

Midlands Data Center White Paper

With this White Paper you can view Categorized Topics and Frequently Asked Questions and Answers about the Midlands Data Center. If you have any additional questions or need further clarification, please email us at sales@cosentry.com

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General FAQ's

What factors that influenced the decision to build the regions only hardened Tier IV data center?

CoSentry has a history of listening to our Clients and being responsive to their expectations. Client's who have continued to push the envelope on requirements for service levels that start with an always on and always connected computing environment, all day, every day. CoSentry understands that the foundation of our business has its roots in delivering Infrastructure as a Service (IaaS) and that five 9's is just not good enough. The Midlands facility and infrastructure are designed to achieve an industry leading six 9's reliability rating, a rigorous standard that less than 1% of the data centers in the world have achieved. A standard that will meet the future computing environments our Clients and their Customers will require as they leverage the hardware and software platforms currently under development by the industry's leading manufacturers.

It should be noted that the Midlands facility and infrastructure is designed to achieve six 9's reliability however, any risk analysis of a facility's resiliency should also account for the human component with regard to facilities operation. Midlands has been designed to minimize the impact of accidental events caused by human error and therefore the potential impact that an error might have with regard to IT uptime. The analysis required to adequately model risk factors related to human error is significantly complex. As such, those elements of human error not related to standard operational activities (deliberate attempts to disrupt normal operations, etc.) have not been factored in as they might relate to the Midlands six 9's rating.

What is the difference between five nines and six nines in terms of down time?

A five 9's (99.999%) data center should be expected to have 5 minutes per year of down time. A six 9's (99.9999%) data center would be expected to have a ½ of one minute of down time per year. Put another way, a six 9's data center has a reliability that is 90% better than a five 9's data center. As an additional reference point, over 80% of the data centers in operation today would actually only be rated at a four 9's or less and would be expected to have 50 minutes per year (or greater) down time.

When will Midlands be available for occupancy?

January of 2010.

There are a number of different pricing models being offered. How does Midlands price its cabinets?

Midlands has the same pricing model as the other CoSentry data centers. Pricing is in three components: the cabinet, circuits and power usage (either actual or tiered). You can use the quick quote button on the landing page of the CoSentry web site to get a price for a cabinet at Midlands and for any other CoSentry data centers.

What economic incentives does Nebraska offer to help subsidize my expenses at the Midlands Data Center?

The state of Nebraska has aggressive business incentive programs to attract and grow business within the state. These incentives can offset up to 100% of state income taxes, sales taxes, payroll withholding taxes and certain property taxes for up to 15 years. In addition, Nebraska has job training program incentives for businesses adding employees in the state. For more information and program specifics go to SelectGreaterOmaha.com.

What are the individual suite specifications?

- 240, 42" deep cabinets
- 750 KVA of conditioned power
- 3,000 watts per cabinet on average
- 20,000 watts maximum per cabinet
- 300 tons of cooling

What are my options if I want a full suite? Can I own my suite rather than lease space?

At Midlands, traditional collocation options include leasing a few U's in a cabinet, a cabinet, leasing multiple cabinets or a complete suite. Each suite is designed to support up to 240 cabinets that are 42" deep with an average of 3,000 watts of conditioned power available per cabinet for a total UPS power availability of 720KVA per suite. In addition to the traditional collocation agreements, CoSentry is offering, on a limited basis, suites under either a capital lease or condominium style ownership structure.

Given the timing of the construction and the purchasing power of the stakeholders how does the Midlands Data Center compare to other data centers with regard to construction costs?

The Uptime Institute has published a white paper on construction costs for data centers. The Uptime Institute estimates that it costs \$11,000 per kW for a Tier II data center and \$22,000 per kW for a Tier IV data center. The Midlands data center significantly exceeds the Uptime Institute Tier IV requirements but with a construction cost of the Tier II data center (50% less than the Tier IV data center). Simply put, CoSentry can offer Clients the reliability of a data center that exceeds Tier IV standards at a price point based on the costs of a traditional Tier II facility.

[Link to Uptime Institute white paper on dollars per kW](#)

What managed services are available at Midlands?

- Remote & Smart Hands
- Backup - Tape and Electronic
- Bandwidth - Internet and Private Network
- CoSentry Secure Inter Site Backbone

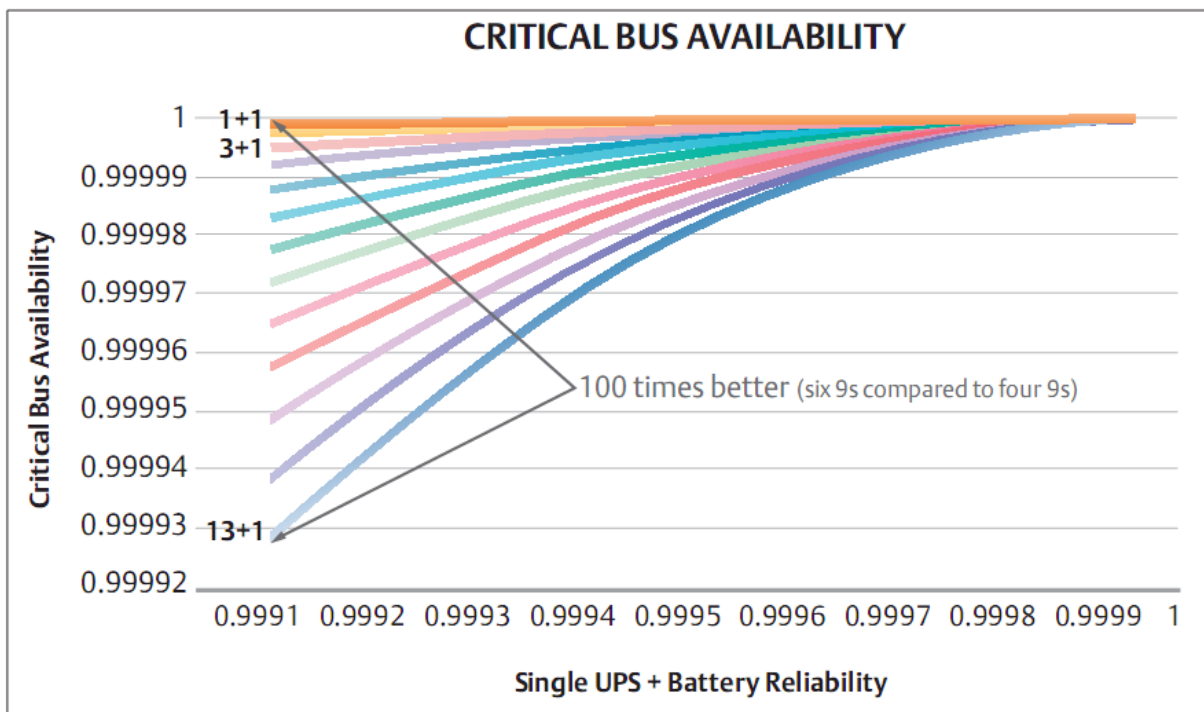
- Virtual Server Resources
- Server Management
- Technical Help Desk
- SAN Services

Midlands Design

It looks like you may have over built this facility at least as it pertains to my needs. I understand why five nines is no longer the goal of a Tier IV data center but isn't the redundancy required to deliver 100% uptime prohibitively expensive?

There are several aspects that are important to consider when addressing this question. First, Midlands was built leveraging the purchasing power of a partner who at any one time has over five hundred million dollars in active construction activity. They buy a lot of concrete and steel and, as a result, Midlands received very favorable pricing for these commodities. Second, Midlands's construction contracts were awarded during a significant slowdown in the construction industry affording deep discounts. Third, CoSentry combined the Midlands electrical and mechanical purchases with several other of its data center expansion projects. Lastly, copper prices (one of the most prevalent commodities in any data center construction for power and cooling) were at a five year low during the bid process. In summary, the timing of the construction of the Midlands Data Center was favorable from a cost and delivery perspective and, as a result, Midlands Data Center clients are getting a hardened Tier IV data center designed to exceed .99999 UPS availability at affordable prices. The UPS availability chart that follows is from a Liebert white paper. According to the Liebert white paper, the Midlands UPS design is a six 9's system design. Link to Liebert white paper:

<http://www.liebert.com/common/ViewDocument.aspx?id=78>



What are some factors I should consider when deciding to invest in an upgrade of my facilities or to leverage the economies of scale CoSentry offers in its network of diverse data center facilities?

CoSentry has templates for Clients to use to evaluate the build vs. buy decisions on data center facilities. In addition to the capital investment decisions, there are realizable economies of scale in leveraging CoSentry's managed services capabilities and significant reduction in OPEX that running a 7x24 data center facilities requires. Perhaps the most significant reason to consider utilizing CoSentry as your collocation facility is the changing computing environments. For example, an environment that is on average running at 1,500 watts per cabinet is estimated to escalate to a projected next generation of 20,000 watts per cabinet. Midlands was designed and constructed to accommodate the next generation computing environment for our International Client base. A facility that sets the industry standards for the service levels required to deliver on the commitment to provide the Infrastructure as a Service (IaaS) offerings that our Clients and their Stakeholders are requiring.

Given the pounds per ft² required for data centers, why was Midlands designed as a two story building?

The building was designed as a two story because the length of the copper runs was significantly reduced in this type of design. Conversely, the cost of the additional concrete and steel was less than the cost of the additional copper required for the longer runs in a single story design. NOTE: All of the floors and the roof at Midlands are designed for a weight load of 250 pounds per ft².

Who is Alegent Health and what is their role in the Midlands data center project? What drove Alegent to select CoSentry as a partner?

Alegent is a partner in the ownership of the Midlands Data Center facility. Alegent Health is the largest not-for-profit, faith-based healthcare system in Nebraska and southwestern Iowa with nine acute care hospitals, more than 100 sites of service, over 1,300 physicians on its medical staff and roughly 9,000 employees. Alegent Health is ranked first in the country in quality and patient satisfaction according to the Network for Regional Healthcare Improvement (NRHI). Alegent required a facility that would be always on and always available for critical health care applications and medical records that require immediate availability today and for decades in the future. In addition, Alegent was looking for a partner to gain some economies of scale by combining their data center needs with a firm who could design, build and manage a data center that would be state-of-the-art and would remain so for the foreseeable future. By partnering with CoSentry, Alegent significantly reduced their projected build costs for a standalone data center (by at least 30%), significantly reduced their OPEX for operating their own proposed data center (by up to 75%) and can focus their management efforts on health care rather than the operation of a data center 24x7. Link to Alegent site:

<http://www.alegent.com/body.cfm?id=5465&action=detail&parent=706>

What are the specifics of your 7x24 monitoring and reporting?

CoSentry proactively monitors all critical infrastructure components with our advanced and proprietary SolutionsDesk Active Performance Monitoring and Reporting software. This software monitors events, trouble tickets and provides service level reports on the following:

- Power distribution paths – power grids, switchgear, ATO
- UPS Systems
- Generators and fuel tanks
- Static Switches and PDU's
- Remote Power Panels
- Cabinet level circuit loads
- Fire suppression
- Cooling and pumping systems
- CRAC cooling and humidification
- Water detection
- Environmental quality, air temperature and quality
- Security, physical access, video, tracking logging and reporting
- Network elements and network providers

Midlands Green Standards

How green is Midlands? Will Midlands be LEED (Leadership in Energy and Environmental Design) certified?

Overall, the Midlands Data Center is conservatively at least 50% more efficient than the average data center currently in operation in the US. Midlands is designed to leverage the temperate climate of the north central US for three season “free” water chilled cooling. In addition, each of the data center suites is 20’ deck to deck, which facilitates an optimal design of efficient air movement within each suite. The design includes: 3’ raised floor, hot aisle/cold aisle, 11’ tile to tile, blanking panels in all open cabinet spaces and 6’ return air plenums.

Pursuing LEED certification for a data center is not currently practical given the power consumption per ft² in a data center unless the data center is part of a much larger office building (i.e. the data center is a small percentage of the overall building footprint of the office building). LEED is working on a standalone data center certification and has released a draft document, Data Center EPC, which is based on LEED NC 2.2. It is expected that a final Data Center EPC document will be released by LEED by the time the Midlands Data Center becomes operational. The Midlands design engineers have reviewed the current Data Center EPC draft document and this preliminary review indicates that the Midlands Data Center may achieve the proposed points required for LEED data center EPC status.

[Link to LEED document](#)

Midlands Power and Cooling

Power and cooling are two of the key components in my decision making process. Will you have enough of both to meet my future needs and how do you charge for actual power consumption?

CoSentry offers clients a choice on how they want to be billed for power. Clients can choose a fixed rate (average rate based on circuits installed) or a variable rate (which charges for the actual power consumed). Some clients prefer the fixed monthly rate for ease in payment processing while others prefer the variable rate based on actual usage for overall cost containment. The Midlands facility has 10 megawatts of power available so it is unlikely that power availability will be an issue in the future.

Why did you choose a water based CRAC system over the direct expansion (DX) systems? Isn't putting water into a data center environment a potential operational hazard?

A chilled water system is at least 40% more efficient than a compressed gas system. However, the breakeven for these efficiencies vis-à-vis the upfront costs is not realized (at today's electrical rates) unless the power consumption of your IT equipment is at a scale of two megawatts of power. As a result, smaller data centers, that are less than 10,000 ft² drawing 150 watts per ft² of IT load do not generally use water based systems for CRAC cooling.

The Midlands Data Center has all of the CRAC units located in maintenance corridors adjacent to the data center suites so there are no water lines/pipes in the data center suites. With redundant water supply lines, leak detection systems and constant monitoring all possible risks and hazards have been mitigated.

Why are the north central states repeatedly cited as an ideal place to locate a data center?

Four primary reasons:

1. Abundance of inexpensive, reliable and locally produced power from diverse sources (coal, wind and nuclear)
2. Three season climate that can be leveraged for "free" cooling
3. Reasonably priced, highly trained and motivated technical work force
4. Cost effective and efficient solutions in building design are available to avoid and mitigate natural disasters in the North Central region (floods, ice and snow storms, high winds and tornados, note: the damage from tornados is generally limited to a relatively small geographic area). All of which the Midlands has been designed to handle. When compared to the Midwest, other regions have large scale and re-occurring natural disasters such as earthquakes and hurricanes which can decimate infrastructure for hundreds of square miles with one incident and are very difficult to be cost effectively mitigated.

What is a Catcher Bus electrical design and why is it important to me?

The Catcher Bus design takes advantage of the latest technology in providing resilient, truly compartmentalized electrical components. Each suite at Midlands has its own compartmentalized and segregated UPS providing the normally active path to the active PDU's on the static switches for the suite. A standby path is powered by a separate UPS, which provides power to the standby PDU on the static switches for each of the suites in Phase I of the Midlands data center facility. The Catcher Bus design replaces a more traditional Ring Bus design and although it costs about 30% more, it is significantly less complex and provides a higher degree of fault tolerance/resiliency (the cascading effect of UPS failures is eliminated with the Catcher Bus design vis-à-vis the Ring Bus), and allows for simpler maintenance and greater isolation of any equipment faults. For more information, please refer to the Catcher Bus white paper on the CoSentry Web site. [Link to catcher bus white paper](#)

What is the maximum kW per cabinet I can get at Midlands?

While there is plenty of conditioned UPS power, the issue is not really how many kW are available per cabinet rather about cooling extreme density cabinets. Set up properly, the Midlands Data Center can cool a cabinet with 20,000 watts of power draw.

What are the UPS batteries run time ratings at full load and why did you choose UPS over flywheel technology?

The batteries can be carried for twelve minutes at full load (eight minutes at full load on the suite UPS with an additional four minutes per suite on the Catcher UPS) allowing time for the redundant generators to start and/or the power grid ATO to switch over. This compares to only a few seconds with rotary (flywheel) technology. The Midlands Data Center utilizes paralleling technology in its design and as such a soft transfer is accomplished eliminating any hit the UPS system may take when the transfer is made from the generator. An N+2 UPS design was chosen over the rotary in an N configuration as it is a more reliable technology and not cost effective to install a 2N rotary configuration.

Why are dual power grids important?

The availability of a second power grid is of critical importance in the design and operation of an always-on data center. A significant percentage of electrical infrastructure failures in data centers are a result of cascading effects due to the loss a power feed from the grid. Having two grids also improves RTO's due to natural disasters and disruptions to underground utility services.

How do I determine the kilowatt load my circuits will support?

The following chart shows the relationship between single and three phase power feeds and the associated kilowatt load they will support when de-rated by 80% per UL/NEC requirements. Additional

information about heat load, air conditioning requirements and air volume requirements are also included for reference.

| Amps Not Derated | Volts Nameplate | Volts Actual Delivered | Phase | Watts | 80% Rule Derated Watts | kW-Kilowatts* (V x A/1000) | kW per NEC** (kW x 0.8) | BTU / hr (kW x 3414) | AC Tons*** (BTU / 12000) | Air Volume**** (120 CFM / kW) |
|---|-----------------|------------------------|-------|-------|------------------------|----------------------------|-------------------------|----------------------|--------------------------|-------------------------------|
| 15 | 125 | 120 | 1 | 1800 | 1440 | 1.80 | 1.4 | 4,916 | 0.41 | 168 |
| 20 | 125 | 120 | 1 | 2400 | 1920 | 2.40 | 1.9 | 6,555 | 0.55 | 228 |
| 30 | 125 | 120 | 1 | 3600 | 2880 | 3.60 | 2.9 | 9,832 | 0.82 | 348 |
| 20 | 250 | 208 | 1 | 4160 | 3328 | 4.2 | 3.3 | 11,362 | 0.95 | 396 |
| 30 | 250 | 208 | 1 | 6240 | 4992 | 6.2 | 5.0 | 17,043 | 1.42 | 600 |
| 60 | 250 | 208 | 1 | 12480 | 9984 | 12.5 | 10.0 | 34,085 | 2.84 | 1200 |
| 20 | 230 | 230 | 1 | 4600 | 3680 | 4.6 | 3.7 | 12,564 | 1.05 | 444 |
| 30 | 230 | 230 | 1 | 6900 | 5520 | 6.9 | 5.5 | 18,845 | 1.57 | 660 |
| 60 | 230 | 230 | 1 | 13800 | 11040 | 13.8 | 11.0 | 37,691 | 3.14 | 1320 |
| 20 | 120/208 | 208 | 3 | 7197 | 5757 | 7.2 | 5.8 | 19,656 | 1.64 | 696 |
| 30 | 120/208 | 208 | 3 | 10795 | 8636 | 10.8 | 8.6 | 29,484 | 2.46 | 1032 |
| 35 | 120/208 | 208 | 3 | 12594 | 10076 | 12.6 | 10.1 | 34,398 | 2.87 | 1212 |
| 60 | 120/208 | 208 | 3 | 21590 | 17272 | 21.6 | 17.3 | 58,968 | 4.91 | 2076 |
| 80 | 120/208 | 208 | 3 | 28787 | 23030 | 28.8 | 23.0 | 78,624 | 6.55 | 2760 |
| 100 | 120/208 | 208 | 3 | 35984 | 28787 | 36.0 | 28.8 | 98,280 | 8.19 | 3456 |
| 120 | 120/208 | 208 | 3 | 41811 | 34545 | 43.2 | 34.5 | 117,935 | 9.83 | 4140 |
| 20 | 230/400 | 230 | 3 | 13800 | 11040 | 13.8 | 11.0 | 37,691 | 3.14 | 1320 |
| 30 | 230/400 | 230 | 3 | 20700 | 16560 | 20.7 | 16.6 | 56,536 | 4.71 | 1992 |
| *3 Phase power is calculated by multiplying single phase by the sq-root of 3 or 1.73 | | | | | | | | | | |
| **ULNEC de-rates power distribution by 20% (.8) for Information Technology Equipment | | | | | | | | | | |
| ***Tons of Air Conditioning required to remove heat from associated IT load. | | | | | | | | | | |
| ****The volume of air that is typically required by the IT equipment for each kW of IT load. Airflow requirements for the IT equipment can typically range from 80 to 140 CFM per kW. | | | | | | | | | | |

How does wattage relate to heat in a cabinet?

Heat and power are both measured in watts. Almost all electrical energy used in computing is converted to heat. A typical computer power supply is about 70-80% efficient. This means that for every 100 watts it draws, between 20 and 30 watts are converted directly into heat without ever being used the computer. As the computer processes information, the rest of the power is dissipated throughout the system as heat. In addition, computer power supplies are typically most efficient at ~80% of their maximum rated load. Since all power can be counted as heat, adding the watt ratings of all equipment in a cabinet will give a relatively 1:1 relationship to heat generated. I.E. 40 servers x 300 watts each = 12,000 watts (12kw) heat.

Midlands Uptime Institute Rating

How would Midlands rate on the Uptime Institute scale?

The Uptime Institute has six basic criteria for a Tier IV designation and Midlands exceeds these guidelines:

1. The active capacity components to support the IT load must be N after any failure - *The Midlands Data Center conditioned power UPS is N+2 after any failure.*
2. The facility must have two simultaneously active distribution paths (A & B circuits - *In addition to A & B circuits, Midlands is fed by two diverse power grids (not a Tier IV requirement.)*)
3. The infrastructure supporting the IT load must be concurrently maintainable (any one component taken off line for maintenance and the IT load is still active) – *The Midlands Data Center Catcher Bus design significantly improves on the manageability of this requirement as all of the UPS maintenance can be done without taking the critical load to bypass.*
4. The infrastructure supporting the IT load must be fault tolerant (any one component can fail and the IT load is still active) – *The Catcher Bus design significantly improves on the deliverability of this requirement as the cascading effect of UPS failures is removed vis-à-vis the Ring Bus design.*
5. All critical electrical components must be compartmentalized with the exception of the ATO – *Each UPS is housed in its own room with fire rated walls that are suppressed with inert gas not dry pipe significantly reducing RTO's should the fire suppression system be activated.*
6. Continuous Cooling (load density dependent, N+1) - *Each suite at Midlands has floor space for 240 cabinets that are 42" deep and 2' wide. In addition, each cabinet has 3,000 watts of conditioned UPS power available. The CRAC units supporting each suite are compartmentalized in two maintenance rooms adjacent to each suite and are 2N after any failure based on 240 cabinets drawing on average 3,000 watts of power.*

Link to Uptime Institute on data center tier classifications:

[Link to Uptime Institute white paper or tier classifications](#)

In addition to the Tier IV recommendations what other requirements does CoSentry feel should be included in the requirements for a Tier IV facility offering?

1. Dual power grids
2. Hardened facility
3. Single purpose facility
4. N+1 in connectivity
5. Multi-layered security with offsite monitoring, 360° controlled perimeter access and PCI DSS v1.2 physical security compliant
6. Location outside 500-year flood plain (The Midlands Data Center is located outside of this zone)
7. SAS 70 Type II Certification of processes and procedures

What do you mean by the Midlands being a hardened facility?

Midlands was designed and built to withstand the regional elements as well as high winds and ice storms. The facility and supporting infrastructure is designed to withstand 250 mph winds and the roof has a double membrane to insure vapor proof roof integrity even in the event of severe storm activity.

Why is a single purpose facility important?

The risk of a facility-wide issue that could impact data center operations increases exponentially as you introduce additional businesses or business functions into the facility. Any elements which can be eliminated that can impact the operation of the facility improves the always on, always available resiliency of any data center. Single purposed facilities help insure 100% availability when five 9's (99.999%) are no longer good enough. Midlands is designed for a single purpose, high availability data center.

What are the details of the Midlands N+1 in bandwidth capabilities?

Midlands has two compartmentalized redundant Telecommunications rooms, both fed from diverse concrete encased fiber entrances into the facility fed by multiple carriers. Should one of the Telco rooms go off line, the other room can handle the load. Should any one carrier go off line, the other carriers in the network can handle the bandwidth required to insure always on connectivity.

What is multi-layered integrated security?

Midlands has multiple levels of physical and electronic security integrated and managed 7x24 both on site and off. Facility access requires pre-screened, visual confirmation, acceptance of security policies, government issued identification verification, validation of access rights and badges. Individual movement within the facility is controlled with biometric recognition systems and doors with magnetic locks requiring pre-programmed security badges, which limit access to all security zones. Intra-facility movements are physically monitored, electronically tracked, automatically recorded (video and card access logs and records) and archived utilizing SolutionsDesk SentryGuard infrastructure. The security station and Service Desk Operations provide 7x24 facility security. The CoSentry Southroads Service Desk and Network Operations Center provide 7x24 backup.

Will Midlands be SAS 70 Type II (AICPA standards) certified? What certifications are available at Midlands and how might it enable clients to achieve compliance with other certifications and audit requirements?

The Midlands Data Center will be SAS 70 Type II (AICPA standards) certified. In addition, the Midlands Data Center will be compliant with PCI DSS v1.2 requirements for physical security and other major financial security and audit standards enabling our clients leverage in achieving their own various requirements. The Midlands Data Center will also enable clients to achieve their requirements with

GLBA, Sarbanes Oxley and HIPAA utilizing the established process currently in place at CoSentry's other data centers.

Midlands Critical Infrastructure Specifications

What are the specifics on the critical infrastructure deployed at Midlands?

Liebert UPS

- Four 750KVA UPS's (UPS-1A & UPS-2A) Series 610, Model U39SA751AAAP
- Three 750KVA UPS (Catcher Bus) Series 610 (Three 750KVA UPS's in multi-mode), Model U39MM751AOAP
- Wet Cell Battery systems for each UPS rated for 8 minutes at full load

Liebert CRAC's

- Forty-three - 30 Ton Chilled water cooled, variable speed, down flow (10 systems per suite) Model FH740CIAAEI
- Dual path chilled water delivery systems
- Onsite reserve Water

Liebert PDU's

- Sixteen 300KVA 800amp redundant PDU's (4 per suite) model STP8CRJ12N

Liebert Remote Distribution Centers (RDC's)

- Eighty RDC's (20 per suite, model RDC742SB15)

Detroit Diesel Generators (Interstate Power Systems)

- Two 2,250KW Generator (model 2250RXC6DT2) with 3,800-gallon fuel tank for 72-hour operation at full load
- One 2,500 KW Generator (model 2500RXC6DT2) with a 4,200-gallon fuel tank for 72-hour operation at full load

Baltimore Aircoil Cooling Tower

- Three cooling tower cells, model 3552C

Carrier Chillers

- Three 550 ton centrifugal water chillers, model 19XRV4646372KEH64

Sapphire Novec 1230 fire suppression in an N+1 configuration for data center suites and UPS rooms

- Clean agent fire suppression in all electrical rooms (including UPS), and Telco rooms in addition to the data center suites
- Zero ozone depletion potential
- Lowest atmospheric lifetime for halocarbon alternatives – 5 days
- Global warming potential of 1
- Sustainable technology that has the greatest margin of safety

Cisco Carrier Class Network Infrastructure

- Network Core consisting of dual Cisco 6506-E VSS IOS with SUP720-10G-3CXL
- Edge Routing consisting of Cisco 7606-S with RPS720CXL

- Access Layer switching consisting of Cisco 3750E-48-TD-S per suite
- Firewalling consisting of dual Cisco ASA5520 with IPS

Cisco Access and Video Security system

- Cisco video surveillance IP cameras
- Cisco video surveillance integrated services platform
- Cisco physical access control
- Cisco physical access manager
- IP enabled technology converges voice, data and physical security into a modular system
- Manage remotely thru web supported clients
- Supports push to talk communication
- Integrated Layers of Security -Bio metrics, card access and cameras

Midlands... the Future Computing Environment

Does Midlands reshape the CoSentry mission statement ... *your trusted source for the high availability infrastructure and collaborative technical solutions essential for a resilient, always on, business environment..?*

In our view, Midlands was designed and built for the next generation of computing ecosystems - Infrastructure as a Service (IaaS) offerings and, as such, extends the life cycle of our mission statement.

Can you provide an example of the type of computing environment you are referring?

The consortium that consists of VMware, Intel, Cisco and EMC has created a product offering which will condense data centers with hundreds of servers and cabinets into a few cabinets and storage devices. This solution is literally a virtual data center in a cabinet with VMware vSphere enterprise software, Cisco UCS virtual Servers platform backed up with EMC high performance storage solutions. This solution requires a facility or multiple active/active facilities that can deliver 100% uptime. With all your eggs in one basket, anything less will mean catastrophic down time for the entire enterprise. Midlands is positioned to provide Infrastructure as a Service (IaaS) offerings.

What advantages/benefits does CoSentry offer in the Cloud computing environment?

CoSentry offers a secure private cloud computing environment with our network of four data centers. CoSentry's Inter Site Backbone Network enables our clients to leverage all of the technologies of the cloud computing environment with the added benefit of secured facilities that are PCI DSS v1.2 compliant, a certification that is a requirement for many of our clients who are managing financial records.

As virtualization decreases the number of devices under management and the number of cabinets I will require over the next year to 18 months, how can CoSentry help to reduce my footprint and as a result, my collocation costs?

CoSentry has worked with a number of clients who have significantly reduced the number of cabinets at our facilities over time due primarily to virtualization and/or outsourcing managed services (i.e.: storage) to CoSentry. CoSentry can customize an offering that allows you to reduce your cabinet requirements over time while adding significant capabilities and capacity to your computing environment along with insuring that your service levels are achieved all day, every day.

Does CoSentry offer a multi site active/active solution?

Yes. In addition to the Midlands Data Center, CoSentry has three other data centers that are all connected with high capacity fiber. We have many clients who are utilizing our economical bandwidth

rates and multiple sites to facilitate active/active and/or electronic storage strategies. CoSentry has data centers in Kansas City MO, Sioux Falls, SD and Bellevue NE.