
POLICY NAME: Data Center Operational Policy

Effective Date: The policy will become effective as of the date of approval.

Policy Owner: Aquia Data Center, TSD

Policy Number: TSD-ADC001

Related Policies: Aquia Data Center Physical Security Policy
Data Center Environmental Controls and Monitoring
State of Virginia ITRM Standard SEC501-01

Purpose: The purpose of this policy is to identify and institute practices that will help to ensure a state of the art, professional, clean, reliable, safe and secure data center.

Scope: The Data Center Operational Policy applies to all ITU employees, the various authorized departmental employees who use the data center services, and authorized business partners of ITU including contractors, vendors, and other authorized state agency employees.

Policy Statement: This policy defines the roles and responsibilities of the Information Technology Unit (ITU) and the university community with respect to operational practices in the Aquia Data Center.

Definitions: None.

Responsibilities: The Commonwealth of Virginia has published policies and minimum standards to be followed by all state agencies to safeguard the physical facilities that house IT equipment, systems, services, and personnel. Responsibility for data processing and communication resources at all campuses of

George Mason University resides with the Vice President for Information Technology. The Information Technology Unit's Data Center Manager (DCM), under the direction of the Vice President for Information Technology, is responsible for setting local standards and policies for Aquia Data Center operations.

Compliance:

The Aquia Data Center Operations staff under the direction of the Information Technology Unit's Data Center Manager (DCM) is tasked with the responsibility for ensuring that this policy and procedure will be followed by all who use the facility.

Any changes, modifications, or revisions to policies related to the governance of the university's Information Technology Infrastructure, Architecture, and Ongoing Operations will be reviewed in light of the latest versions of the standards and guidelines upon which these key components are based. Any changes, modifications, or revisions to systems dependent upon the university's Information Technology Infrastructure, Architecture, and Ongoing Operations will be required to be compatible with the published standards and guidelines.

Failure to comply could result in disciplinary action or the loss of access to the facilities and services of the Aquia Data Center.

Implementation Processes and Procedures:

Data Center Operational Policy shall be carried out and accomplished using the following detailed procedures/instructions:

1. Every effort must be made to assure personal safety in the data center.
 - a. Floor tiles should never be removed. If floor tiles must be removed, the assistance of the operator on duty should be sought; and safety cones and tape must be used around any area left unattended.
 - b. When not being serviced, all computer cabinets and doors will remain closed at all times.

- c. University electricians or an authorized contractor will perform all modifications to electrical service. All such changes will comply with the TSD 5 day prior notice requirement, and be coordinated with the Data Center Manager (DCM) for submission of the required work order(s).
 - d. No work will be done below the raised floor area without the notification of the DCM or operator on duty.
 - e. No industrial cleaning liquids/fluids will be left in the data center unattended. No highly ammoniated or chlorinated products shall be allowed in the data center.
 - f. No food or drink will be allowed on the main data center floor.
2. Air condition and air quality are essential to the reliable operation of computer equipment and must be maintained within acknowledged data center standards.
- a. Humidity levels in the Data Center will be maintained at 45% – 50%.
 - b. Temperature levels in the Data Center will be maintained at 69 – 75 degrees.
 - c. All tile alterations must be reviewed, approved, and coordinated with the DCM. If holes must be cut in the floor panels to accommodate new equipment, the panel shall be removed from the data center to cut the hole. The DCM will assist with any needed floor tile alterations.
 - d. Due to the effect on sub-floor air pressure the number of tiles pulled must be kept to a minimum. All vented floor tiles must be returned to the position from which it was removed.
 - e. No holes shall be left exposed thereby creating unbalanced airflow. No additional vents, grilles or perforated tiles will be added without coordination with the DCM.
 - f. All open slots in racks must be closed on the cold aisle side with a slot blank.
 - g. No changes shall be made to the data center HVAC systems without consultation and approval of the DCM.
 - h. Facilities Management staff will perform or manage all maintenance activities to the HVAC systems, complying with the TSD 5 day prior notice requirement, and coordinating the work

with the DCM.

3. Only authorized individuals will be allowed access in the data center. (See Aquia Data Center Access Policies and Procedures).

a. Persons possessing authorized data center access may escort other staff or vendors into the data center.

i. The visitor or guest must sign in with the operator upon arrival.

ii. The person escorting the visitor or guest must remain with them the entire time they are in the data center. There are no exceptions. (See 3b for visitors that need to have access in the data center to perform work which requires additional time beyond a brief visit.)

b. All contractors hired to perform work in the data center including electrical, mechanical, and telecommunications contractors shall coordinate their work with the DCM and the operator on duty.

i. Managers can request temporary data center access for day workers or long-term contract workers. Advance notice is requested if at all possible.

c. The entry doors to the data center must remain closed and locked at all times.

d. Authorized persons should only enter the data center to perform tasks that cannot be performed remotely.

e. Authorized persons entering or leaving the data center must verify that access doors are closed securely to prevent unauthorized persons from entering or tailgating into the area.

f. Tours are permitted with the coordination of the DCM.

Advance notice is preferred. All visitors will be required to sign in.

4. All modifications and changes to production systems within the data center shall be scheduled whenever possible following the change management procedures and coordinated with the DCM.

** Test and development equipment/systems shall remain in their designated location and racks. The DCM must be notified of any significant changes in the test/development area which could affect power distribution requirements or air flow prior to the changes being made.

a. All significant changes within the data center are subject to

review, approval, and documentation by the change management process, the DCM, and the associated/hosted units affected.

b. All changes in equipment location, deletions, or additions of equipment within the data center must be entered on the change management calendar (test & development systems excluded from CM) and must be coordinated with the DCM to ensure updating of the data center layout documentation.

c. All off-hours work within the data center shall be coordinated with the DCM. Written notification referencing the RFC #, if applicable, will be provided to the DCM stating the date and time when work is to be done and the names of the parties involved in the work. If there is no CM entry, details of the work to be done should be included in the notification.

d. No hardware, racks, furniture, shelving, or other materials will be removed or added to the data center without DCM coordination. This is required in order to maintain accurate records of inventory and maintain an orderly and neat environment within the data center.

e. All space allocations within the data center are the responsibility of the DCM. All projects requiring additional rack space shall be coordinated with the DCM.

f. All equipment must be rack mountable, except for test or development equipment. All open slots within racks must be closed with a slot blank mounted on the cold aisle side of the rack. Exceptions must be approved by the TSS Director. Racks used in the Data Center are designated by TSD. All exceptions must be pre-approved by the TSD Executive Director.

g. All power and network cables must be labeled for easy identification. Any changes which affect the accuracy of this information must be provided to the DCM and all labels must be updated. Labeling will be provided on the outside of racks displaying rack location and electrical circuit information

5. Decommissioned equipment must be removed from the data center in a timely manner.

a. All removal of decommissioned equipment shall be

coordinated with the DCM and operator on duty for proper documentation of data center assets and for security purposes. (see also d:)

b. All decommissioned equipment must be removed from the Data Center in a timely manner, preferably within 60 days.

c. All decommissioned cabling, including voice, data and fiber shall be removed immediately. Decommissioned cables shall be defined as cables that are abandoned and are no longer actively used in the data center.

d. When equipment is removed from the data center, all pertinent documentation must be updated. This includes assets management, CMDB, and any support matrix that references decommissioned equipment.

6. Electrical Power in the Data Center will comply with accepted electrical standards and local electrical codes for data centers.

a. Only qualified Facilities Management personnel shall open or change any power panel or power distribution unit.

b. Modifications in the data center power design and/or the addition of power outlets must be coordinated with the DCM for installation. The DCM is the only person authorized to request a work order for electrical modifications within the data center.

c. Cleaning equipment or tools used to perform work in the data center shall only be plugged into wall outlets located on the outer walls around the data center. (Computer rack power outlets (PDUs) are not to be used!) Data center staff will provide extension cords or power strips if requested.

d. Power requirements for equipment shall be provided to the DCM before installation. The DCM will verify availability of power and coordinate the documentation of the equipment location and power requirements in the data center layout.

e. Only the power distribution units (PDUs) located in the equipment racks are to be used to provide power for racked equipment.

i. The only exceptions to this rule are:

1. In cases of emergency installations where equipment must be brought into service before a permanent power source can be

installed. If used in this manner, a temporary power strip must be tagged and dated. Plans for permanent power must be made with the DCM.

f. No radios or other non-computer related equipment should be plugged into any dedicated circuit or computer rack power outlets (PDUs). Wall outlets are available for these instances on the outer walls around the data center.

7. All equipment should be labeled in the front and rear panels with identification information.

a. Wherever possible, all equipment will have a label affixed identifying the power distribution unit and the main power panel to which it is attached. At a minimum all equipment power cables should be labeled with this information. Labeling will be provided on the outside of racks displaying rack location and electrical circuit information

b. All power cables will be labeled and identified for its specific use and identified by its amperage, voltage, and type of connector if possible.

c. All device-to-device cables installed within the data center will be labeled to identify their use and/or purpose. This label must be at both ends.

8. Management of equipment, peripherals, associated cabling, and general work processes in the data center shall be performed in such a manner as to facilitate an optimum data center operation, maximizing resources effectively, and providing a professionally maintained data center environment.

a. New equipment destined for the data center will be unpacked outside the data center prior to its placement in the data center environment.

i. The staging/storage area adjacent to the data center is provided for this purpose.

ii. No boxed or loose equipment or other related materials are to be stored on the main data center floor. All materials are to be housed in the staging/storage area or other location until placed into service. Any materials left on the data center floor will be removed by Operations staff and placed in an appropriate area

until required.

b. Whenever possible, all equipment deliveries to the data center shall be coordinated with the operator on duty or the DCM to ensure proper receipt and storage. Each unit will be responsible for notification and/or acceptance of their equipment.

c. To insure appropriate use of data center space, placement of new racks will be coordinated by the DCM with the guidance of the TSS, ES&M, and NET Directors.

d. Equipment owners are responsible for the installations of their equipment in the data center. All installs must be coordinated with the DCM for documentation purposes.

e. ITU TSD Network Engineering & Technology staffs manage connectivity requirements and install data/telecommunications cabling in the overhead conveyance system (wiring tray). No other cabling or material will be run in the tray system without prior approval of the Director, Network Engineering & Technology.

f. All cable runs will be run in an orderly manner and dressed out for a professional appearance. Cables should be labeled appropriately to provide easy identification. No cables should run diagonally in the sub-floor without prior approval. Electrical and computer cables may run perpendicularly. When cables cross paths, it should be in a perpendicular manner.

g. All cabling within racks shall be neatly organized, tied, and labeled appropriately, allowing rack doors to close.

h. All doors to racks/computer cabinets shall be kept closed when equipment is not being serviced.

i. After completing installation or service on equipment, all tools and materials must be removed from the data center floor and the area left clean of any trash or debris.

j. All equipment & furniture within the data center (desks, chairs, tables, racks, cabinets, etc.) are the responsibility of the DCM and are not to be removed from the data center.



Technology Systems Division

Approved By: Walt Sevon
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