



Concepts Meet Reality...

Effective Data Center Management Starts with Policies and Procedures



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Introduction

Developing a cohesive set of policies and procedures specifically for the data center environment is a critical part of managing your core IT infrastructure. Focusing on key areas such as standard operating procedures for equipment installation, safe work practices and change management can reduce safety and business incidents and help maintain the integrity of your overall data center environment. The end result for your organizations is decreased costs as a result of less downtime and improved efficiencies around server installation and daily maintenance.

Policies should apply to everyone that routinely accesses the data center, including employees, contractors and vendors. Since this number may be sizeable, it's important to develop an effective communications plan to reach all stakeholders and to ensure ongoing compliance. Once these business processes have been define and implemented, enforcement and accountability are critical to ongoing success.

Background

Data centers originated as low maintenance space for back office applications and have emerged as high-density nerve centers for a wide variety of critical business functions. With this evolution, data centers have presented an ever increasing set of challenges to IT and Facility Managers, including business continuity, SOX compliance and capacity planning. Combine these with the everyday issues of change management, security and scheduled maintenance and one thing becomes clear: A large data center has too many ongoing processes to manage without some sort of generally accepted list of standard operating procedures. Data center policies and procedures provide the initial framework for achieving this objective.

Data center policies and procedures may already exist to some extent within your organization, but communicating them effectively and tying them to the bigger picture of operational excellence is the first step towards holistic data center management. Policies should focus on four main areas: 1) security, 2) equipment Installation, 3) safety and emergency procedures, and 4) change management.

Analysis

New Equipment Installs

Developing a list of rack standards for the data center is a critical part of maintaining the integrity of the data center environment. For example, requiring that all equipment be labeled, including both ends of all power cords, can greatly reduce the chances of an unintended outage during scheduled maintenance. Other useful policies include:

- Require redundancy for all equipment in the data center. Equipment that lacks redundant power should be identified and outages scheduled to correct.
- If a hot/cold row layout is used for your data center, enforce strict guidelines around airflow within the rack space.
- Promote the proper use of floor tiles along with baffles and blanking plates to prevent the mixing of hot and cold air.

- Provide strict guidelines around cable organization and designate separate cable trays for power and data. All cabling should be organized in runs beneath the raised floor or along overhead cable trays.
- Strive to eliminate clutter within the data center as a result of new installs, especially cardboard and packaging material. Besides being a safety hazard, these materials can limit the useful life of data center assets.
- To prevent the data center from becoming a storage room, provide staging areas for unpacking new equipment. Keep aisles clear of tools and carts for safe evacuation routes.

Change Management

The goal of change management should be an accurate accounting of all work taking place within the data center with minimum disruption to daily operations. Any actions that can have a serious impact on the data center environment should be documented and reviewed by the appropriate teams. A workflow process should be in place for routine requests such as reserving floor or rack space, opening the raised floor, network drops and additional power or cooling requirements. If possible, use a centralized change management system for opening tickets and scheduling work.

Data center management applications such as Aperture, Absia, Visio, or Visional can be useful for some change management functions, as well as tracking server inventory and capacity planning. Some of these tools offer a wide set of functionality, so it is recommended that you determine the scope of your requirements up front.

The most challenging aspect of change management for the data center is enforcement. Enforcement requires accountability and responsibility around every activity performed within the data center. Consistent and constructive enforcement of set policies will lessen the impact of daily maintenance and new installs on the overall integrity of the data center environment.

Data Center Security

In order to ensure the systems housed within the data center are kept secure, security policies should be applied to all personnel requesting access. Safety policies can include:

- Channeling access requests through a centralized process and reviewing on a periodic basis to ensure only necessary personnel have access.
- Setting access to expire after a specified time period or after long period of inactivity.
- Establishing guidelines for vendor and visitor access.
- Posting a comprehensive list of data center policies at all access points and making access dependent on compliance.

Safety and Emergency Procedures

Last but not least, safe work practices should become an integral part of daily operations within the data center. There are numerous factors to take into account when developing safety policies. It may be helpful to walk through a few scenarios with data center personnel as part of ongoing communications. For example, explain the purpose of the EPO switch and in which particular situations it should be used.

Evacuation plans are another critical component for safety. What are the scenarios under which an evacuation would be required? What can someone expect during this event in terms of alarms, fire suppressants, etc.? It is critical to stress the importance of keeping aisles and pathways clear and making sure that front and rear rack doors are kept closed.

Other important safety measures include:

- Encouraging the use of caution cones when opening the raised floor or to flag temporary cabling or storage.
- Maintaining an updated emergency call list and post in multiple locations around the data center.
- Providing lifts for installing heavy equipment at the tops of racks.

Developing and Communicating Policies

New data center policies and procedures are likely to impact a large number of teams and personnel, including those who manage vendor relationships. In order to drive compliance, it is essential to obtain support and acceptance from the management team from the onset. To achieve client satisfaction, identify all stakeholders and actively solicit feedback regarding the policies. Having a comprehensive communications plan in place ahead of time will ensure everyone gets involved.

Once policies have been implemented, consider nominating a review board to periodically assess them for effectiveness. Informative materials should be accessible to all personnel accessing the data center. These can include posted signage in communal locations, information on your internal data center website, and an orientation video that explains the basic data center protocol to anyone requesting data center access.

It is advisable to define some reliable metrics to gauge the success of the new data center policies. These can include the number of safety incidents, unintended outages, or scheduled outages due to failure to follow stated policies.

Conclusion

Data Center policies and procedures are an important first step to effective data center management. Engaging management and key stakeholders early on in the process and having a comprehensive communications plan will ensure success and drive home the message of operational excellence. Once policies have been communicated, enforcement and accountability are critical to ongoing success. The key tangible benefits for an organization are less downtime and improved efficiencies around ongoing server maintenance.



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