HOW DATA CENTER JOBS ARE CHANGING IN THE AGE OF THE CLOUD

There's been a lot of changes in the Data Center (DC) since the 1990s. We've seen the migration of in-house Data Centers to managed Data Centers run by managed service providers (MSPs). Managed DCs and in-house DCs are also migrating to cloud hosting environments where your applications reside solely on vendor machines running in the cloud, and you may not even know where the underlying hardware servicing your network resides.

Today, let's look at how DC migration affects IT Operations professionals and examine some of the ways Data Center jobs are changing as more organizations move to the cloud. I'll examine these changes in two ways, by looking at 1) IT Ops functions and skills that will be less needed when organizations migrate to the cloud; and 2) IT Ops functions and skills that will be more needed as organizations migrate to the cloud. Here's my list of how DC functions and skills change when moving to the cloud.

(This article is part of our [Data Center Operations Guide](#). Use the right-hand menu to navigate.)

Data Center functions and skills that are less needed after migrating to the cloud

Data Center functions and skills that are more needed after migrating to the cloud

Jobs as full-time IT Ops employees at end-user organizations will be less in demand. There'll be less need for network technicians, administrators, system operators (what few are left), and Help & Service Desk personnel. As services and equipment migrate out of the corporate Data Center, corporate IT Ops jobs will follow.

Jobs working for Infrastructure-as-a-Service (IaaS) providers, cloud providers, or technology companies will increase, performing many of the same activities in-house IT Ops personnel used to provide. IT Ops jobs will follow hardware, services, and applications, and migrate to the cloud.

Less focus on infrastructure issues, such as operating system management, hardware management, and network management. In-house IT Ops managers typically manage physical servers and associated equipment, along with the applications that run on those servers. With server migration to the cloud, server management will also move to the cloud, and it will be performed by the cloud provider's staff, not the organization's staff.

Hardware, operating system, and some network functions will be assumed by cloud providers.
IT Ops will focus more on application performance and security, rather than hardware and network management.
Rather than assuming an infrastructure-centric focus, IT Ops personnel will have to assume an applications-centric focus, working with technologies based around services and apps rather than servers.

A Capital Expenditure (CapEx) view of the network, where IT Ops owns or leases all application and network equipment.

An Operational Expenditure (OpEx) view of the network where organizations host their applications on a cloud hosting provider's equipment and the provider charges them a monthly fee.

Responsibilities for higher level [DevOps](#) functions will increase, including application error correction, data integrity, code validation, and response time. Management will increasingly look towards IT Ops to handle performance management issues that were previously handled by application developers and owners. App developers will be too busy with constant application upgrades to handle these issues, and IT Ops will be asked to step up and fill the gap.

Lower level IT Ops tasks such as tape management, simple backup procedures, checking server and application status and availability, and detecting and correcting hardware errors will decrease.

At the very least, IT Ops professionals will need a working familiarity with APIs and other application technologies (what the technologies do, how to test apps, how apps address each other in the cloud, how to troubleshoot issues, etc.). This is fast becoming a requirement for managing IT Ops in the cloud. For more information on learning these technologies for IT Ops personnel, see my post on the new skill sets needed for AIOps. Most of those same skills will be needed for IT Ops cloud management.

Hub-Spoke architecture may become less important, as more applications are hosted in a cloud environment, reducing the need for different connected locations to communicate with each other and hub-based servers. The need for redundant pathways between closed point-to-point networks may also decrease, as redundancy can also be handled in the cloud.

Applications will run on cloud-based servers, rather than on-site physical servers. Apps that formerly resided in the hub of the hub-spoke network will now be reachable by everyone through the cloud, and IT will have to authorize and control that access. VMs for different locations that were previously hosted on their own in-house file servers can now be hosted on the same provider environment inside the cloud.

"Leisurely" operating system updates where companies stay on the same operating system version for years before upgrading to the latest version, will start to go away.

The cloud provider will now be in charge of your OS upgrade schedule.
Automatic OS upgrades will occur at fairly regular intervals, forcing IT Ops personnel to ensure that their applications and software will continue running on the latest OS. IT Operations will go from planning and executing OS upgrades for Windows, Linux, AIX, and IBM i to testing and insuring that OS migrations will work correctly when the next scheduled OS upgrade occurs.

These are some of the changes that will occur when your applications and network functions move to the cloud. The cloud will force IT Ops skills and responsibilities to shift from machine and network management to server and application configuration, application performance, and security.