Chapter 11
Transition and Transformation into a Cloud Environment

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ABSTRACT
It is a challenge to migrate and transform existing workloads into the cloud, especially those requiring the higher standardization of managed services. Covered here are the various types of transition and transformation into the cloud from lift and shift to automated migration; the tooling and automation for the cloud environment; and the migration services via wave planning and check-pointing to the cloud for customers. Transition and Transformation is an integral part of cloud services, and creating a repeatable, reusable, factory model for a customer ensures a successful cloud migration.

INTRODUCTION
The cloud journey starts with building a private or signing up for a public cloud offering. Cloud offers many opportunities and advantages for enterprise customers, but also reveals challenges migrating existing workload into a cloud. Current workload is the majority of the workload when a large enterprise adopts cloud and new, greenfield, developments are usually an exception. Managed cloud services, such as IBM’s Cloud Managed Services (CMS) offer services and Service Level Agreements (SLAs) above the hypervisor (IBM, 2015b), but impose additional requirements for migrations, compared to an unmanaged cloud (such as IBM’s SoftLayer, (IBM, 2015c) or Amazon’s Web Services (AWS) (Varia & Sajee, 2013).

Note that larger customers will tend towards managed services. “Customers that need resilient infrastructure and the ability to scale up to large databases with many users will gain the most benefit from managed services. With managed services, the vendor will builds and manages the infrastructure including Operating System (OS) management, patching, backup, security, and compliance with SLA’s at the VM level. IBM’s CMS is the only fully managed cloud with a choice of x86 or AIX managed application services for SAP, SAP HANA and Oracle workloads” (IBM, 2015b).

One of the reasons customers desire the managed capabilities of a fully managed service like CMS is that this capability relieves them from that responsibility allowing them more time to focus on their applications and core business. We have observed that many large IT shops do not keep up with even minimally required care of key IT components such as OS and security compliance. Application owners are often under pressure to provide business functionality and defer or ignore the maintenance as long as things are still working. Additionally we have observed that some customers are more advanced than others in the implementation of ITIL compliant service management. This is another benefit as you have the option not only to leverage the infrastructure provided by cloud, but managed offerings allow the client to continue to move up the capability stack of managed services and improve operation capabilities in many areas.

Some customers will opt for a hybrid environment, utilizing AWS or SoftLayer with the larger managed services for servers that do not require the higher management options available.

The goal for many customers includes providing remote managed operations, shared services, and regional services for data center services to reduce business operational risks related to Disaster Recovery (DR) and Business Continuity Program (BCP) capabilities. Cloud can also enable business growth through the usage of common shared services via the service catalog, providing increased operational effectiveness and efficiency. Cloud services are characterized by secure multi-tenant services, standardization and cloud features such as auto-provisioning and metered chargeback. They include services for virtual and physical servers, selected databases and middleware, and a few application services as defined by the service catalog, and orderable through a common services portal.

*Figure 1. Migrations into the cloud*