

Title: State of Ohio – Data Center Co-Location Service

Category: Enterprise IT Management Initiatives

State: Ohio

Contact: Spencer Wood

Ohio Department of Administrative Services

spencer.wood@das.ohio.gov

614-644-9245

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Executive Summary

The State of Ohio Computer Center (SOCC) is a 358,000 square foot, with 210,000 square feet of raised floor, four story, Tier III capable data center that was opened in December of 1991. Until 2014, the SOCC was a siloed, distributed environment of walled-off, individual agency data center “condominiums” and housed more office staff than IT assets (computer servers, storage and networking).

Ohio’s [IT Optimization](#) initiative was launched to consolidate this siloed, distributed environment to ensure a consistent statewide cybersecurity and disaster recovery posture, reduce IT costs, and increase efficiency as well as improve agency business processes. The SOCC was positioned as the primary data center for the state (as originally intended) and the cornerstone of Ohio’s Private Cloud.

Through IT Optimization, the State partnered with IBM to modernize the SOCC. Over two years, this co-managed partnership addressed power, removed walls, improved heating and cooling, increased computing and established the State’s private cloud computing environment. Facility modernization efforts were completed in March 2014. Private Cloud expansion began in the spring of 2014 with the Department of Administrative Services (DAS) Office of Information Technology (OIT) supporting 800 managed environments and through agency IT migrations, now consists of over 5,000 environments and growing. The centralization of the State’s IT assets has resulted in lower cost of IT operations, reduction of complexity/duplicative processes, as well as increased the State’s security and disaster recovery posture.

The efficiencies achieved in modernizing the data center environment positioned the State to provide the opportunity for higher education and local government to leverage the secure data center environment. Currently, The Ohio State University (OSU) and The Ohio State University Medical Center use the SOCC to support their production environments. The University of Cincinnati (UC), the Ohio Supreme Court, the Auditor of State and Ohio Legislative Information Services (LIS) leverage the SOCC for disaster recovery. Cuyahoga County will be locating their production environment in the SOCC as well. Discussions are underway with Bowling Green State University, Summit County and many more higher education institutions, local governments and elected offices. The Ohio State University and Cuyahoga County have indicated that they will achieve significant cost savings by leveraging this opportunity.

The Data Center Co-Location Service concept is a way for the State to maximize its investment in the SOCC and it also brings tremendous benefit to the participants who no longer have to maintain their own data center, freeing up critical dollars for investments in programs that directly benefit the citizens of Ohio.

Concept

In 2010, the State of Ohio had over 1,600 applications, 32+ data centers, 9,000 servers and 2+ petabytes of data stores with around the clock (24x7x365) operational needs. The State of Ohio Computer Center's (SOCC) highest usage areas in 2010 were as follows: 1) office space – 16 agency suites with staffing, administrative staff, conference rooms, coffee pots, refrigerators, etc. 2) storage – paper file storage, boxes, old PCs and computers, Christmas decorations, etc., and 3) computing power – the SOCC's main purpose. Prior to 2014, the SOCC was more of a data center condominium than a data center and housed more office staff than IT assets (computer servers, storage and networking).

Over a period of two years, this co-managed partnership addressed power, removed walls, improved heating and cooling, increased computing and established the State's private cloud computing environment. Facility modernization efforts were completed in March 2014. Private Cloud expansion began in the spring of 2014 with DAS OIT supporting 800 managed environments and through agency IT migrations, now consists of over 5,000 environments and growing. The centralization of the State's IT assets has resulted in lower cost of IT operations, reduction of complexity/duplicative processes, as well as increased the State's security and disaster recovery posture.

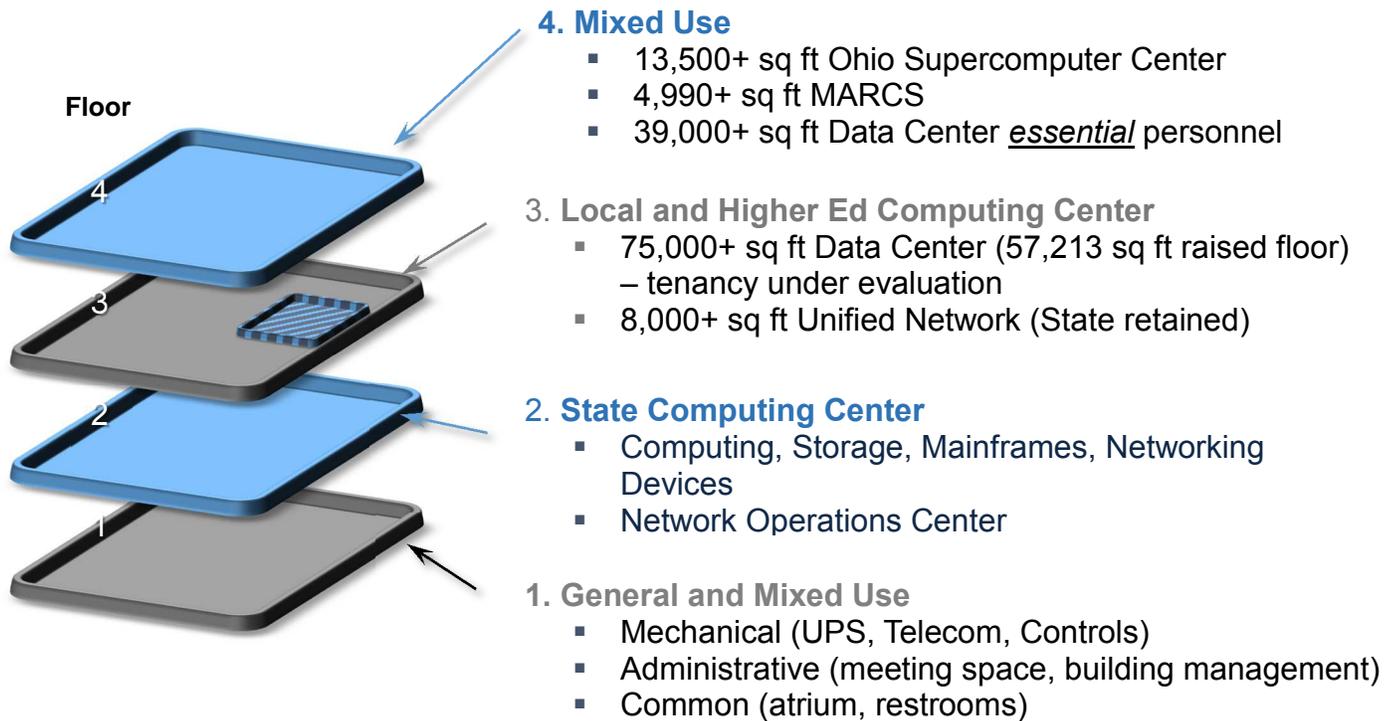
Foundational concepts:

- State use of the facility will move from current 70 ft²/computing image to less than 5 ft² (industry standard is between 0.3 and 1 server/ft²)
- The 3rd floor of the building will be vacated and made available for potential co-location service customers
- The current market for fully conditioned and powered data center floor space is on the order of \$24-32 ft² per month
- Personnel who, in the course of normal job functions, do not physically interact with IT infrastructure devices will be relocated to agency locations in early fiscal year 2015

Preliminary estimates using OSU and UC benchmarks suggest:

- 14 universities require approximately 400 racks and 900KW of power
- 24 regional campuses require approximately 116 racks and 208KW of power
- 23 community colleges require approximately 363 racks and 651KW of power
- As a conservative total: 1,000 racks and 1.8MW of power – achievable on the 3rd floor.

End-State SOCC Configuration



The updates made to SOCC as a result of IT Optimization have created the Data Center Co-Location Service opportunity. The State of Ohio is actively reaching out to its local government and higher education partners to create awareness. For example, Ohio's State CIO, Stu Davis, recently presented to the Ohio Association of Community Colleges regarding the benefits of this service. The State is always looking for opportunities to collaborate with its local partners. IT Optimization is not restricted to the traditional boundaries of state government; working together, governmental entities can deliver significant value to their constituents.

Significance

The DAS OIT Data Center Co-Location Service offers local government and higher education a Tier III capable secure data center environment with reliable uptime, power redundancy and redundant cooling to ensure uninterrupted access of critical data and applications. The SOCC is staffed and available to authorized personnel 24 x 7 x 365.

The Co-Location service continues to grow with more data center service consumers moving into the space regularly. DAS OIT currently has seven service consumers sharing the Co-Location space and others finalizing the process to move.

A report on [how to reduce college costs](#) from the Ohio Task Force on Affordability and Efficiency, stated that "all institutions must develop a plan to move their primary or disaster recovery data centers into the State of Ohio Computer Center". Due to this

recommendation, DAS OIT Leaders have had multiple meetings with higher education entities concerning their data center needs.

The Data Center Co-Location Service is in direct alignment with the goals of IT Optimization. It is focused on consolidating infrastructures, increasing efficiency, reducing complexity, and eliminating redundancies. The dollars saved through this service can now be allocated to services that directly benefit Ohioans. The Data Center Co-Location Service also aligns with several of NASCIO's 2016 priorities: Consolidation/Optimization, Enterprise Vision and Roadmap for IT, and Budget and Cost Control.

Impact

Through Ohio's IT Optimization efforts, the SOCC has become an attractive alternative to maintaining independent data centers for local governments and higher education. The SOCC, on a square footage basis, is one of the top 10 datacenters in the country. The Co-Location Service offers commercially reasonable pricing and it offers access to a pre-wired, pre-positioned and move-in ready environment.

The Ohio State University (OSU) became the first Data Center Co-Location Services Consumer in October 2014. Over a five month period, OSU tested their network and moved their racks and servers into the SOCC. The service agreement with OSU includes 550 virtual and 350 physical machines, which contained more than 550 terabytes of data. OSU has realized a 50 percent reduction in sustainable costs, saving valuable resources for the university and the State of Ohio.

OSU President, Michael V. Drake, shared in a press release that the Co-Location partnership saved the university \$40 million dollars in one-time construction costs as well as ongoing operational costs of over \$1 million dollars.

OSU originally planned to build a new data center to replace an existing facility. However, by partnering with the SOCC for data center services, they reduced risk and increased quality in a fraction of the time it would have taken to build a new facility. In addition, the partnership gives OSU greater agility. The SOCC has the resources to allow OSU to expand their current data center needs, whereas the existing facility was out of space.

Demolition of the old facility began in early February 2016 and will be reallocated to serve other university needs.

In a similar effort, Cuyahoga County completed a successful move during November 2015. By leveraging the SOCC's infrastructure, Cuyahoga County is able to consume shared IT services, including a secure hosting environment and mainframe services. Cuyahoga County is taking advantage of the partnership to upgrade infrastructure and business continuity planning. Cuyahoga County had planned to divert about \$14.7M from \$18.7M borrowed to support a demolition program to build a new data center. Instead, Cuyahoga County opted to adopt DAS OIT's co-location

services and migrate to the SOCC. Cuyahoga County has indicated that they also expect to save \$1M annually in operational costs.

The State of Ohio is leveraging its wealth of space at the SOCC to support not only the State's consolidation, but the consolidation needs of Ohio's higher education and local government communities. This is a service that benefits all parties involved. While the participants are achieving significant savings in cost avoidance, the State is able to offset its operating costs and ongoing investments through service revenues.