Mass Migration Strategy

A key step in the Enterprise Transformation journey

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What to expect from this session

- The Enterprises and the **Transformation** journey
- **Business triggers** for a Mass Migration initiatives
- A quick **deep dive**
- Lesson learned and **useful tips**
The Transformation journey
Transformation principles

**Transformation, what is it?** A common and well accepted definition is “a whole scale change to the foundational components of a business, from its operating model to its infrastructure”

**What are the main drivers of Transformation?** Changing consumer demand, changing technology and changing competition
Today Cloud is the booster of the Transformation

Today most of the IT organizations have realized that:

- Cloud is a game changer, now IT department can focus on creating innovative solutions rather than firefighting everyday problems
- The ability to innovate has never been more possible and has never happened faster

And most of the Business lines have realized that:

- Cloud enables speed, if something can be done it must be done now, if you don't do it someone else will
- Cloud is unfolding the ability to give customers the products and services they'd ask for, if they only knew what was possible
The Business triggers
The challenge becomes an opportunity

>>> the answer is to start a “mass migration to the cloud” project <<<

- Cloud adoption - initial steps (PoC, Pilots, non production or stand alone production workloads)

<table>
<thead>
<tr>
<th>In house IT</th>
<th>Cloud IT</th>
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</thead>
<tbody>
<tr>
<td>• But what about the majority of the apps? (typically thousand of workloads)</td>
<td></td>
</tr>
<tr>
<td>• And what about the time &amp; cost constrain?</td>
<td></td>
</tr>
<tr>
<td>• And what about the other business drivers other than agility and innovation?</td>
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<tr>
<td>Cloud “native” delivery (new custom apps, 3rd parties packages)</td>
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Mass Migration characteristics

- Strong CxO sponsorship
- Cross-organization
- Business ownership

- Skills mapping (outside / inside)
- Redefine priorities

In house IT

- from 30-40% to 100% of Enterprise applications
- multi year project with detailed preparation phase
- specific “non negotiable” allocation of IT budget
- external support for migration assets and methodology
- one-of-the-kind project with highly automated phases
- specific governance model with specific roles

Cloud IT

Please note that “mass migration” is happening since decades but today Public Cloud represent a real option and there are some valid business triggers for starting this journey
A quick **deep dive**
Assess the applications and define the move

AWS Cloud Migration Framework
Assess the applications and define the move

AWS Cloud Migration Framework
Assess the applications and define the move

AWS Cloud Migration Framework

AWS / Internal IT

AWS Ent. Supp / Internal IT

Partner (SI) / Internal IT

Acceleration Partners (Cloud native companies)
Define how to move the applications

The migration patterns

- **Discover/Assess/Prioritize Applications**
  - **Rehosting** (Lift and Shift)
  - **Redesign** Application/Infrastructure
  - **Retain / Not Moving**
  - **Retire / Decommission**
- **Use Migration Tools**
  - **Replatforming** (Lift & Reshape)
  - **Repurchasing** (Replace - Drop & Shop)
  - **Purchase COTS/ SaaS & licensing**
  - **Redesign Application/ Infrastructure Architecture**
- **Transition**
  - **Manual Install** & Setup
  - **App Code Development**
  - **Full ALM / SDLC**
  - **Integration**
- **Validate**
  - **Modify underlying Infrastructure**
  - **Manual Config**
  - **Manual Deploy**
- **Production**
  - **Determine Migration Path**
  - **Automate**
  - **Manual Install**
  - **Integration**
## The migration patterns description

<table>
<thead>
<tr>
<th>Label</th>
<th>Name</th>
<th>Pattern Description</th>
<th>Examples</th>
</tr>
</thead>
</table>
| R1    | Retire | ✓ Application and host decommission on source  
✓ No migration to target  
✓ Application owner approvals needed | Existing Decomm Program Scope  
SunOS, SCO;  
Clustered host for DR, alternative HA hosts |
| R2 / R2a | Retain | ✓ Customer will keep host / application in their source environment  
✓ Minimal analysis/validation of scope and application affinity  
✓ Dependency on integrating service management  
✓ Some host will need to be Re-hosted into target (i.e. Lift and Shift) | Mainframe  
AIX host / applications  
Specific GEO locations (exceptions) |
| R3    | Re-Hosting | ✓ Like for Like application migration to target cloud  
✓ Minimal effort to make the application work on the target cloud infrastructure  
( Minimal application layout change)  
✓ Storage migration will be needed (without conversion)  
✓ UAT - Some level of application testing | Simple to Medium V2V, P2V  
Storage: Local to DASD  
RHEL 6 above  
Win 2008 above  
Lift & shift |
| R4    | Re-Platform | ✓ Up-Version of the OS and/or database onto the target cloud (same type)  
✓ Storage migration will be needed (without conversion)  
✓ Some level of application changes  
✓ Application reinstallation on the target  
✓ UAT is highly recommended | W2K3 to Win 2012; Win 2008 below; RHEL below; Oracle 8 to 11; All databases  
New application releases  
All clusters (MS cluster, DR)  
MS SQL same technology (RDS) |
| R5    | Re-Factoring | ✓ OS and/or database porting (changing OS or database type)  
✓ Middleware and application change to cloudify an application  
✓ Data conversion; Database to AWS RDS  
✓ UAT required | AIX to Linux  
Oracle to SQL; SQL to Aurora  
Middleware, IBM products |
| R6    | Re-Purchasing / Re-Architect | ✓ Application architecture changes may also require Up-Version or Porting  
✓ Middleware, data modernization; application consolidation / stacking  
✓ UAT required; HPC Grid, No ITIL | Any custom application chg  
Complex / Highly complex application migration |
# The migration complexity (illustrative)

There are additional factors that can influence the complexity and can be used for performing a weigh analysis:

- Is the application load balanced
- Does the application require re-platforming
- How critical to the business is the application
- Are there special application security concerns
- Does the application require a specific SLA
- What is the environment (Prod, Dev, Test)

<table>
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<tr>
<th>Complexity Level</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Very Low</strong></td>
<td>Basic workload, current/supported OS, known environment, no database, projected to migrate with basic tools. Few dependencies and can likely sustain a scheduled outage with minimal impact.</td>
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<tr>
<td><strong>Low</strong></td>
<td>Basic workload, may require additional effort to determine environment, no database, may require re-platforming, can likely sustain a scheduled outage with minimal impact to business.</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>No database, can sustain longer outage with some planning and advance notice, instances in prod or unknown may impact business applications if not available for an extended period.</td>
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<tr>
<td><strong>High</strong></td>
<td>Workload may include database, or system may include greater than five disks. Requires some additional assessment and planning prior to migration. Greater potential to impact business.</td>
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<tr>
<td><strong>Very High</strong></td>
<td>Workload may include database or complex system configuration (e.g.: numerous disks). Many dependencies. Require advanced detailed assessment and planning. High-touch migration.</td>
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Migration Factory

For Mass Migration the migration factory is a mandatory step to implement
AWS Partners ecosystem

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Lessons learned and useful tips
Management reporting topics

Mass migration initiative is a data intensive project and an iterative reporting system must be organized along (at least) the following streams:

- Technical – ie solution design and architecture
- Commercial - ie contractual track and change management
- Organizational – ie GEO alignment and related roadblocks
- Finance – ie amortization, write off, cash flow
- Legal and compliance
- People and related HR implications
- Security and privacy
- Marketing
Mass migration to cloud is different case by case, but some common evidences are reported below:

- Change is hard but the reward is large
- **Exec Sponsor** & Steering committee are critical
- Engage the *business units early* and include them in the journey
- Understand desired outcomes (tangible & intangible) – *What / why* catalyst for change
- *Do the POC’s* – they provide vital learning’s & are a valuable point of reference (validation) of what is possible
- Hybrid team (Enterprise, AWS, SI’s) is a proven model - it will save time & money in the short and long term
Thank you!