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AWS Migration: Lessons for Fast-Growth Companies

aws

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Special OFFERS

Free Migration Assessment
for all eligible attendees

AWS Migration Lessons
PRESENTERS

J. Michael Bako
Solutions Architect, Startups

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Prasanth Ramachandran
Director, Solutions Delivery & Architecture

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Amazon Web Services (AWS) is the **world's most comprehensive and broadly adopted cloud platform**, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

nClouds℠
Deliver Innovation Faster

nClouds is an **AWS Premier Consulting Partner** and award-winning provider of AWS and DevOps consulting and implementation services. We are an integrated team of skilled engineers, architects, developers, project managers, and sales & marketing pros who are passionate about client success, software excellence, and innovation. We enable our clients to deliver better products faster and create awesome customer experiences.

AWS Well-Architected

aws partner network

Premier
Consulting Partner

- Data & Analytics Competency
- DevOps Competency
- MSP Partner
- Migration Competency
- SaaS Competency

Trusted by INNOVATIVE BRANDS

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AWS Migration Acceleration
AGENDA

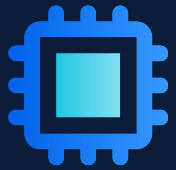
DETAILS *(All times PT)*

- **11:00 - 11:05 am -** Intro & Session Objectives *by Randy Newell, nClouds*
- **11:05 - 11:20 am -** Transformation with AWS *by J. Michael Bako, AWS*
- **11:20 - 11:35 am -** Talix Client Success Story *by Prasanth Ramachandran, nClouds*
- **11:35 - 11:50 am -** nClouds Migration Process *by Prasanth Ramachandran, nClouds*
- **11:50 - 12:00 noon -** Q&A *by AWS and nClouds*

Migration Lessons
OBJECTIVES

Transformation on AWS

Transformation Journey and Migration Strategy



Talix Success Story

Talix Case Study, Results & Benefits

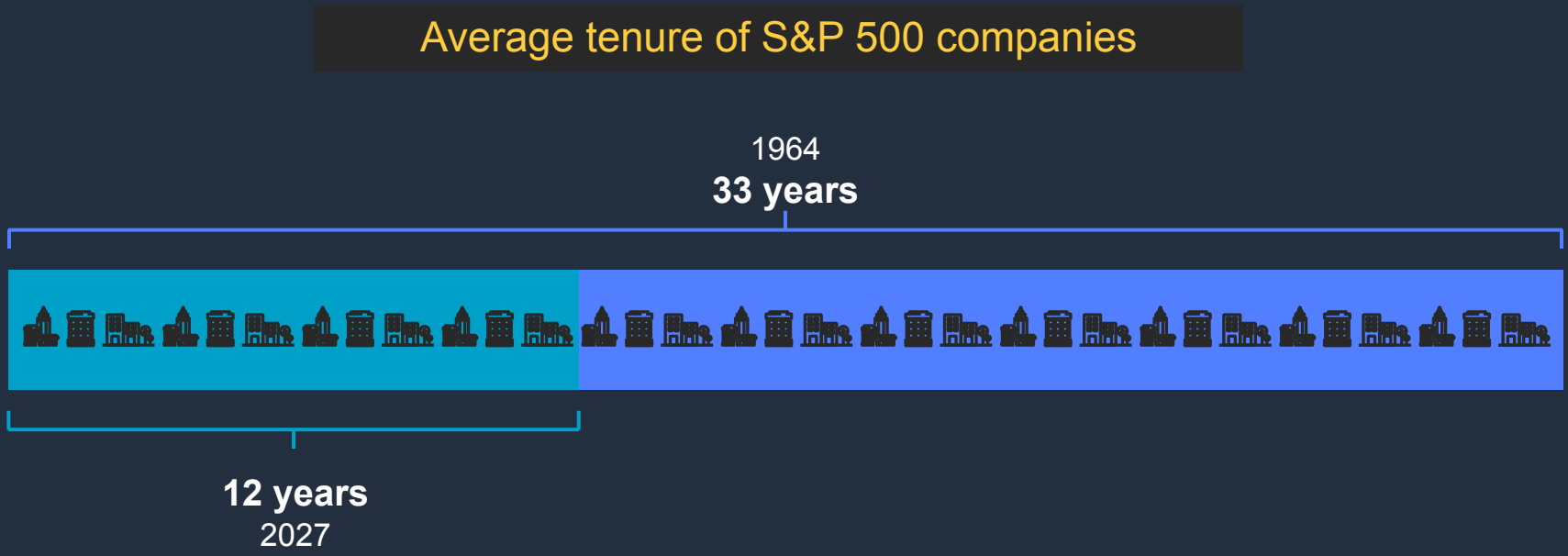
nClouds Migration Process

How to Migrate to AWS with nClouds

Transformation with AWS

J. Michael Bako
Sr Solutions Architect, Startups

The pace of disruptive innovation is increasing



Source: Innosight, 2018 Corporate Longevity Forecast

The pace of disruptive innovation is increasing

9 out of 10 companies believe their industry will be digitally disrupted…

…yet only about **1 in 6** of them believe they are responding with a bold strategy at scale

Source: Innosight, 2018 Corporate Longevity Forecast

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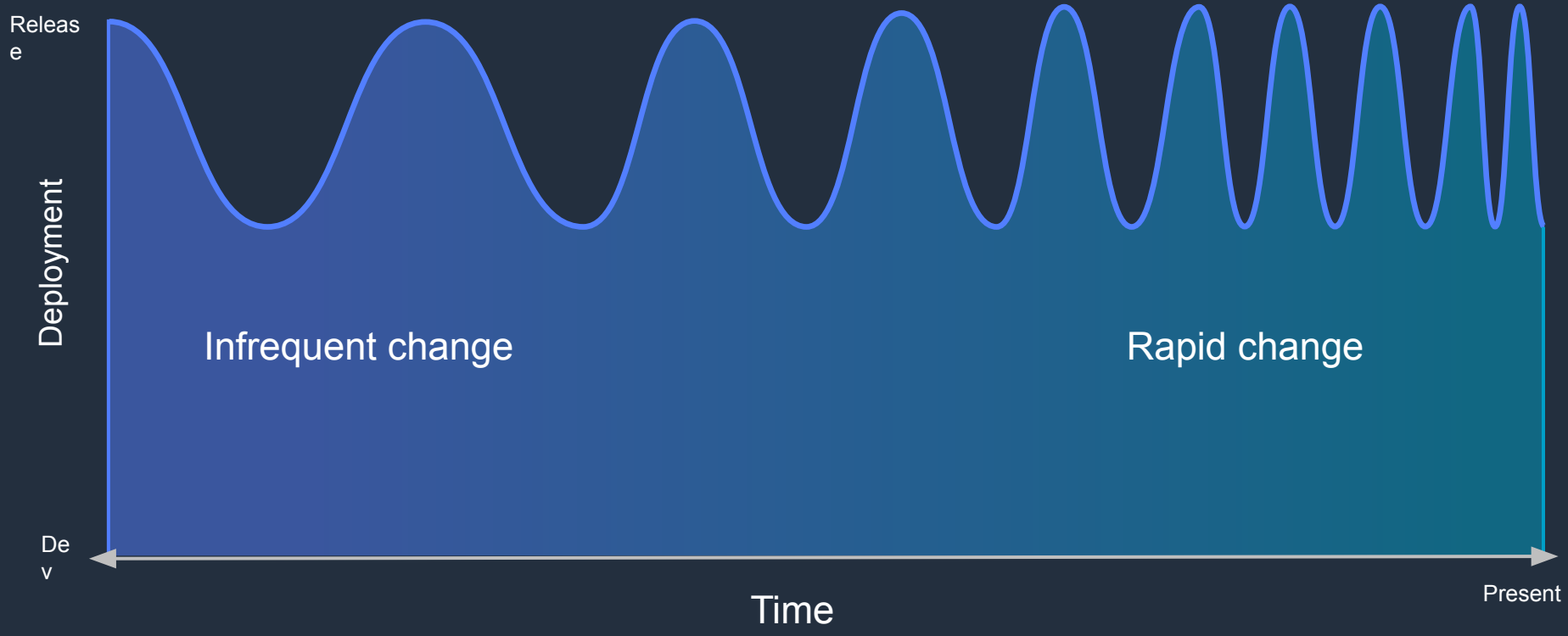
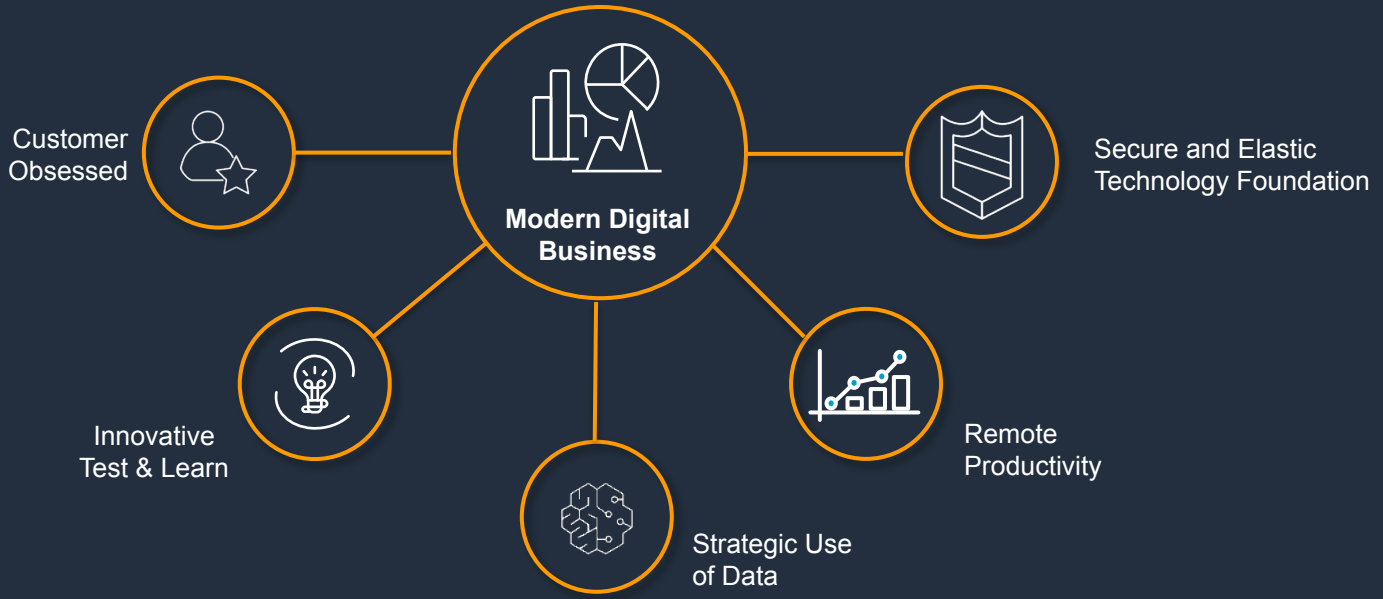
Driving transformation through pace of change



Characteristics of a Modern Business



Why cloud infrastructure with AWS?

Increase IT agility and performance

Nearly unlimited scalability

Improve reliability

Lower costs

Maximum security

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Traditional 3-tier Architecture

Web servers

Presentation layers

Application servers

Business logic

Database servers

Data layer

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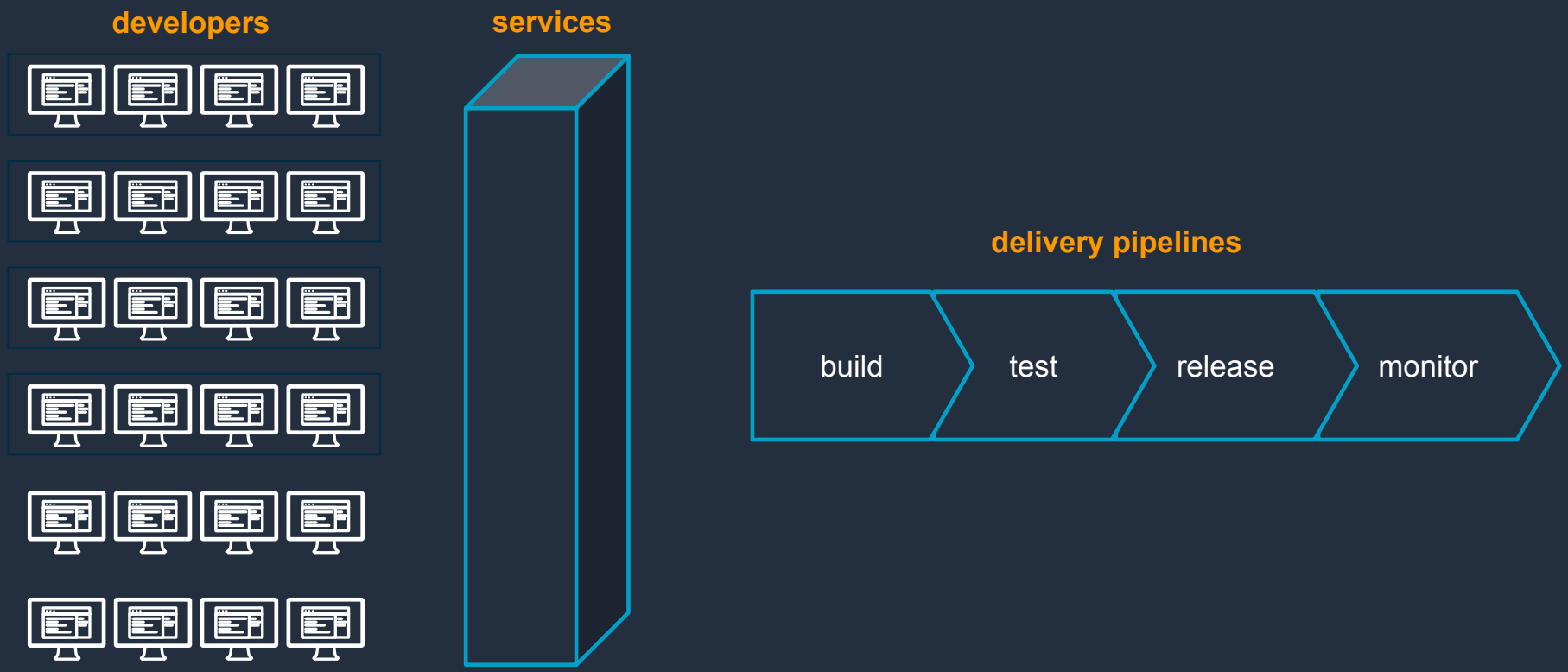
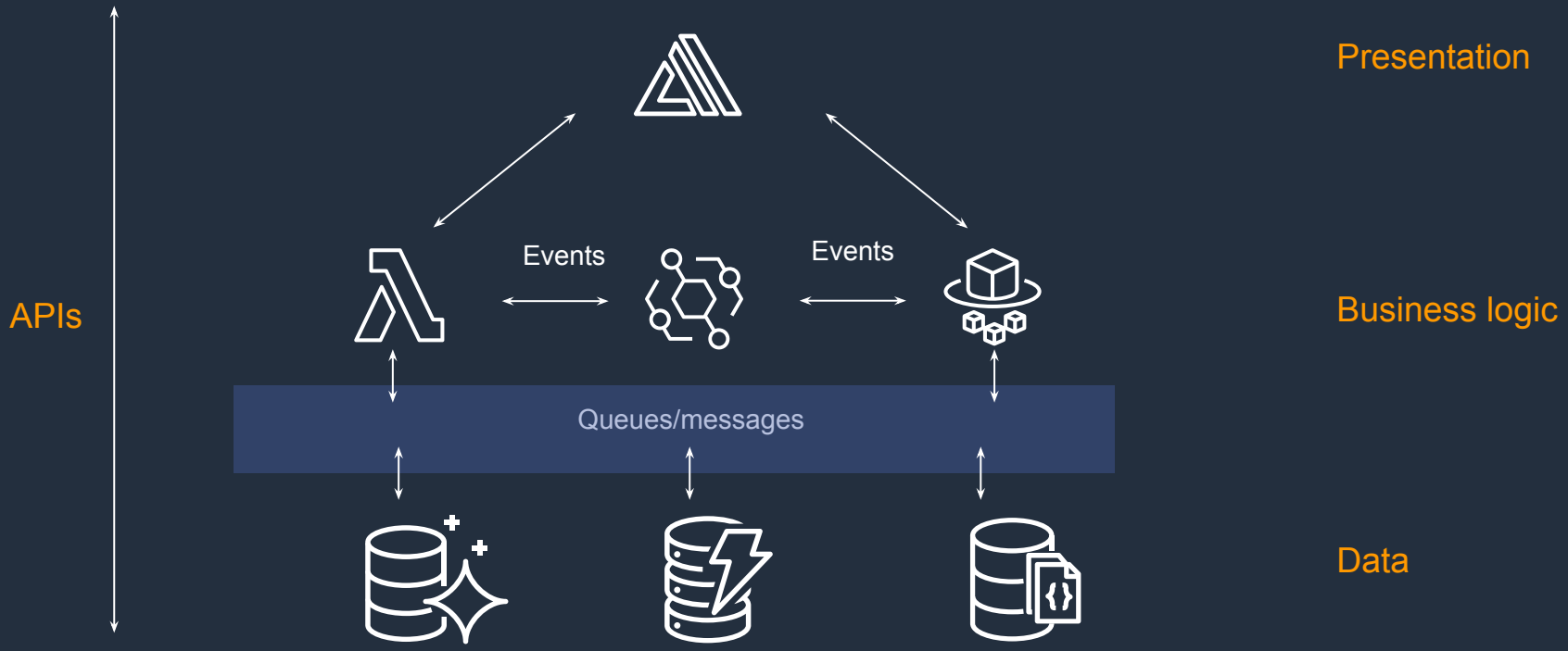
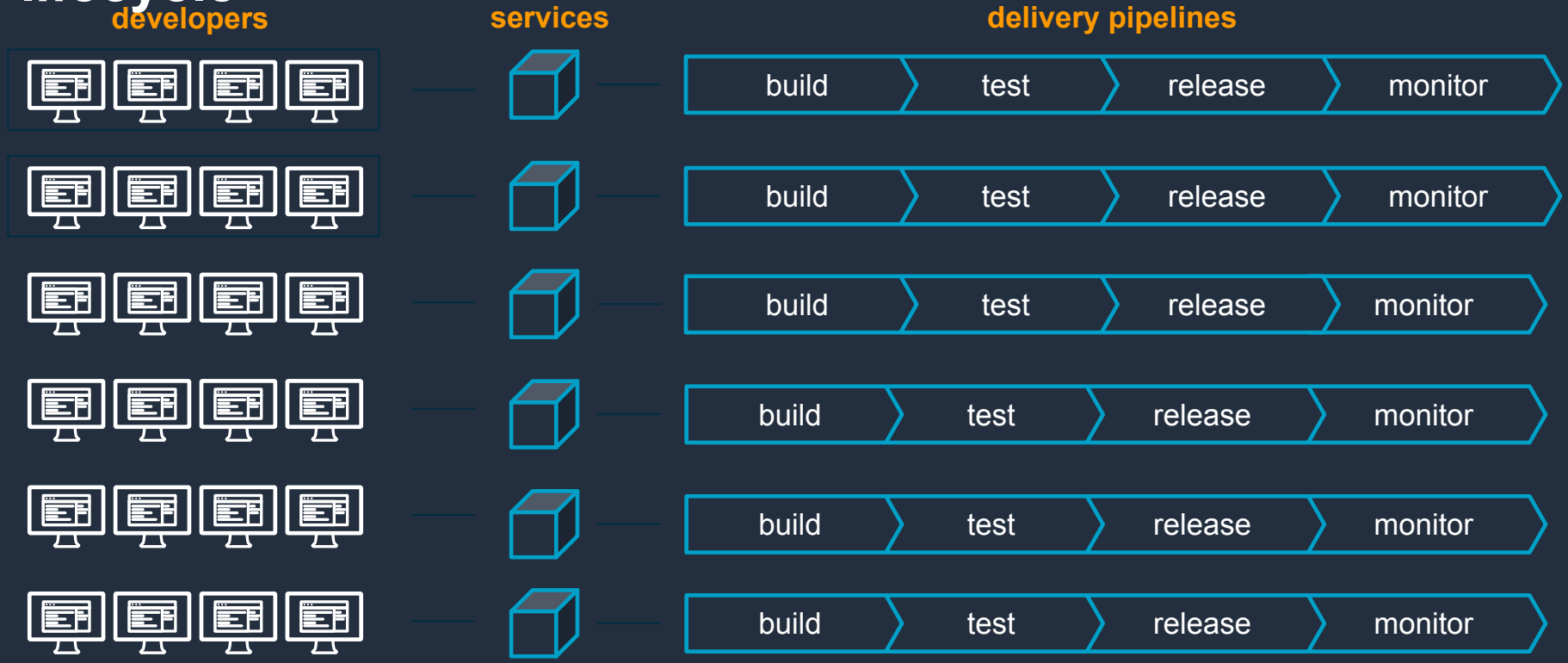
Deployment: Monolith development lifecycle



Modern Application Architecture

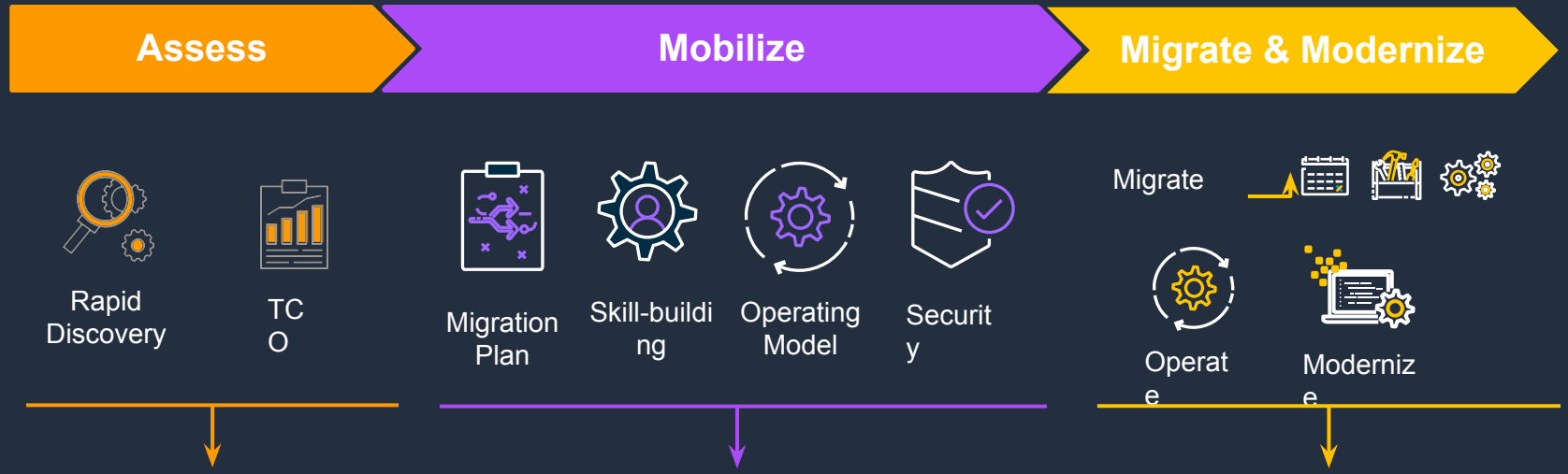


Deployment: Microservice development lifecycle



Perspectives to consider

Transformation Journey



Migration Strategy

Reduce your footprint

Retire

SaaS

Migrate to AWS

Lift and shift

Modernize

Refactor

Re-platform

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Incentives

Technical

Get funding for technical work, proofs of concept, training and workshops to maximize the value of AWS for your business

Networking

Engage with other people in the AWS ecosystem who can help your business succeed

Go-To-Market

Help grow your customer base through the AWS Partner Network, Marketplace, Launchpad, and more

Client Success Story - Talix

Prasanth Ramachandran

Director, Solutions Delivery & Architecture

Talix

BACKGROUND

- Talix provides a HIPAA-compliant, SaaS platform for risk adjustment and quality improvement solutions for healthcare and insurance providers. The company is VC-backed.
- They implement data extraction, natural language processing, machine learning.
- Mix of multi-tenant and single-tenant architectures.

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Talix

CHALLENGES

- Rapid growth.
- Expansion in data center constrained.
- High turnaround time for onboarding new clients.

Phases


Assessment
Discovery & Planning
Mobilization & Pilot Migration
Rapid Migration

Executing the Migration Assessment

Conducted initial review.

Catalogued existing inventory (manually).

Presented high-level TCO (estimated 12% savings - 1 year).

Presented high-level project plan.

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Pre-Migration
INFRASTRUCTURE

- Xen VMs in data center.
- Shell scripts for batch jobs automation.
- NAS for shared file system.
- Single Oracle database with backup.

Discovery & Planning
STAGE

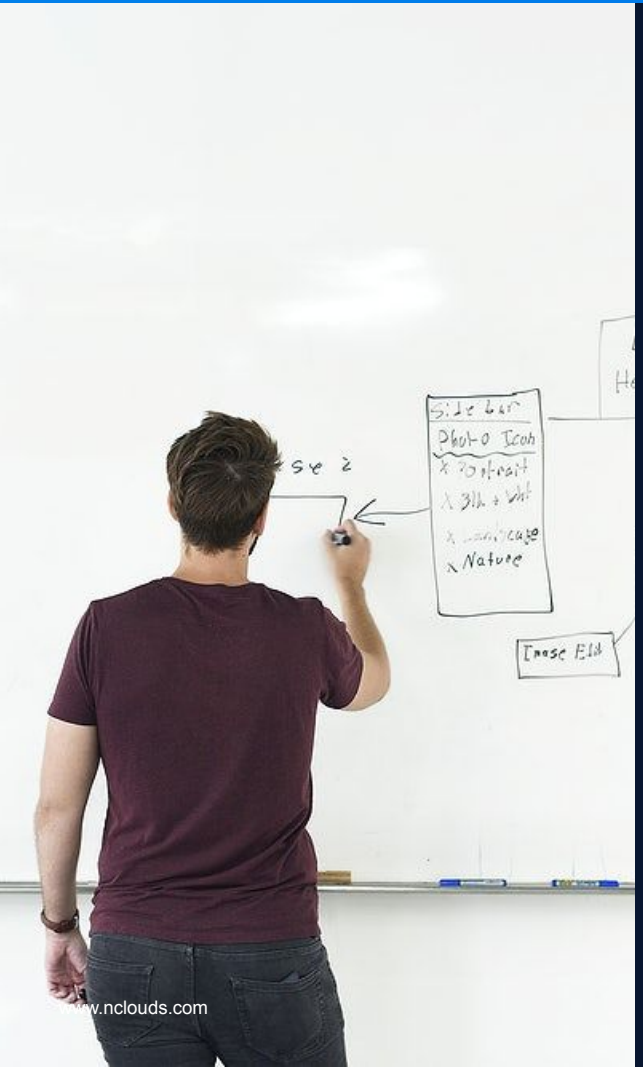
- Onboarding and project cadence setup (Jira, Scrum).
- Application discovery (internal documentation, code repo).
- Documenting dependencies and constraints (technical deep dives).
- Refining project plan.

Constraints
UNCOVERED

- New customers need to be onboarded directly to AWS.
- Existing customers must be migrated from data center.
- Minimum disruption of existing workflow.
- Maintain compliance in each step.

Insights

- Single-tenant resources can be separated and migrated individually.
- Tenant-specific URL switching is possible for a data center + AWS Hybrid Setup (temporary).
- Common-resources have to be kept up-to-date.
- Infrastructure-as-Code (IaC) setup can make migration and new provisioning process practically the same.



Migration
METHODOLOGY

- Lift, “Tinker”, and Shift.
- Infrastructure-as-Code will automate provisioning.
- More powerful instance configuration tools to reduce code complexity.
- “State” (files or DB tables) copied over.
- New cloud-native workflow adopted for batch processing.

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Mobilization Phase

BASE INFRASTRUCTURE BUILDOUT

- Refined customer’s AWS multi-account setup.
- Secured IAM user setup.
- Network infrastructure setup for prod/non-prod.
- Site-to-Site VPN setup for data transfer.
- Security/Access control mechanisms validated.

Mobilization Phase
CODE DEVELOPMENT & PILOT MIGRATION

- Terraform for IaC.
- Ansible for instance configuration.
- Workflow automation with AWS Lambda and Amazon SQS.
- Scripts for snapshotting and copying data (files and DB tables).
- Migration runbook.
- Pilot migration (non-prod) and validation.

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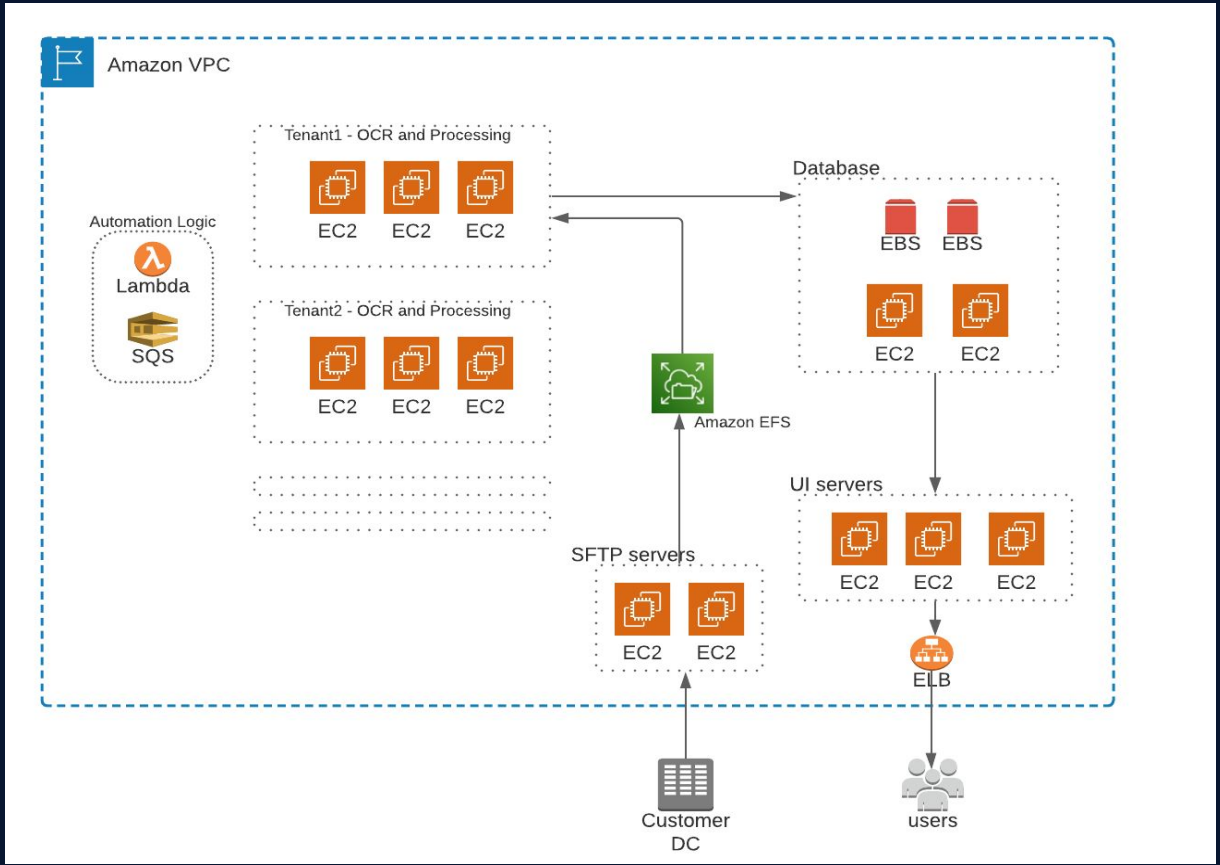
Rapid Migration
PHASE

- Resources common to all tenants replicated .
- Performed per tenant (parallelization possible).
  - Provisioning AWS resources.
  - Transferring “State” (files / DB tables).
  - Validation.
  - URL switching / cutover.

Architecture Diagram (Post-migration)



Migration
RESULTS

- Existing workload fully migrated from data center.
- New clients directly provisioned on AWS.
- Adopted a cost-efficient workflow for batch processing.
- 12% TCO savings realized for 1-year timeframe. (More savings estimated for 3-year timeframe.)
- Now setup for growth.
- Further refactoring initiatives were started for better scalability and operational excellence.

nClouds Migration Process

Prasanth Ramachandran
Director, Solutions Delivery & Architecture

Steps Involved in AWS MIGRATION

- Migration Assessment
- Migration Proposal Presentation
- Discovery & Planning
- Mobilization & Pilot Migration
- Rapid Migration & Modernization

Migration ASSESSMENT

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- Introduction and initial data gathering.
- Kicking off automated inventory collection (Migration Evaluator).
- Collecting input on preferred migration methodology.
- Collecting information on Business Requirements, Constraints, and Timelines.

Advanced Steps in ASSESSMENT

- Formal Migration Readiness Assessment (MRA)
- Application discovery
- Right-sizing analysis

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Output of ASSESSMENT

- Migration Readiness Report
- Multi-year TCO & ROI analysis
- Migration proposal
    - High-level migration plan with timelines
    - High-level target architecture
    - Costs for migration
    - Incentives

Discovery & PLANNING

- nClouds onboarding
- Establishing project cadence
- Discovery and technical deep-dive sessions
- Development of prioritized backlog

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Mobilize Phase

PLANNING FOR AWS OPERATION

- CCoE Strategy and Training Plan (governance)
- Cloud Operating Model
- Business Continuity Strategy
- Cost and Billing Management
- Operations Health
- AWS Security Model and Best Practices

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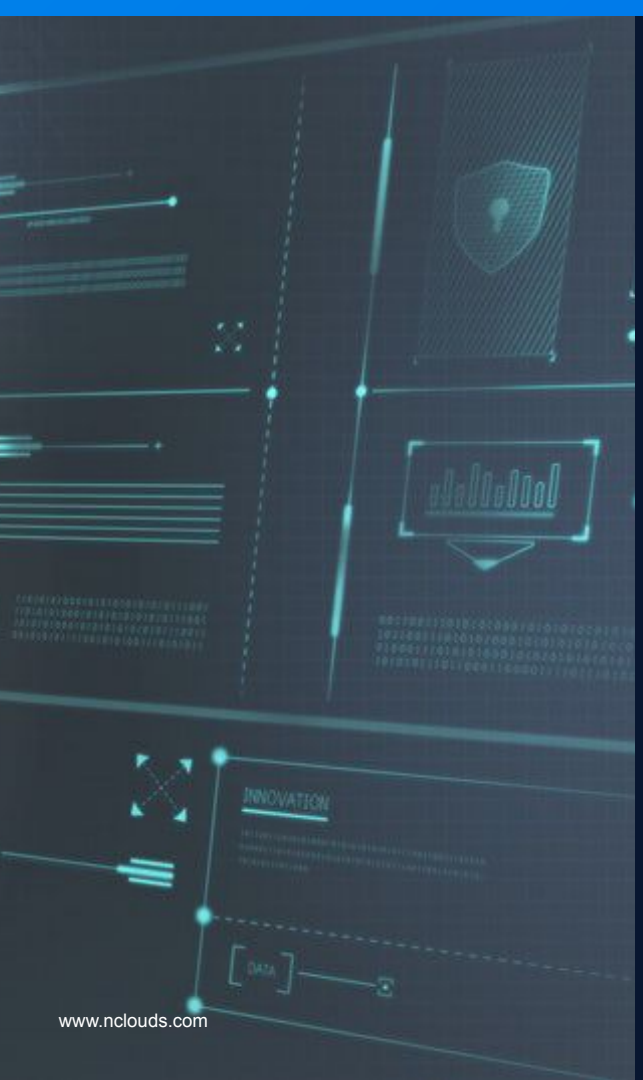
Mobilize Phase
FOUNDATION WORK

- AWS account setup
- Identity and access management
- Network infrastructure buildout

Mobilize Phase
FINALIZING ARCHITECTURE

- Finalized version of target architecture
- Proof-of-concepts (POCs) built for due diligence (optional)
- Data transfer strategy
- Right-sizing strategy
- Finalized version of projected AWS usage costs



Mobilize Phase

FINALIZING MIGRATION PLAN

- Migration methodology
- Scripts, runbooks, automation
- Planning for downtime and traffic cutover
- Sample services utilized for “rehost”: AWS Server Migration Service, AWS Database Migration Service

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Mobilize Phase
PILOT MIGRATION

- Migration of a subset of identified “Application Groups” or “Stacks”
- Validation by customer
- Refinement of scripts and runbooks

Rapid MIGRATION

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- Parallel migration of “Application Groups” or “Stacks”
- A common pattern: Shutdown, Migrate, Validate, Cutover
- Tools and services are available to minimize downtime
- Temporary Hybrid Setup (Data Center + AWS) may be needed for complex migration use cases

Operate and CONTINUOUSLY IMPROVE

- Incremental refactoring possible for a workload fully on AWS
- Improvement can target Scalability, Cost Efficiency, and Operational Excellence
- Experiment with and adopt cloud-native architecture for new initiatives

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Q&A

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