

DoIT Service Catalog

Service: Capacity Planning

General information: Capacity Planning focuses on anticipating IT resource requirements and planning for sufficient computer and communication capacity to meet the service needs of resource users.

Purpose: As the IT technologies supporting the agency services provided by the State of Nevada assume a greater role, it becomes increasingly important to insure adequate computing resource capacity is available at an affordable cost to the public. Accessing and planning for the computing capacity required to support state agencies is the function of Capacity Planning.

Scope: This service is offered to any agency within the Executive Branch of State government.

Features: This function includes both calendar based activities like publication of the Quarterly Capacity Plan and projects focused on supporting the needs of individual agencies when such support is required. An example of this agency specific support is capacity analysis of applications being developed by outside vendors to insure these products are good price performers for the State.

The main features of DoIT's Capacity Planning service are:

- Publication of the Quarterly Capacity Plan,
- Monthly capacity analysis of the primary State of Nevada Data Communications circuits,
- Performance profiling new technologies,
- Performance profiling existing systems,
- Application Traffic Capacity Testing.

Usage: The calendar based activities such as the Quarterly Capacity Plan and the monthly network analysis support State agencies as a whole while tasks like performance profiling and application capacity testing are intended to help individual agencies resolve their capacity issues.

Value Proposition: DoIT Capacity Planning brings a high level of expertise to a given agency's system performance problem as indicated by the articles DoIT Capacity Planning has published in the Computer Measurement Group (CMG) Journal. These publications, along with a paper presented at the CMG 2006 worldwide conference, are available in the Capacity Planning section of the DoIT web site http://doit.nv.gov/Planning_CapacityPlanning.htm. The Computer Measurement Group is the world's largest and most respected organization focused on computer capacity and performance issues.

Future Plans: The State of Nevada Capacity Planning activities will continue along the same lines as currently being performed with an emphasis on mechanizing as many aspects of the calendar based activities, such as the Quarterly Capacity Plan, as possible. This mechanization will allow more time to support individual agencies when capacity and performance issues arise. This individual agency support typically comes in the form of expertise where an analysis is performed using some basic data collection tools and an in depth understanding of statistical inference.

Options and Features		
Options/Choices	Cost	Notes
Quarterly Capacity Plan		
WAN Network Traffic Analysis		
Performance Profiling New Technology		<p>Profiled the performance characteristics of the IBM Mainframe Linux Guest virtual environment and discovered some system time keeping issues when under heavy load. This information was published in a Computer Measurement Group Journal article. Virtualization is the hottest topic in Capacity Planning circles today and State of Nevada Capacity Planning is uniquely positioned to support the Agencies as they implement this new technology.</p> <p>Analyzed the data communications link utilization characteristics of EMC's asynchronous data replication mechanism being implemented by the State of Nevada. Discovered inconsistencies between EMC's resource utilization measurement tools and those used by the State of Nevada where the conclusion was made by EMC that State of Nevada measurements were correct.</p>
Performance Profiling Existing Systems		<p>Secretary of State – Commercial Recording System (ESoS) servers Secretary of State – Election Night Web Site servers for the General Election of 2004 Department of Administration – Integrated Financial System (IFS) servers Mental Health Division – Avatar and Pharmacy Application servers Department of Education – Report Card and Child Nutrition Application servers Welfare Division – AIX Unix Production Server housed in the DoIT Computer Facility</p>
Traffic Load Testing Applications		<p>Connected load generators, performing measurements, and analyzing the results</p> <ul style="list-style-type: none"> • Secretary of State - Election Night Web Site in preparation for the 2004 election year. • Secretary of State - Statewide Voter Registration System HAVA project <p>Reviewed load test requirements and results produced by third party application vendor</p> <ul style="list-style-type: none"> • Department of Taxation - UTS Tax System Traffic Capacity Test performed by the software vendor, Accenture. • Division of Welfare – Nevada Child Care System (NCCS) Performance Test performed by the software vendor, HCL. • Provided RFP process input to insure traffic capacity testing requirements are specified. <p>Reviewed the HAVA project RFP for this purpose.</p>

Access: Capacity Planning services can be requested by contacting the DoIT Help Desk (684-4333, Helpdesk@doit.nv.gov).