Cloud Migration Strategies

Guidance and Tools

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Cloud Migration

Cloud Migration Guidance

Migration Tools

Cost Estimation

Migration

“Moving a meaningful portion—not necessarily all—of your organization’s existing IT assets to the cloud is considered a ‘migration.’ A migration might consist of moving a single data center, a collection of data centers or some other portfolio of systems that is larger than a single application.”

Reference: Migrating to AWS

Trigger for Migration

Migrating to the cloud is a significant event for an organization and its employees

- Data center lease expiration
- Required hardware upgrades
- Software License Renewals
- Compliance Requirements
- Expanding to Global Market
- Increased Developer Productivity
- Standard Architecture

AWS Migration – Guiding Principles

The Five-Phase Migration Process

The Six Common Strategies for migration to the cloud

“There is no one-size-fits-all answer to determining the correct strategy for application migration.”

-Stephen Orban

Five Phase Migration Process

“…you start with the least complex application to learn how to migrate while learning more about the target platform, and then build toward the more complex applications.” -Stephen Orban

Start with simple application, learn and apply to more complex applications

Cloud Migration Strategies

Rehost (lift and shift)

Replatform (lift, tinker and shift)

Repurchase (“drop and shop”)

Refactor / Re-architect (Cloud Native)

Retire

Retain / Hybrid

Rehost

Lift and Shift - Legacy Application Migration

Automated or Manual migration

Quick win / Migrate quickly to Cloud

Applications are “easier” to optimize once they are already running in the cloud

- Organization has developed better skills
- Hard part is already accomplished (migrating application, data, traffic)

Replatform

Lift, Tinker and Shift

Some cloud optimizations are applied without changing the core architecture of the application

Example: Move to a managed database like Relational Database Service

Repurchase

Drop and Shop - Move to a newer version or different solution

Example: Back office applications, ERP systems

Easy to upgrade to newer versions

Willing to change existing licensing model

Refactor / Re-architect

Make the application Cloud Native

Most expensive solution

Strong business need to add features, scale or improve performance that are difficult to achieve in existing environment

Reestablish culture, agile and continuous reinvention

Retire

Decommission unneeded applications

Retain

Do nothing for now – revisit later

Some applications need to be maintained on-premises

Application was recently upgraded and not ready to make changes again

Hybrid Infrastructure – Route 53, ELB, Direct Connect, VPN

Hybrid Infrastructure

Amazon Route 53

DNS Service. Transparently direct client traffic between on-premises and cloud

Elastic Load Balancing (ELB)

Distribute requests across servers in AWS and on-premises (over Direct Connect or VPN)

Hybrid Infrastructure

Direct Connect

Dedicated link between on-premises data center and AWS

VPN

Secure, encrypted connection between on-premises and AWS

Storage Gateway

Extend on-premises storage to the cloud

Tools for Cloud Migration

Tools

AWS Server Migration Service (SMS)

- Migrate on-premises virtual machines (VMware/Hyper-V) to AWS

AWS Database Migration Service (DMS)

- One-time data replication
- Continuous data replication from on-premises to AWS (and reverse)
- Homogeneous and Heterogeneous replication

VMware Cloud on AWS

- Migrate on-premises VMware environment to AWS bare metal EC2 infrastructure

Tools

AWS Snowball, Snowmobile

Petabyte scale data transport solution

Secure, tamper resistant appliance to physically ship data

Snowmobile – Shipping Container for Exabyte-scale migration

AWS Direct Connect

Hybrid infrastructure – Dedicated network connection between your on-premises data center and AWS

Private connectivity with consistent performance

Lower data transfer charges (charged at AWS inter-region transfer rates)

Tools – Amazon S3

Internet Cloud Storage

Low cost, highly durable solution

Maintain backups in the cloud

Tools - AWS Storage Gateway

- Hybrid cloud Storage with local caching
- File Gateway (File share using NFS/SMB protocol)
- Volume Gateway (Block storage using iSCSI protocol)
  - Cached – Stored in S3 with local cache (cost savings)
  - Stored – Stored locally with S3 as backup (fast access with inexpensive backup)
- Tape Gateway (Virtual Tape Library using iSCSI protocol)
  - Virtual Media Changer, Virtual Tape Drives
- Make cloud an extension of your on-premises data center

Tools for Cost Estimation

Cost Estimation Tools

TCO Calculator (Total Cost of Ownership)

- Compare on-premises or traditional hosting to AWS
- Estimate cost savings when using AWS
- Detailed set of reports

Simply Monthly Calculator

- Explore AWS Services and Pricing

AWS Pricing Calculator (**NEW**)

- Replacement for simply monthly calculator

AWS Support Plans

Basic, Developer, Business and Enterprise

AWS Basic Support

- Included for all AWS Customers – Account, Billing and Service Limit Support
- Support: Online support case
- Access to Support Forums
- Trusted Advisor Best Practices (7 Core Checks)
  - Cost, Performance, Security, Fault Tolerance, Service Limits
- Price: Free

AWS Developer Support

“Recommended if you are experimenting or testing in AWS”

- All Basic Plan features plus enhanced technical support
- Support: Email
- Response Time SLA: < 12 business hours (system impaired)
- General architectural guidance
- Price: Greater of $29/month or 3% of monthly AWS usage

AWS Business Support

“Recommended if you have production workloads in AWS”

- Trusted Advisor Best Practices: Full Set of Checks
- Support: 24x7 phone, email and chat
- Response Time SLA: < 1 business hour (production down)
- Contextual architectural guidance
- Fee based Infrastructure Event Management
- Price: Greater of $100/month or 10% of monthly AWS usage for first $10K and tiered pricing after

AWS Enterprise Support

"Recommended if you have business and/or mission critical workloads in AWS"

- Trusted Advisor Best Practices: Full Set of Checks
- Support: 24x7 phone, email and chat
- Response Time SLA: < 15 minutes
- Consultative review and architectural guidance on your specific scenarios, access to self-paced labs
- Infrastructure Event Management (product launch, sports, marketing) and real-time support
- Technical Account Manager - single point of contact
- Price: Greater of $15,000/month or 10% of monthly AWS usage for first $150K and tiered pricing after