**Service Management – Mainframe Services**

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| **Service Management** |  | **Vendor Responsibility** | **CTS Responsibility** | **Customer Agencies Responsibility** |
| **Service Requirements** |
| **5.22 Service Management** |  |  |  |  |
|  | Identify opportunities for CTS and/or State Agencies to reduce hardware and software costs.  |  |  |  |
|  | Provide feedback and gain approval from CTS regarding the impact of potential Architecture and design changes. |  |  |  |
|  | Produce reports to highlight and trend production incidents and problems, establish predetermined action and escalation procedures when Batch window incidents/problems are encountered.  |  |  |  |
|  | Create incident and/or problem records for job abnormalities using the appropriate tracking system. |  |  |  |
|  | Contact CTS staff, other technical staff, and/or third parties as necessary and work with them on support issues. |  |  |  |
|  | Provide appropriate response to incidents and problems and continued support through resolution as required in order to meet Online System and Batch availability schedules. |  |  |  |
|  | Develop, maintain, and utilize an emergency contact list and escalation procedures to resolve abnormally ended jobs. |  |  |  |
|  | Interface between all parties implementing changes. |  |  |  |
|  | Maintain and update operational documentation for all operational procedures and services, including maintaining accurate information, provide information on all Configuration Items (Cis) to be placed in a Contractor supplied Configuration Management System (CMS)/Configuration Management Database (CMDB).  |  |  |  |
| **Operations and Monitoring** |  |  |  |  |
|  | Assume responsibility for providing operations services for mainframe environment (console functions, shift checks, system commands, file maintenance). |  |  |  |
|  | Run or terminate utilities depending upon the impact to State Agencies. |  |  |  |
|  | Start jobs manually where automated processes do not exist or are not available as required and/or requested.  |  |  |  |
|  | Maintain and control printing to remote Sites (currently using Levi, Ray & Shoup).  |  |  |  |
|  | Provide technical support for equipment/hardware and software for remote print Sites (currently using Levi, Ray & Shoup). |  |  |  |
|  | Coordinate or take printers in and out of service, start/stop printers, and network changes as required or requested. |  |  |  |
|  | Monitor all jobs, scheduled or unscheduled |  |  |  |
|  | Check job queues and print queues as required or requested. |  |  |  |
|  | Monitor Online System performance using appropriate software tools. |  |  |  |
|  | Monitor the performance and take appropriate action to resolve system-related incidents and/or problems, including escalating (as appropriate) the incidents and/or problems to the proper Support Groups. |  |  |  |
|  | Maintain and update operational documentation for all operational procedures and services.  |  |  |  |
|  | Maintain up to date information on all operational documentation. |  |  |  |
| **Production Control and Scheduling** |  |  |  |  |
|  | Assume responsibility for production control and scheduling functions as identified by CTS and/or State Agencies. |  |  |  |
|  | Provide 24x7x365 automated scheduling for Batch work and processes including backups (currently using CA7). |  |  |  |
|  | Manage, maintain, monitor, and control Online systems and Batch processes, both scheduled and unscheduled (including on request processing). |  |  |  |
|  | Identify job dependencies, create and maintain job dependencies on the master scheduling database. |  |  |  |
|  | Define, create, and control all automated operation functions, including but not limited to routine and complex functions using software and programming tools available.  |  |  |  |
|  | Coordinate and modify schedules for special requests and comply with CTS and/or State Agencies priorities. |  |  |  |
|  | Establish, document, and maintain standards for production jobs. |  |  |  |
|  | Respond promptly to requests from CTS and/or State Agencies for priority jobs execution. |  |  |  |
|  | Resolve abnormally ended jobs caused by conditions external to production programs. |  |  |  |
|  | Repair abnormally ended jobs when possible and perform job restarts in accordance to CTS and State Agencies instructions. |  |  |  |
|  | Perform proactive failure trends analysis. |  |  |  |
|  | Provide schedule status updates.  |  |  |  |
|  | Promptly notify CTS or State Agencies if special requests will affect the timely completion of other tasks. |  |  |  |
|  | Take any other necessary steps to prepare application job streams for production scheduling and execution. |  |  |  |
|  | Enter program control specifications (parameters) into application job streams as directed by State Agencies. |  |  |  |
|  | Maintain System job streams, including indicating file usages, job dependencies / priorities, and program options available as required / requested. |  |  |  |
|  | Maintain up to date information on all operational documentation. |  |  |  |
|  | Move programs and documentation to production libraries as required / requested. |  |  |  |
|  | Monitor all jobs, scheduled or unscheduled as required / requested. |  |  |  |
|  | Start jobs manually where automated processes do not exist or are not available as required / requested. |  |  |  |
|  | Investigate and report on all jobs that end or perform abnormally. |  |  |  |
|  | Where directed, required, or appropriate, restart jobs. |  |  |  |
|  | Contact CTS staff, other technical staff, and / or third parties as necessary and work with them on support issues. |  |  |  |
|  | Create incident and / or problem records and or reports for job abnormalities using the appropriate tracking system. |  |  |  |
| **Resource Management and Capacity Planning** |  |  |  |  |
|  | Provide performance monitoring, tuning, and reporting. |  |  |  |
|  | On an on-going basis, enhance processing capabilities and efficiencies through system tuning and other run-time improvements under CTS control. |  |  |  |
|  | Provide System performance reviews and advice. |  |  |  |
|  | Perform regular monitoring of utilization needs, gaps, and efficiencies, and report regularly on tuning initiatives. |  |  |  |
|  | Perform activities required for monitoring and optimizing performance in order to reduce costs or improve Service Levels. |  |  |  |
|  | On an agreed schedule, revise the capacity planning model based on actual performance, including the cost associated with the changes in the plan. |  |  |  |
|  | Analyze performance metrics and respond proactively to potential problem areas. |  |  |  |
|  | Proactively monitor and report to CTS on resource shortages, and report utilization statistics and trends to CTS on a Monthly basis. |  |  |  |
|  | Provide regular monitoring and reporting of System performance, utilization, and efficiency. |  |  |  |
|  | Report performance data and resource utilization statistics related to System software releases-level upgrades as required. |  |  |  |
|  | Conduct system performance testing as required and/or requested. |  |  |  |
| **Software and Hardware Administration** |  |  |  |  |
|  | Coordinate with Third-Party Vendors, other suppliers, CTS, and State Agencies as appropriate on project installs/upgrades hardware and software, including but not limited to CPU and storage devices as required or requested. |  |  |  |
|  | Manage and install hardware and associated firmware as required or requested. |  |  |  |
|  | Install and maintain all System software products including emergency patching and microcode. |  |  |  |
|  | Develop, where appropriate, and install productivity tools/utilities, as well as performing all required operational modifications for the efficient and proper delivery of the services. |  |  |  |
|  | Install, tailor, maintain, and provide on-going support for System software products including third-party software. |  |  |  |
|  | Install software according to the application specifications and/or CTS requirements/standards. |  |  |  |
|  | Perform periodic and emergency system maintenance in accordance with requirements and procedures established to minimize the impact to CTS’s and State Agencies businesses. |  |  |  |
|  | Manage, prioritize, and coordinate all preventive and remedial maintenance and updates for System software. |  |  |  |
|  | Perform upgrades as required to provide effective capacity and to meet software requirements as required or requested. |  |  |  |
|  | Provide technical advice and support to the application development and support groups (State Agencies), as required. |  |  |  |
|  | Install middleware software (MQ, EOS, HOD, etc.) |  |  |  |
|  | Support of Middleware (i.e. HOD, EOS, MQ/MQ FTE, Entire X Brokers) on all platforms used in CTS and State Agencies. |  |  |  |
|  | Provide administrative support for Middleware (i.e. HOD, EOS, MQ/MQ FTE, Entire X Brokers) on all platforms used in CTS and State Agencies. |  |  |  |
|  | Install Application Servers Software (CICS, NDV servers, etc).  |  |  |  |
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| **Database Support and Management** |  |  |  |  |
|  | Perform database administration required by CTS and State Agencies, including storage management services, installation and maintenance, as well as tailoring and monitoring of database software products. |  |  |  |
|  | Provide backup and recovery services. |  |  |  |
|  | Define data and database standards. |  |  |  |
|  | Support CTS and State Agencies as needed. |  |  |  |
|  | Import, export and extraction of data. |  |  |  |
|  | Coordinate and communicate changes and upgrades with customers. |  |  |  |
|  | Perform control functions to adhere to Change Management procedures including development environments. |  |  |  |
|  | Maintain, operate, and upgrade automated monitoring tools to monitor database performance. |  |  |  |
|  | Perform database shutdowns and restarts, as requested by CTS or State Agencies. |  |  |  |
|  | Perform database reorganization to optimize performance. |  |  |  |
|  | Maintain, update, and implement database archive processes and procedures to recover from an outage or corruption. |  |  |  |
|  | Provide database management support, including providing backups and restores if data in a timely manner. |  |  |  |
|  | Test and implement database environment changes, as provided by CTS and State Agencies. |  |  |  |
|  | Proactively provide capacity planning to prevent situation caused by lack of capacity (for example: dataset or table space capacity event, full log files, etc.) in coordination with CTS and State Agencies. |  |  |  |
|  | Install and maintain middleware software to allow customer web applications access to databases. |  |  |  |
|  | Install and maintain software that enables real-time data replication.                                                                        |  |  |  |
|  | Install and maintain software that provides support for remote and CTS distributed server processing.             |  |  |  |
| **Storage and Backup Management** |  |  |  |  |
|  | Provide Architecture, design, and planning processes for the development and installation of a storage and backup infrastructure that satisfies the needs of all aspects of the business. |  |  |  |
|  | Remain current in the knowledge of use of data storage technology and management products.  |  |  |  |
|  | Develop and maintain strategies for the development and implementation of storage and backup solutions throughout the State’s mainframe environment. |  |  |  |
|  | Provide a robust and highly available storage and backup infrastructure. Update the storage and backup infrastructure as new tools and technology are available that would improve CTS’ or State Agencies’ business processes and performance. |  |  |  |
|  | Manage vendor relationships and provide a technical interface to CTS, State Agencies, other project managers, and vendors as required / requested. |  |  |  |
|  | Establish and maintain the alerting mechanisms and monitoring systems. |  |  |  |
|  | Perform testing and benchmarking of new infrastructure or tools prior to deployment into production, with CTS’s approval. |  |  |  |
|  | Create handover documentation, training, diagnostic scripts, and operational procedures for the operations group. |  |  |  |
|  | Establish System tuning and performance processes. |  |  |  |
|  | Provide appropriate security measures for the storage and backup infrastructure. |  |  |  |
|  | Perform online storage tuning (add channels, move volumes, etc. as required). |  |  |  |
|  | Assign and initialize online storage capacity as required / requested. |  |  |  |
|  | Manage the archiving of inactive files and report on online storage characteristics to be reviewed by CTS and State Agencies as required / requested. |  |  |  |
|  | Conduct routine monitoring using software tools to measure the efficiency of online storage access, and take corrective action as needed (including performance adjustments to equipment/hardware and software, or file placement as required to maximize service). |  |  |  |
|  | Manage online storage thresholds and data archives and report monthly. |  |  |  |
|  | Monitor and maintain file directories and catalogs and report monthly. |  |  |  |
|  | Provide data migration / archive management as required / requested. |  |  |  |
|  | Assume operational responsibilities for all external storage media management functions, both on-site and off-site, for external storage media library operations and State Agency application owners. |  |  |  |
|  | Utilize the most efficient and effective storage media, tools, and processes for CTS’s and State Agencies’ data and programs. |  |  |  |
|  | Recopy external storage media to support minimization of read / write errors and / or to recover corrupted data. |  |  |  |
|  | Periodically (but not less than quarterly) coordinate the retrieval and test of all backup media types and verify data can be restored in a usable fashion and report results. |  |  |  |
|  | Wipe / erase the data and configuration information resident in the computer system, storage components, and/or devices using State and / or Federal guidelines/policies prior to disposing of equipment. |  |  |  |
|  | Restore required files and datasets in a timely manner. |  |  |  |
|  | Coordinate retrieving backup tapes. |  |  |  |
|  | Backup of catalogs / indexes / log files.  |  |  |  |
|  | Restoring data from the backups. |  |  |  |
|  | Perform System data backup and recovery as required and in accordance with CTS and State Agency standards, policies, and Disaster Recovery Services requirements. |  |  |  |
|  | Perform backups on all defined Systems in accordance with CTS and State Agency standards, policies and Disaster Recovery Services requirements. |  |  |  |
|  | Establish a process by which State Agencies can request recovery of data or files, and document the process. |  |  |  |
| **Security Administration** |  |  |  |  |
|  | Provide RACF Administration at the System SPECIAL and Group SPECIAL level, including but not limited to defining new profiles (Userids, groups, datasets, general resources) and maintaining current profiles (Userids, groups, datasets, general resources). |  |  |  |
|  | Install, update, and configure security products (currently Vanguard Integrity Professionals), including intrusion testing. |  |  |  |
|  | Monitor all intrusion systems from central logging system, and provide appropriate response to alerts from Systems based upon mutually agreed procedures as defined by CTS. |  |  |  |
|  | Maintain and monitor daily violation reports and report anomalies. |  |  |  |
|  | Perform backups of the RACF database on a daily basis. |  |  |  |
|  | Update customer documentation when changes have been made (procedure changes).  |  |  |  |
|  | Provide Agency RACF Administrators (Group SPECIAL) an Inactive Userid Report, twice yearly. |  |  |  |
|  | Maintain Customer Contact list.  |  |  |  |
|  | Maintain documentation for Agency RACF Administrators on a yearly bases, including update/removing administration access to security products.  |  |  |  |
|  | Take action on Obsolete Report. |  |  |  |
|  | Take action on CICS Overhead billing (Userids with no CICS segment).  |  |  |  |
|  | Keep RACF Standards and Procedures manual up-to-date. |  |  |  |
|  | Report on security deviations and complete deviation form on a yearly basis that is reported to CTS OCS.  |  |  |  |
|  | Update system critical passwords quarterly. |  |  |  |
|  | Maintain daily command log and violation reports on production and testplexes (7 year archive).  |  |  |  |
|  | On a yearly basis, cleanup deleted Userids from mainframe applications (TPX, EOS, SecureAccess Washington).  |  |  |  |
|  | Review Sensitive/Critical Data Sets for excessive access.  |  |  |  |
|  | Perform System security testing with any operating system upgrade, maintain proof-of testing form for auditor’s review.  |  |  |  |
|  | Defrag RACF database. |  |  |  |
|  | Install security pieces for all software installed that uses external security.  |  |  |  |
|  | Monitor IBM Security Alerts.  |  |  |  |
| **Networking** |  |  |  |  |
|  | Monitor capacity; implement upgrades; and make network modifications as required for projects. |  |  |  |
|  | Support all System Software used to provide network services, e.g. VTAM, ACF/SSP, ACF/NCP, EP, Netview, Netview Access Services, enterprise extender, and TCP/IP.  |  |  |  |
|  | Coordinate with LAN and WAN groups and/or other Third-Party Vendors as required. |  |  |  |