AWS re:Invent

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DAT205

Increase migration velocity to AWS with Amazon DMA

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Agenda

DMA: Accelerating database and analytics migrations to AWS with Amazon Database Migration Accelerator

DMA Advisors

DMA Migrations

Example scenarios

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Migration and modernization: Pathways to innovation

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Lift and shift, move to managed, or break free?

Value

Migrate: Lift and shift
(Re-host)

- Quickest way to onboard workloads
- Self managed (i.e., runs as on-premises)
- Vendor lock-in on commercial databases (e.g., Oracle, SQL Server)

Migrate: Move to managed
(Re-platform)

- Reduce undifferentiated heavy lifting (backup, recovery, patching, etc.)
- RDS Commercial Engines (Oracle, SQL Server) & Open Source (PostgreSQL, MySQL, MariaDB)
- Support for growing number of third-party apps

Modernize: Break free
(Re-factor)



- Reduced licensing costs
- Move to AWS modern managed databases like Aurora, DynamoDB, and Amazon Redshift for faster innovation
- Break free from legacy databases
- Avoid lock-in with open source database
- Pick the right tool for the right job: choose from 15 purpose-built databases

Time

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DMA – Accelerating database and analytics migrations to AWS

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Database Migration Accelerator (DMA)

Who is DMA

The DMA team is a part of the AWS Database Service Organization (DBSO) and is comprised of database and analytics migration specialists. The team includes experts in all of the database migration assess, mobilize, and modernize pillars. Staff includes data migration engineers, migration success managers, technical project managers, DMA advisor SSAs, business leaders

What is DMA

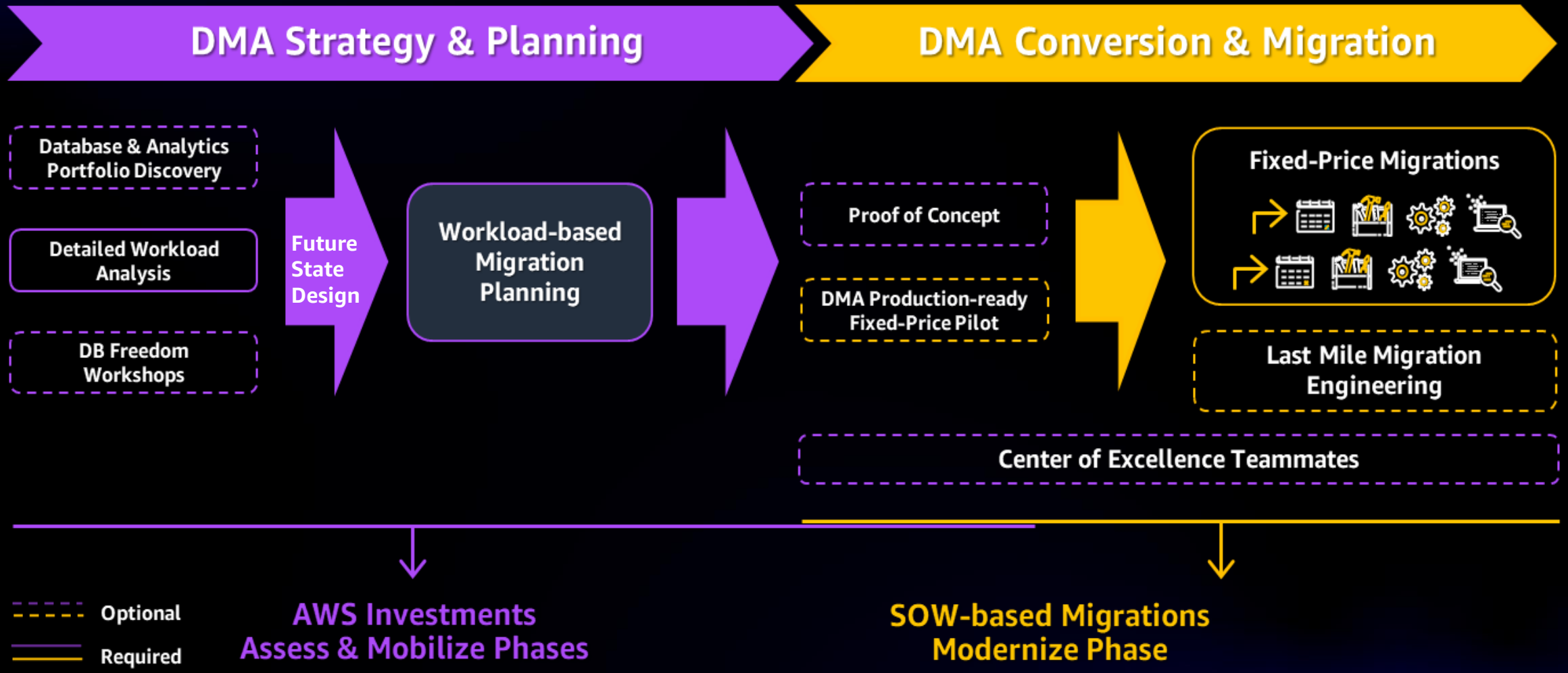
DMA was created to fast forward customer migrations to AWS Database and Analytics services by providing: 1/ Free **DMA Advisory Services** that span the Access, Mobilize, and Modernize phases; and 2/ Fee based **DMA Migrations** – firm fixed price workload migrations plus “Last Mile” assistance in support of the Migrate and Modernize phase

Why/When DMA

WHY: To accelerate database and analytics migrations to AWS
WHEN: 1/Early in the engagement cycle often introduced as a part of AWS DB Freedom Program; 2/Six months prior to Oracle/Microsoft licensing renewals; 3/During strategic architectural discussion; 4/When emergent business needs necessitate a rapid migration such as data center shut down

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Database Migration Accelerator fixed fee



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DMA advisors



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Database and Analytics Portfolio Discovery

DISCOVERY AND ANALYSIS OF INDIVIDUAL OR MULTIPLE WORKLOADS

Scope

During this activity, we will work closely with the AWS account teams with assessment data to support creation of the migration business case by performing a high-level analysis of the selected workloads with a focus on the database and analytics component of the fleet

Key Activities

Discovery - Migration Evaluator, ModelizeIT, or other customer preferred (this activity will require extensive Account SA and Platform SA involvement)

Analysis - Migration Portfolio Assessment (MPA) or other similar tools will be used to analyze the discovered servers/workloads. The DMA advisors will ensure database and analytics workloads are part of the discovery and analysis



Outcome

Cataloging of server-level details, application and database/analytics workloads in a tool like Migration Portfolio Assessment (MPA) Tool or other

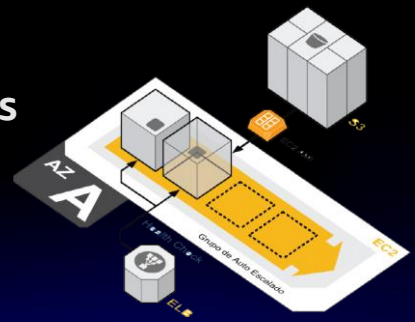
Resources

AWS:

- Account SAs
- Platform SAs
- DMA advisors
- ProServe/Partner

Customer:

- App/DB specialists
- Migration lead



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Workload analysis and future-state design

DESIGNED FOR INDIVIDUAL OR ENTIRE PORTFOLIO OF WORKLOADS

Scope

In order to expedite migration effort, this activity will focus on providing migration estimates, high-level future architecture for an individual or entire fleet of workloads in scope

Key Activities

Analyze existing applications/databases for complexity and sizing for all/majority of targeted workloads (App & DB) using Database Migrations Assessment Framework (DMAF) and/or similar tools and models.

Rationalize potential re-factoring and re-platforming against AWS DBs, determine right purpose built database engines, and level of migration effort.

Provide high-level future-state architecture, effort, timeline and resource plan in order to execute on the DB Freedom journey



Outcome

Total migration effort & platform cost estimates for all the workloads in scope

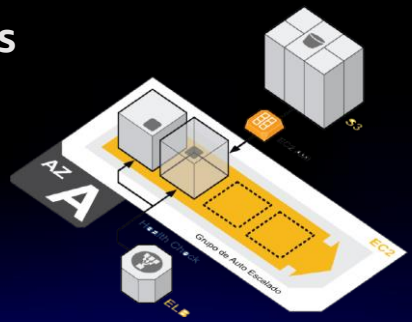
Resources

AWS:

- Platform SAs
- DMA advisors
- ProServe
- Partners

Customer:

- App/DB specialists
- Migration leads



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DMA Migrations

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Fixed-price migrations

HANDS-ON KEYBOARD DELIVERY

Scope

This is the most critical and important activity within the DMA service offering. This is hands-on delivery of converted (any R-Type) workload on the desired AWS platform (EC2 or managed DB/Analytics)

Key Activities

Detailed Architecture Design – Picking up from the FSA done during the Assess & Mobilize Phase, this activity will provide detailed level architecture design per workload for execution

Database/Analytics Platform – The DMA Delivery team will full convert (for Refactor) database/analytics schema, sample/target data with fully tested and documented use cases as test criteria. For Replatform/Rehost, only minimum required changes will be made

App-Tier – The DMA team will remediate the App-Tier to work with the converted engine (for Refactor), and minimal/no changes are expected for other R-types



Outcome

Fully converted (based on agreed upon R-Type) workload, with qualified and documented Test Results.

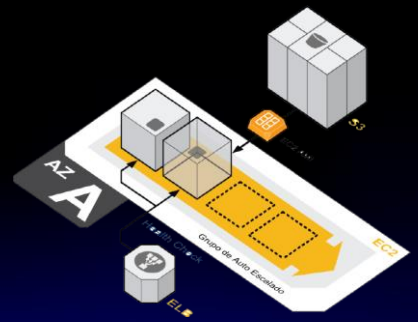
Resources

AWS:

- Migration success managers
- Delivery engineers

Customer:

- App/DB specialists
- Migration lead



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Database Migration Accelerator fixed fee

Firm-Fixed-Price, HANDS-ON, Risk-Mitigated *force multiplier* to convert legacy databases



Fixed, competitive price

Know exactly how much it will cost to migrate. Only pay upon successful completion



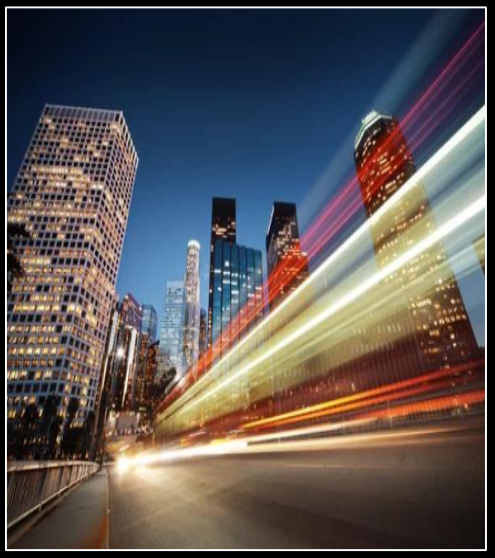
Reduced complexity

Let AWS experts perform the most complex conversion steps

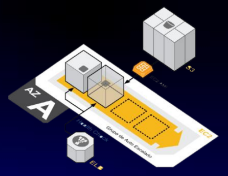


Accelerated migrations

Faster time to value



Faster with DMA!



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Use cases

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Examples of DMA use case scenarios

Scenario 1

EC2 to RDS

Customer wants to reduce cost and lower operational overhead by migrating SQL Server Enterprise databases running on EC2 dedicated hosts to RDS SQL Server Standard

Scenario 2

On-prem to Aurora PostgreSQL

Customers ability to expand globally is restricted by the performance of a business critical read intensive analytics application running on Oracle Exadata in their on-premise data center

Scenario 3

Relational database to DynamoDB

Customer needs AWS technical advice to support partner implementation in improving responsiveness of a suite of write intensive IBM DB2 transactional systems

Scenario 4

Sybase ASE to Amazon Redshift

Customer wants to gain scalability & innovate faster by migrating to Amazon Redshift from legacy Sybase ASE data warehouse

Scenario 5

Multiple relational databases to S3 data lake

Customers ability to build analytics is limited by large number of database instances across multiple database platform types

Scenario 6

Azure SQL DB to Aurora PostgreSQL

Independent Software Vendor (ISV) wants to move to AWS to meet regulatory compliance

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Examples of DMA use case scenarios

Scenario 1

EC2 to RDS

Customer wants to reduce cost and lower operational overhead by migrating SQL Server Enterprise databases running on EC2 dedicated hosts to RDS SQL Server Standard

Approach
- Help design future state application and database architecture
- Implement performance, scalability and availability requirements
- Planning and automation to facilitate production cut over

Benefits
- Reduce cost and operational overhead
- Minimize migration risk with guidance from center of excellence
- Enable adoption

Scenario 2

On-prem to Aurora PostgreSQL

Customers ability to expand globally is restricted by the performance of a business critical read intensive analytics application running on Oracle Exadata in their on-premise data center

Approach
- Help design future state application and database architecture
- Implement performance, scalability and availability requirements
- Conduct proof of concept and assist creating production ready pilots
- Refactor databases and application

Benefits
- Innovate faster with open source platforms
- Reduce cost by breaking free from commercial databases
- Built in scale to meet growth expectations

Scenario 3

Relational database to DynamoDB

Customer needs AWS technical advice to support partner implementation in improving responsiveness of a suite of write intensive IBM DB2 transactional systems

Approach
- Conduct portfolio discovery
- Perform workload assessment
- Help design future state application and database architecture
- Apply technical expertise to convert complex relational schema to no-SQL

Benefits
- Increased application responsiveness
- Access to AWS experts to handle technical platform complexities
- Train customer and the partner on migration best practices

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Examples of DMA use case scenarios

Scenario 4

Sybase ASE to Amazon Redshift

Customer wants to gain scalability & innovate faster by migrating to Redshift from legacy Sybase ASE data warehouse

Approach
- Help design future state application and database architecture
- Refactor data model to meet performance, scalability, and availability requirements
- Rewrite legacy ETL jobs

Benefits
- Leverage contemporary platforms to meet modern data warehouse requirements
- Reduce cost and operational overhead
- Minimize migration risk with guidance from center of excellence

Scenario 5

Multiple relational databases to S3 data lake

Customers ability to build analytics is limited by large number of database instances across multiple database platform types

Approach
- Help design future state application and database architecture
- Build a data lake for analytics by replicating transactional databases through DMS in to S3
- Build monitoring service for data quality

Benefits
- Unified data access for analytics
- Cost effective way to gain increased historical storage
- Leverage lake house pattern to improve data management

Scenario 6

Azure SQL DB to Aurora PostgreSQL

Independent Software Vendor (ISV) wants to move to AWS to meet regulatory compliance

Approach
- Mapping Azure technologies to AWS equivalents
- Facilitating phased migration approach to align with end customer needs
- Help design future state application and database architecture

Benefits
- Compliance Infrastructure
- Gain scalability to address potential growth
- Train customer and the partner on migration best practices

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Thank you!

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