE standards) to ensure your server equipment runs as efficiently as possible. NetSource also controls the humidity in the center to ensure a long life for your equipment. Our setup ensures a cool environment for your equipment.

- Redundant HVAC cooling capacity controlled to 70 degrees
- Liebert and APC datacenter grade air conditioners in N+1 setup to ensure 100% up-time.
- Leak detection system - upon detection of any water near system, the leak detection will send an alarm

- Equipped with high capacity HVAC data center grade systems installed by datacenter specialists
- N+1 redundancy on cooling systems
- Data center environment maintained at optimal temperature and humidity levels for equipment
- N+1 UPS power redundancy
- 24/7/365 HVAC/CRAC emergency service contracted by certified professionals with years of experience
- Contracted maintenance with certified HVAC contractors
- Computer controlled humidification system
- 10 foot ceiling height contributes to maintaining ambient air temperature
- 2 foot raised floor for under floor cooling is very efficient for putting cold air on all racked equipment

## Fire Detection and Suppression System Specifications:

The NetSource data center is protected by dual fire protection systems. NetSource maintains both FM200 water-less fire suppression and dry pipe pre-action fire protection systems, thus allowing NetSource to offer the best available fire protection in existence today. NetSource has also placed the entire data center inside of a fire protected area to prevent fire from entering the center from an outside source. Careful planning and high end equipment ensures that your investment is safe with NetSource.

- Full fire detection systems installed above and below racks in datacenter to address issues
- Early warning smoke detectors installed
- Heat detection warning systems act as secondary system to smoke detectors
- FM-200 fire suppression system - safe gas based fire removal system
- Dual interlock pre-action dry pipe fire suppression systems for added protection
- Water held outside critical equipment areas and is not directly above equipment
- Fail-safe alarm system to prevent false discharge or tampering of system when armed
- Server room has been fire-protected on all 4 walls to prevent fire creep from outside source
- Zone-specific discharge of pre-action systems to limit negative effect of a discharge

## Security Specifications for Datacenter:

NetSource is committed to providing the highest level of security to safeguard your equipment 24 hours a day. With multiple levels of security, entry into the data center is restricted by proximity cards and access codes. Video surveillance and stringent data center escort requirements protect server access and our client's equipment. NetSource maintains over 90 days of electronic video coverage that can be reviewed at any time. Come in for a tour and find out why so many businesses choose NetSource to safeguard their equipment.

- Cement building with no windows in datacenter prevents entry or viewing of equipment
- No datacenter walls to the exterior of building
- No signage describing NetSource's data center services on outside building
- Intrusion detection alarm systems in place throughout the datacenter
- Event driven, fixed mount digital Closed Circuit (CCTV) with digital archive
- All entry, exit, and datacenter locations under video surveillance 24/7
- Fail-safe alarm system to prevent tampering of system
- Key card and Code Access required to enter datacenter at all times
- Database of individuals authorized to access the facility is used and monitored
- Every individual rack in the datacenter is always locked with access code and key
- Emergency pager and phone support to all clients for emergency priority
- All access is electronically logged into a NetSource client database via keycards.

## Datacenter Operations Control Center Specifications:

NetSource has a state-of-the-art NOC to view and monitor our entire system. NetSource employs professional system administrators that have been trained on emergency techniques and management of the network and Windows and Linux servers.. NetSource provides all of our clients 24/7/365 technical support in person or on the phone, and we also have a support ticket system . NetSource has experience with small, medium, and Fortune 500 clients.

- Continuous monitoring of systems and failure alerts for fast repair
- State-of-the-art high resolution data audio/video screens to monitor data
- Command consoles for control of local and remote systems in datacenter
- Secure, highly restricted access to operations center by trained staff only
- Monitor and control of environmental systems - ex. electrical and cooling
- Network systems 24/7/365 monitoring and management to ensure up time
- NetSource has highly trained system administrators on staff at all times
- Control Center (NOC) built from the ground up as a datacenter control room

## Misc. Datacenter Conveniences For NetSource Customers:

NetSource offers items like roof access for customer antennas, customer convenience rooms, and other features that provide an added level of service for our customers. For example, NetSource has a customer convenience room that will allow you to work quietly, eat lunch, or make a cup of coffee. We have conference room space if you need to have a company meeting at NetSource. If you have specific questions about our datacenter, please feel free to call us at any time. You can schedule a tour at anytime by calling 866-778-1212.

# Data Center Overview Document



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- Full roof rights for antenna installations if your hosting environment needs access
  - We can mount most types of antennas with proper documentation and advanced planning
  - Roof portals for waterproof cable entry so that installation is easy and effective
  - Satellite or Cable TV can be brought into our center for specific needs
  - Special customer convenience room with kitchen, bathroom, and quiet areas to work
  - On-site office space setup room that can be reserved for current customers
  - Conference room with audio / visual facilities that can be reserved for special meetings
  - Fully functioning crash-carts in the datacenter so you don't need to bring your own equipment
  - Staffed system administrators to answer your questions or meet with you on your setup
  - Access to all major telecommunications providers in the building.
  - Datacenter is kept clean and dust free to ensure proper equipment functionality