



AWS Mainframe Modernization – Technical Highlights

Paulo Vitor Pereira

WW Tech Leader,
AWS Mainframe Modernization, AWS

David Yahalom

Principal Product Manager,
AWS Mainframe Modernization, AWS

Modernizing mainframe applications unlocks business value

AWS CLOUD SERVICES CAN ACCELERATE MODERNIZATION



Cost savings

Lower operating cost for managed runtime

Unified procurement of modern toolchains

Consumption-based, pay-per-use pricing



Agility

Pre-integrated toolchains

Modernize to macroservices

Access to modern developers and partners



Innovation

Near real-time data replication

Cloud-native access to analytics, ML, AI

DevOps for mainframe apps



Resilience

Automated runtime health monitoring

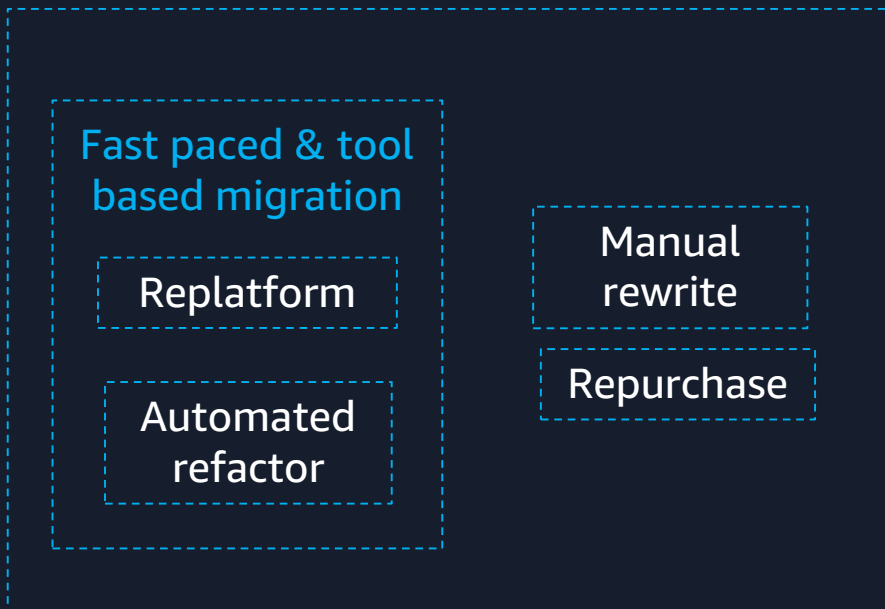
Centralized security and compliance

Application testing for functional equivalence

AWS offers application migration and augmentation paths

Migration-enabled modernization

Strategic journey to cloud



Augmentation & integration

Tactical innovations for cloud-driven benefits



Mainframe modernization accelerators



Automated application testing

Automate iterative execution of tests at scale for functional equivalence, cost savings and speed

Use cases include mainframe modernization and regression testing



File Transfer & Data Replication

Transfer mainframe data sets, and replicate mainframe database data in near real-time to the AWS Cloud

Use cases include analytics, AI/ML, large-scale modernization

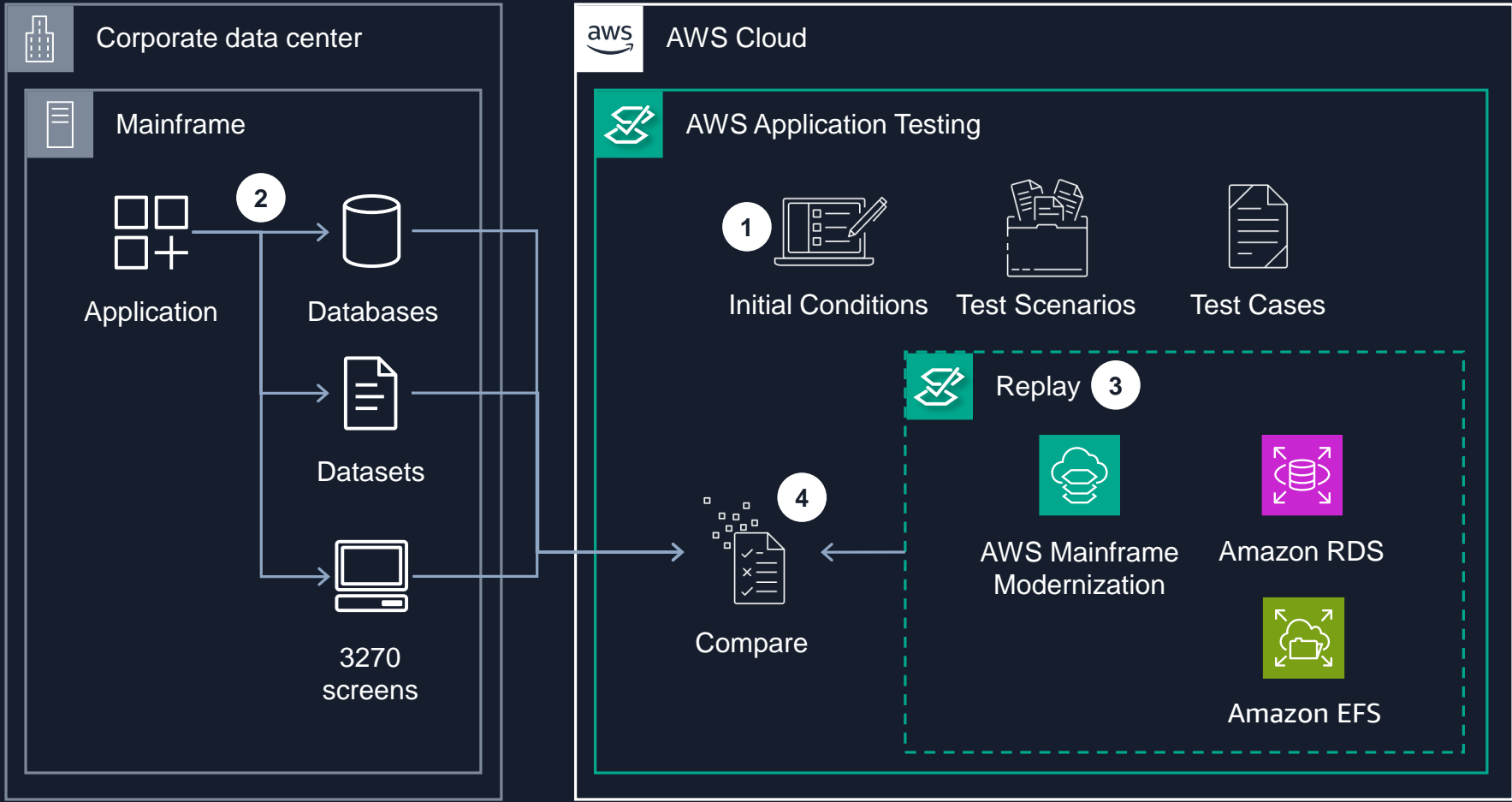


DevOps

Create and manage CI/CD pipelines on AWS for mainframe applications

Use cases include AWS for DevTest, DevOps on cloud for applications on mainframe or on AWS

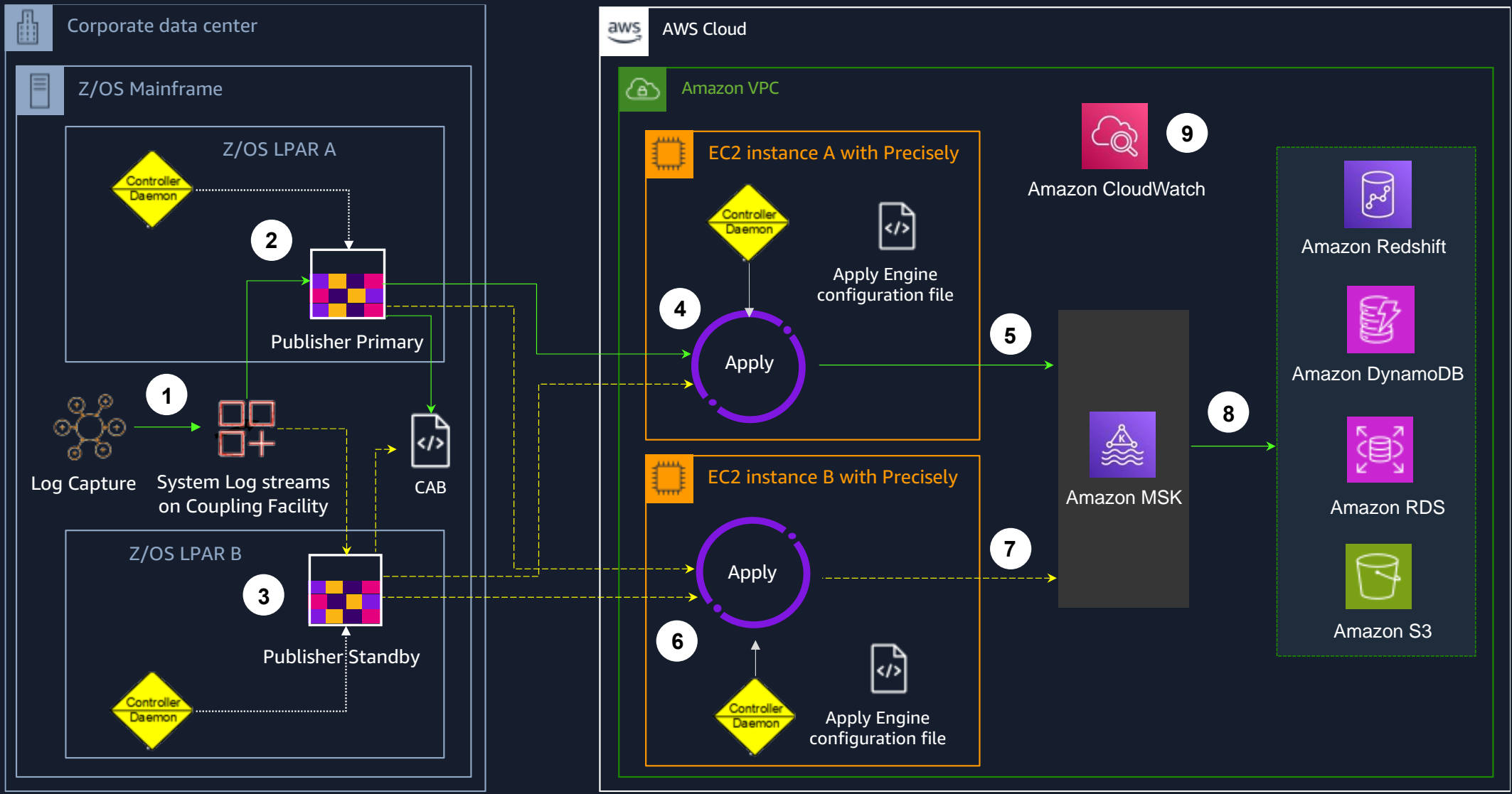
AWS Mainframe Modernization Application Testing



- 1 Test Cases, Test Scenarios, and Initial conditions are created in the AWS Application Testing Console
- 2 Steps from the Test Cases are executed in the legacy application, and the data sets, databases, and 3270 screens are recorded
- 3 The same Test Scenarios are replayed on AWS using the infrastructure defined by the Initial Condition, using the modernized application
- 4 The outputs from the modernized application are compared to the ones recorded on the legacy application



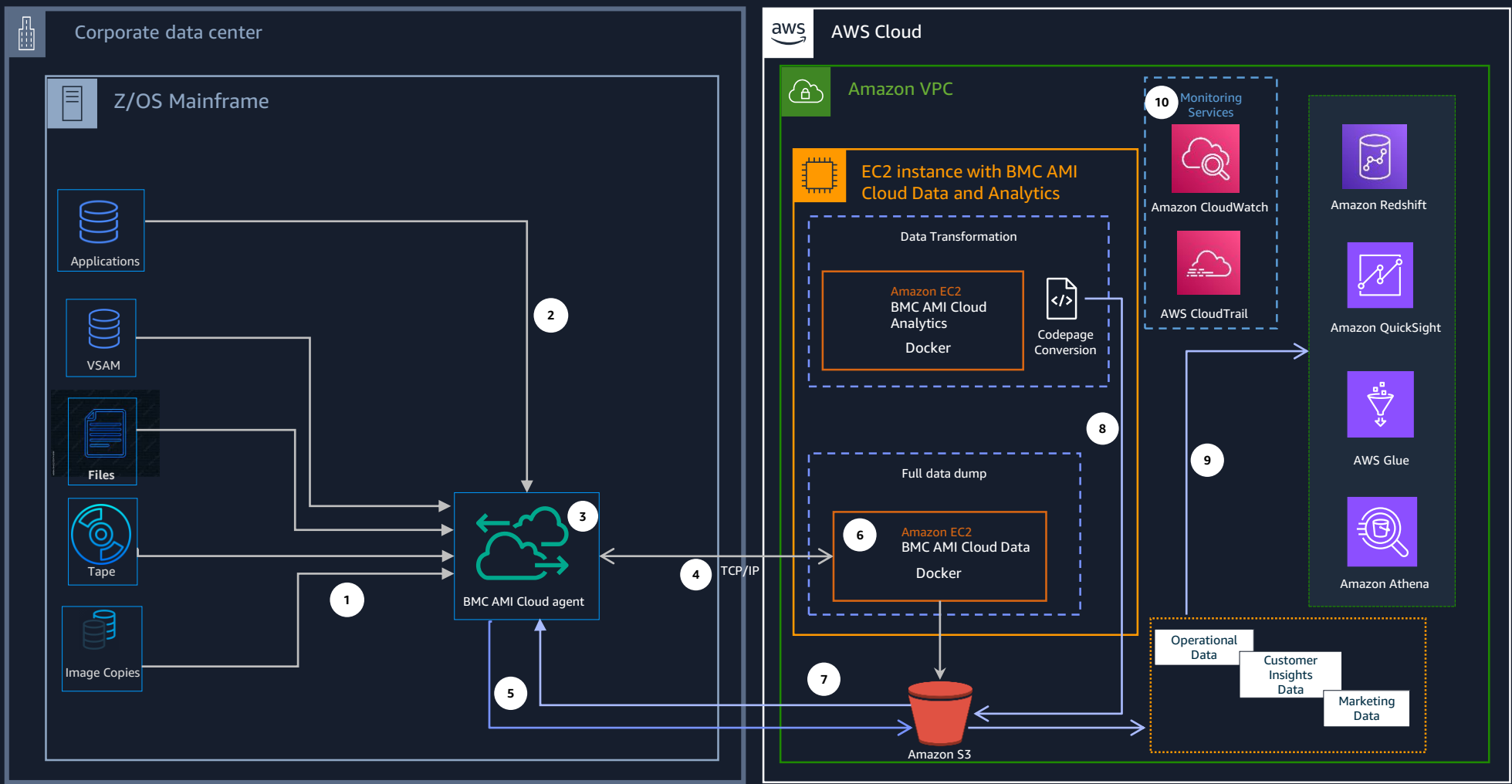
AWS Mainframe Modernization Data Replication



- 1 Log Capture writes to Coupling Facility based LogStream
- 2 Primary Publisher on one LPAR
- 3 Standby Publisher on another LPAR
- 4 One Apply Engine can connect to Publisher
- 5 Active Apply Engine writes to MSK
- 6 Other Apply Engine retries after certain intervals
- 7 When connected because the active Apply Engine ends/ stops picks up the next message from Publisher controlled by Daemon
- 8 MSK cluster is highly available and fault tolerant
- 9 Dashboard shows the details of active agents



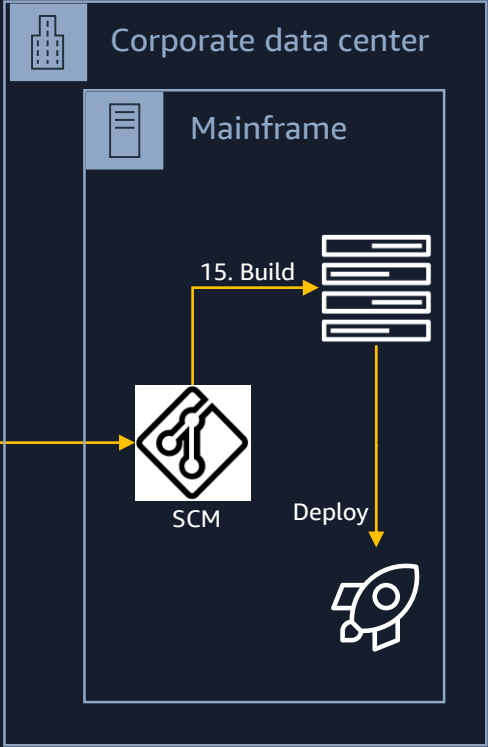
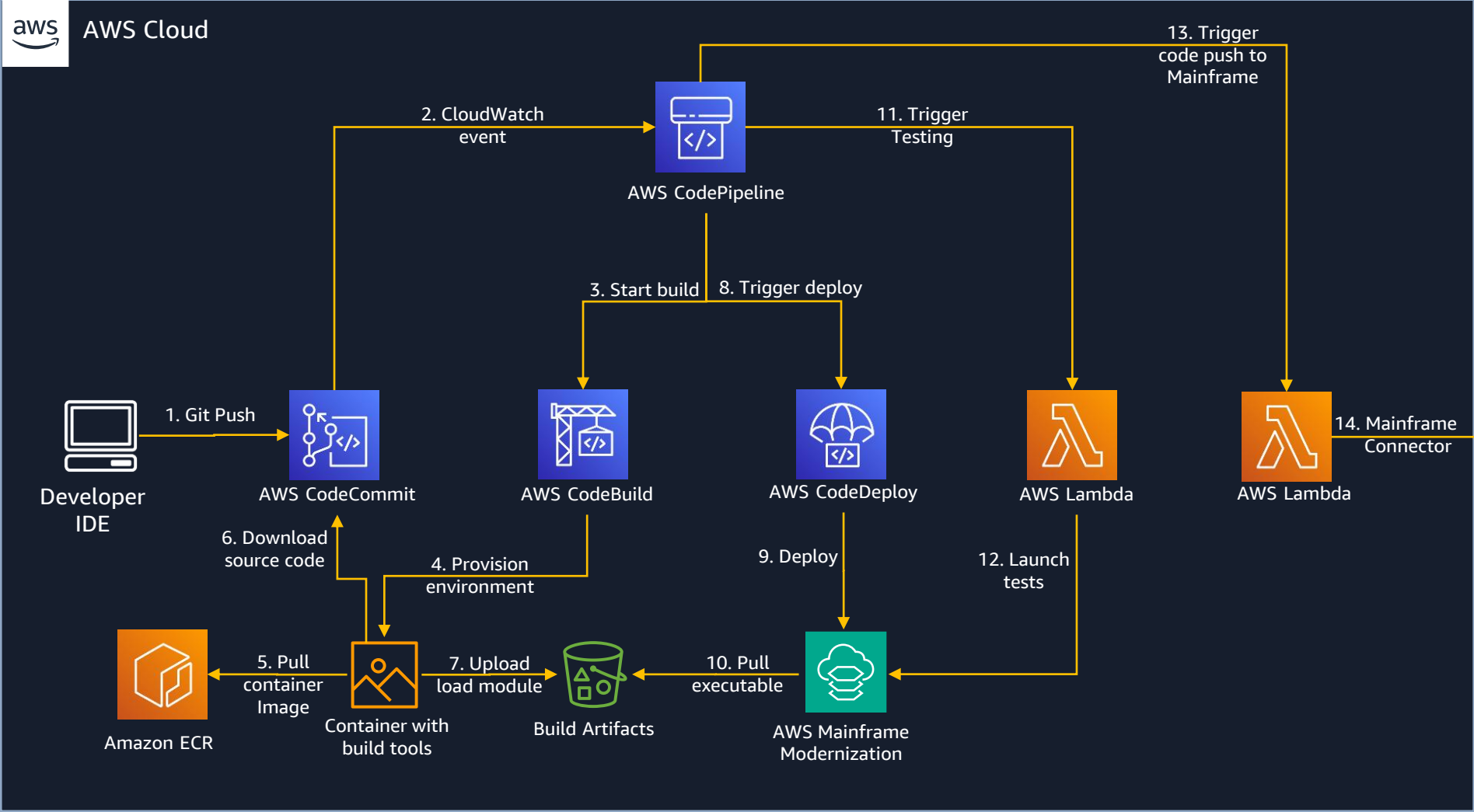
AWS Mainframe Modernization File Transfer



- 1 Agent reads data from various dataset on Mainframe. Files(PS, VSAM, GDG), Tape, DB image copies.
- 2 Alternatively, Agent presents a "Cloud Data Set" device
- 3 Agent receives data, create chunks, compress, encrypt
- 4 Agent retrieves policies and schedules from BMC AMI Cloud Data
- 5 Agent writes chunks as object to AWS S3
- 6 AMI Cloud engine manages backup/archive retention policy and space management
- 7 Agent reads from S3 to restore data to MF DASD
- 8 BMC AMI Cloud Analytics does the transformation of S3 data objects into an open format either as a CSV or JSON file. This file could get processed further by business intelligence, data warehousing, reporting, AI and machine learning applications.
- 9 Transformed data is processed via various channels by business intelligence and analytics tools that deliver insights for your throughout your organization.
- 10 CloudWatch delivers a comprehensive solution for collecting logs, analysis, and triggering events from cloud environments. BMC AMI Cloud Data also supports monitoring the status and results of all activities via the activities page in the BMC AMI Cloud Data UI. See [here](#)



Development and Test – Cobol CI/CD Pipeline on AWS





AWS Mainframe Modernization


Application Testing

Accelerate and automate testing on-demand at large-scale

Supports a wide range of application use cases


Validate application equivalence iteratively

Testing workflow




Record on Source

Capture reference data from the source mainframe



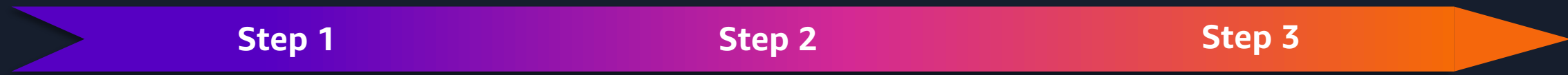
Replay on Target with Automation

Run the test scenario on the target AWS Mainframe Modernization service application




Compare with Automation


Automatic comparison of reference with replay datasets




Supports:



Data sets before and after



Database Changed Data and Sequence



Online screens fields and Interactions





AWS Mainframe Modernization

Application Testing Demo

Thank you!

Paulo Vitor Pereira

David Yahalom

