Information Technology Service Management in the State Data Center

State of Florida

Agency for State Technology

Category: Enterprise IT Management

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Project Completion Date: December 2015

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Executive Summary

In July 2014, Florida's Agency for State Technology (AST) was established. Included in the new Agency's responsibilities was statutory authority for the operational management of the state's two primary data centers which had previously been governed and managed separately.

The two data centers were both physically and logically separate entities:

- different facilities with different service catalogs, policies, procedures and staff and
- inconsistent service level agreements and customer service experiences.

The logical consolidation of the two data centers activities proceeded immediately. One of AST's first objectives was to address the service inconsistencies across the two data centers. Building on partial adoption of a service framework based on the Information Technology Infrastructure Library (ITIL) and best practices from the International Standards Organization and International Electro-technical Commission (ISO/IEC 20000), AST implemented Information Technology Service Management (ITSM) methodologies.

Through this initiative, AST now provides its 34 customer agencies with visibility into the State Data Center (SDC) operations through a web-based portal with detailed dashboards and custom reports presenting real-time data on service level agreement tracking, service request processing and incident management. The portal solution provides improved configuration and change management and customer self-service for many types of service estimates, have all fostered improvements in service, communication, and ultimately, customer satisfaction and confidence in the SDC system.

Additionally, the initiative has provided a strong foundation for ISO/IEC 20000 certification.

Concept

Florida's Agency for State Technology (AST) was established by the Legislature and subsequently signed into law by the Governor in 2014. A prior attempt at a centralized IT organization had established two separate primary data centers, "Northwood" and "Southwood", managed by autonomous boards of trustees and with different processes and resources. The two data centers were both physically and logically separate in different facilities with different service catalogs, policies, procedures and staff. As a result, service levels and agency service experiences were inconsistent. Having been given authority over both data centers, now collectively designated as the State Data Center (SDC), AST immediately set out to streamline services and provide customers of the SDC with a consistent and improved experience.

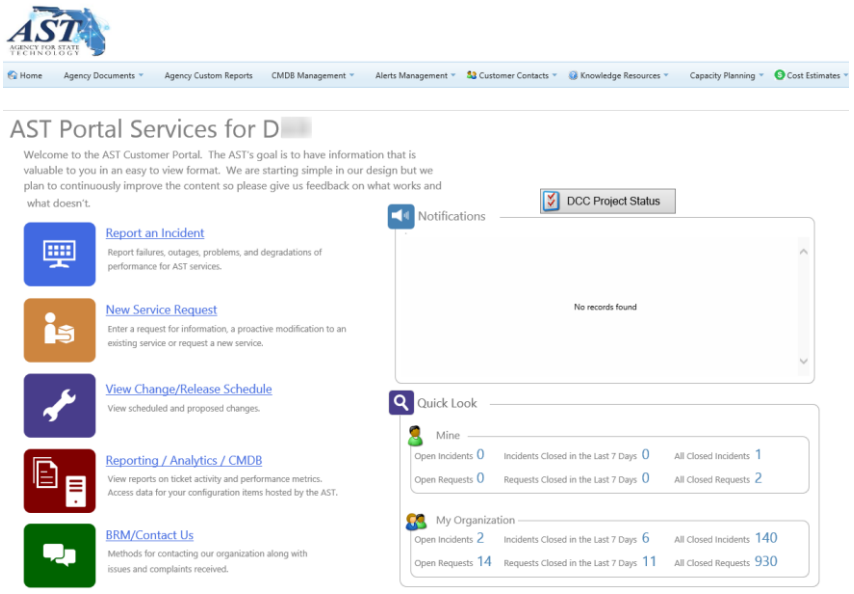
The consolidation initiative had both technical and non-technical challenges. In addition to separate and disparate staffing, procedures, and service catalogs, the data centers also had different tools, technologies, and service level agreements with their agency customers. Customer agencies often complained that service requests were not attended to in a timely manner, or the resolution was not communicated clearly to the requester upon completion. One of AST's first objectives was to begin logical consolidation and standardization, with consistent and defined service management.

Building on partial adoption of a service framework based on ITIL and ISO/IEC 20000, AST implemented ITSM methodologies, including standardized procedures, common service offerings, and common Core Service Level Agreements. Common software products to support this effort were implemented, including an ITSM tool (Cherwell) and a data visualization tool (Tableau).

Outcomes of the initiative completed in 2015:

- Extensive Cherwell configuration changes were made and new processes were custom built by AST Cherwell developers
- SDC activities are now consistently documented, including changes to managed configuration items, incidents, and service requests
- Changes to records are audited to display what data was changed, by whom, and the date/time the change was made
- Workflows are automated and documented, such as change/release/cost estimate and contractor time entry approvals
- Real-time data is displayed by the use of drill-down dashboards and custom reports pulling from live data
- SDC customers are provided visibility and transparency via a web-based portal to show ticket and change information as well as Key Performance Indicator reports
- External data is utilized and related to internal Cherwell records
- Multiple training sessions and user communications were provided, including a computer-based training video of Cherwell menu items
- Foundation for ISO/IEC 20000 certification was established

Example of agency portal page:



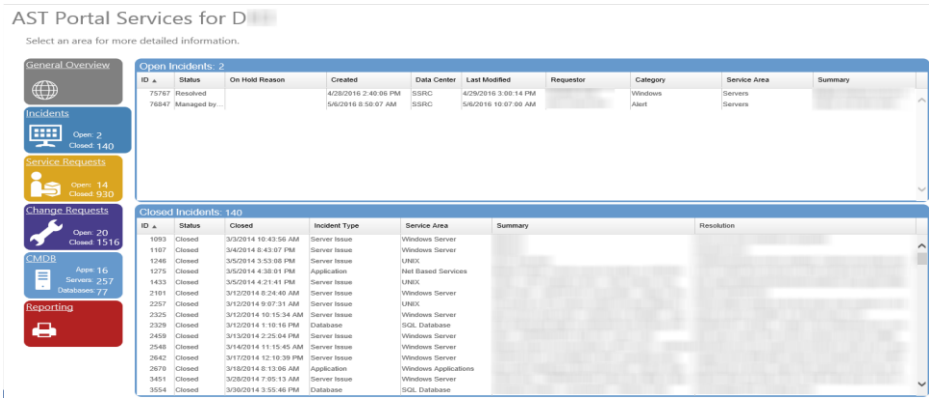
Information being tracked through Cherwell includes, but is not limited to:

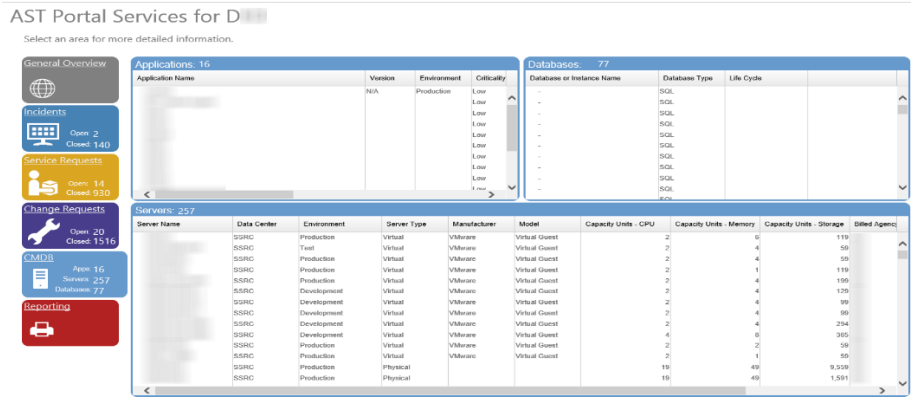
- Cost estimates – allows customers to select services and auto-generates an estimate based on selected services
- Incident/service requests
- Change/release - documents modifications made to configuration items
- Post implementation reviews of change/release – Did the process work? Identifies lessons learned and improvement opportunities
- Customer satisfaction – feedback request automatically sent to customers upon incident/service request closure
- Configuration management database (CMDB) – servers, storage/network devices, etc. within the SDC
- Continual service improvement (CSI) – recommendations for process improvement which are associated with an ITSM process
- Business relationship management (BRM) – allows customers to report issues and complaints. Customer communication and issue resolution is documented
- Time Entry – agency staff and contractors can enter time records by task to be used in the billing process

The ITSM group meets regularly to review, approve and monitor implementation status of Continual Service Improvement recommendations. The SDC continues to provide new employee training and remedial training sessions to employees, as well as periodic "Tips" emails. Future plans include additional process development required for ISO/IEC 20000 certification.

The SDC customers include state agencies as well as non-profits and local government. Through the web-based portal, the SDC now provides its 34 customer agencies with visibility

into data center operations through drill-down dashboards and custom reports containing real-time data. The portal provides each customer the ability to view their own data center inventory, track their incidents and service requests, obtain service estimates, and perform other self-service functions. Below are two examples of customer portal information:





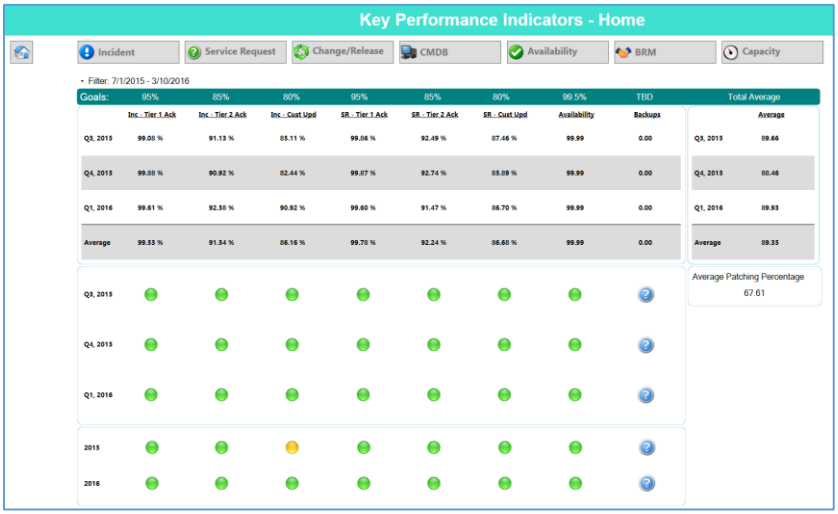
Significance

The initiative has improved many aspects of service management beyond original expectations. The information and visibility provides improved communication to the customer base, as intended. But far beyond, the visibility has helped the SDC staff and AST management with internal communication, planning, and overall management through a much improved understanding of the many assets, functions, and activities, including their correlation with one another.

The variety of benefits and outcomes of the solution is illustrated through the diverse and comprehensive outline of objects and managed relationships:

- Documents and displays all ITSM relationships including: services, configuration items, data center changes, reported incidents, service requests, continuous service improvement recommendations, key performance measures, and BRM;

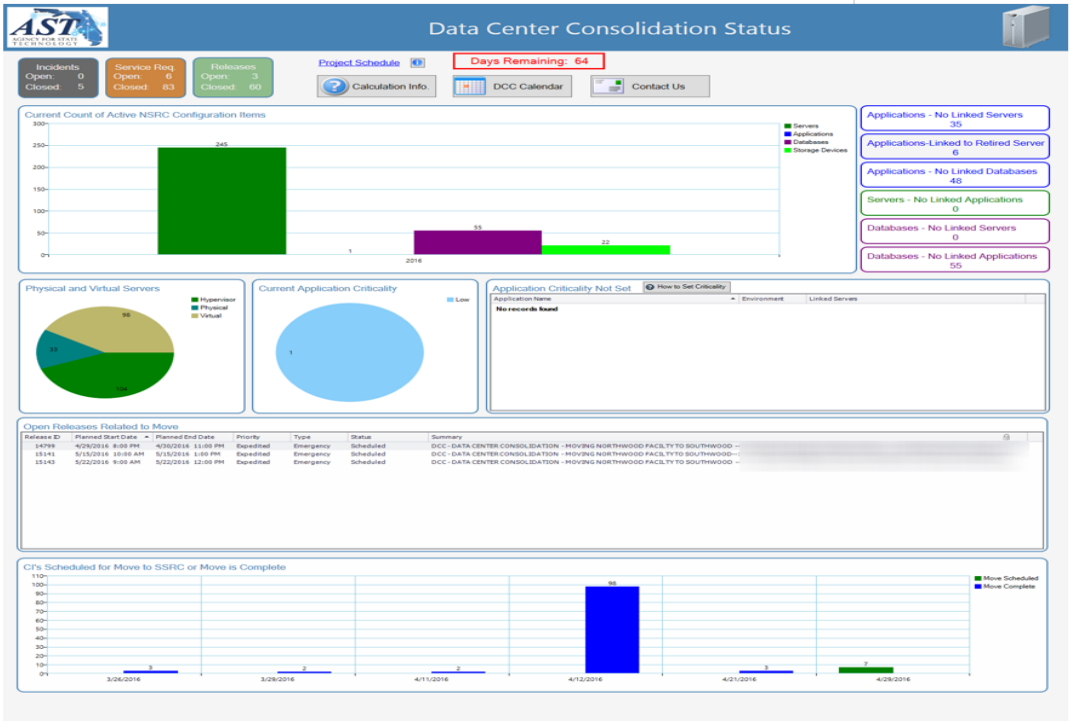
- Maintains a comprehensive configuration management database (CMDB) which includes the following CI (configuration item) types: servers, storage devices, appliances, network devices, external circuits, applications, and ITSM documentation (process, policy, procedures, plans);
- Integrates with external databases allowing AST to import data obtained by configuration item monitoring tools such as Tivoli, Solarwinds, Nicus M-PWR (for billing data) and enterprise backup systems. Benefits are:
  - Automates the creation of tickets and customer notifications based on alerts regarding system outage or disk usage.
  - Automates the calculation of availability using uptime/downtime imports.
  - Monitors capacity using disk usage alerts. Collecting this data allows AST to proactively address capacity issues, preventing incidents related to 100 percent disk usage.
  - Ensures the accuracy of CMDB attributes by pulling directly from monitoring tools and displays missing data on the CMDB dashboard.
  - Captures server patching success based on imported patch records.
  - Imports data from the agency's enterprise backup system to automate backup success rate.
  - Automates server billing by exporting data from Cherwell into the billing system.
  - Provides transparency to data center customers to view server availability, backup success, patching data, and capacity alerts.
- Provides drilldown dashboards to real-time data which ensures visibility to customers and allows managers to set goals and monitor/measure key performance indicators as shown below.



Impact

There have been an abundance of improvements to the SDC's performance measures:

- Incident/service request response timeliness has improved 7 percent.
- The average customer satisfaction rating is 4.62 out of a maximum score of 5.
- There has been a 43 percent increase in the timeliness of release execution.
- The AST CMDB currently maintains an inventory of 4,233 active servers and 1,580 active applications. The CMDB also contains network devices, databases, external circuits, appliances, and storage devices including their associated change/release and incident/service request records.
- Integrating server errors from the monitoring tool makes AST technicians aware of potential problems and enables them to proactively prevent incidents.
- AST is quickly able to provide custom project dashboards to external customers and internal staff. For example, the below dashboard displays the status of the data center consolidation project, which was recently added to the customer portal.



- AST assists state agencies interested in using AST's ITSM tool, by sharing AST's "golden image" of ITSM process modules. Process modules previously developed by agencies can be shared between agencies at no cost.

In addition to fostering improvements in service delivery, communication, and ultimately customer satisfaction and confidence in the SDC system, the initiative has provided a strong foundation for ISO/IEC 20000 compliance, assuring that the SDC is following global best practices for IT Service Management.