Department of Information Systems

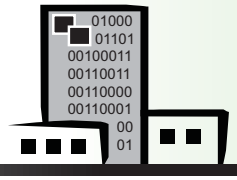
State Data Center Project

As a result of studies performed on the current statewide data center and network, DIS is procuring preliminary design services for a new mission critical Tier III State Data Center facility to benefit the State of Arkansas. The aging status of the existing data center located in the MAC building, along with the need for higher reliability and availability of all critical state data and systems and disaster recovery of state government IT services, creates the need to take a future look at the state's technology facility needs and requirements.

DIS is currently working across state government to research ways to design and provide a mission critical data center facility to benefit the State of Arkansas. A Request for Qualifications (RFQ) was recently released in an effort to procure a requirements analysis and feasibility study for a new State Data Center. For further information regarding the need for a new State Data Center, please see the document provided below.

If you have any questions regarding the RFQ or the State Data Center Project, please contact your Customer Account Representative.

State Data Center Project



Reliability + Availibility + Maintainability + Predictability + Scalability = Cost effective delivery of public services

In an effort to focus on our vision of **customer satisfaction every time** and to meet the growing technology needs for the State of Arkansas, DIS is currently working across state government to explore options for a new State Data Center. The aging status of our existing data center and public sector data centers across our state's technology infrastructure creates the need to take a future look at our technology facility needs and requirements.

We are researching ways to design and provide a mission critical data center facility with Tier III reliability and availability to benefit the State of Arkansas. A new State Data Center with enhanced redundant power and cooling infrastructure would increase cost efficiencies for the state, provide additional space for growth to meet future technology needs, significantly decrease the amount of critical system downtime, and meet disaster recovery needs for critical state systems.

"Concurrent maintainability" is a key phrase when discussing mission critical data centers today. Tier III data centers and above provide the advantage of taking down a data center for maintenance or other work without directly affecting ongoing processing or the end-user. A new State Data Center with enhanced redundant power and cooling to provide concurrent maintainability would allow for consistent uptime of critical state systems.

According to a study by the US Department of Energy and Environmental Protection Agency, data centers used 61 billion kWh of electricity in 2006, representing 1.5% of all US electricity consumption and double the amount consumed in 2000. Based on current trends, energy consumed by data centers will continue to grow by 12% per year. The Green Grid, a non-profit trade organization of IT professionals focusing on power and cooling requirements for data centers and the information service delivery ecosystem, states that data center power and cooling are two of the biggest issues facing IT organizations today. A new State Data Center focused on "green" IT would provide a way to control these costs while enabling future expansion.

The current State Data Center is in a state of need.

- The State Data Center managed by DIS is currently housed in the Multi-Agency Complex (MAC), which is 28-years old and will not support infrastructure upgrades from a Tier I level data center to a Tier III level. Data centers designed and built in the 1970s do not meet today's technology needs.
- The MAC building is a multi-agency building with public access.
- Aging electrical and cooling system infrastructures are becoming high risk factors for failure and are not energy-efficient.
- Space for expansion of the State Data Center is limited within current facilities.
- There is a lack of diverse electrical feeds to the current data center at MAC, as well as a lack of diverse routes for the state network.

Why are we exploring options for a new State Data Center?

- With the continuing emphasis on technology and the 24 X 7 X 365 availability of mission critical state services, we need to evaluate the long-term stability and goals for our State Data Center.
- The current Tier I Classification of the State Data Center is rated at 99.67% site availability, which equates to 28.8 hours annual "site-caused" downtime of critical IT services. The Tier III level site availability is rated at 99.98%, which equates to 1.6 hours annual "site-caused" downtime of critical IT services.
- Needed repairs to electrical and cooling systems at MAC will require future scheduled downtime of the current data center. As electrical and cooling systems age further, these scheduled outages will continue. In a Tier III data center facility, redundant electrical and cooling systems would allow for maintenance with no scheduled downtime of critical systems.
- According to data center best practices, it is no longer possible to maintain a secure "state-of-the-art" data center located in a public access building.
- Data centers across state government may not have disaster recovery or redundant power.
- The nearly 29-year old electrical and cooling infrastructures within the MAC building do not meet today's energy efficiency preferences and limit a migration to a "green" data center.

Current Tier I classification vs. New Tier III classification*

	Current State Data Center - Tier I	New State Data Center - Tier III
Building Type	Tenant	Stand-alone
Electrical Distribution Paths	1	1 active and 1 alternate
Concurrently Maintainable (data center can be shut-down and kept down for a period of time, without directly affecting ongoing processing)	No	Yes
Representative Planned Maintenance Shut-downs	2 annual events at 12 hours each	None required
Representative Site Failures	Average 6 failures over 5 years	Average 1 failure every 2.5 years
Annual Site-caused, End-user Downtime (based on field data)	Average of 28.8 hours	Average of 1.6 hours
Resulting End-user Availability (based on site-caused downtime)	Average of 99.67%	Average of 99.98%

**Uptime Institute 2008 White Paper "Tier Classifications Define Site Infrastructure Performance"*

What are the benefits of a new State Data Center?

- A Tier III rated facility would significantly decrease the amount of downtime of critical hosted systems.
- Upgraded electrical and cooling infrastructures would lower electrical usage, decreasing the amount of state dollars expended, and would increase energy-efficiency, lessening the carbon footprint of the data center and meeting some requirements for a "green" facility.
- Critical public safety systems, including the Arkansas Wireless Information Network (AWIN), could continue to expand without electrical supply limitations.
- A new State Data Center located according to best practices would be a more physically secure facility.
- Additional space in a new State Data Center would provide for future technology needs and horizontal expansion.
- The establishment of a new State Data Center and an additional secure data center facility would be designed to meet disaster recovery needs.
- A data center designed with a focus on RAMPS (Reliability, Availability, Maintainability, Predictability, and Scalability) ensures increased uptime.

What information will the feasibility study for a new State Data Center provide?

- Preliminary plans and specifications in order to budget for a new facility with multiple buildings/components: one building/component for a new mission-critical, Tier III State Data Center; another building/component for state agency offices and a warehouse.
- Analysis of computer and network hardware space, operational functions, electrical and mechanical capacity, utility and reliability alternatives, physical security and fire protection, site location, and a program study.
- Analysis of the level of hardened facility required to withstand possible natural and man-made disasters in the central Arkansas area.
- Development of an estimate of the maximum probable cost of detailed design, construction, and commissioning of a new facility, as well as the maximum probable cost for relocating the existing data center equipment.

Who will benefit from a new State Data Center?

All Arkansas agencies, boards, and commissions utilizing technology services and Arkansas citizens.