aws

AWS FOR SAP

Transform your business processes with the AWS SDK for SAP ABAP

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Agenda

- Why AWS for SAP?

- Accelerating business process innovation for SAP customers

- About the AWS SDK for SAP ABAP

- Developer experience & Security

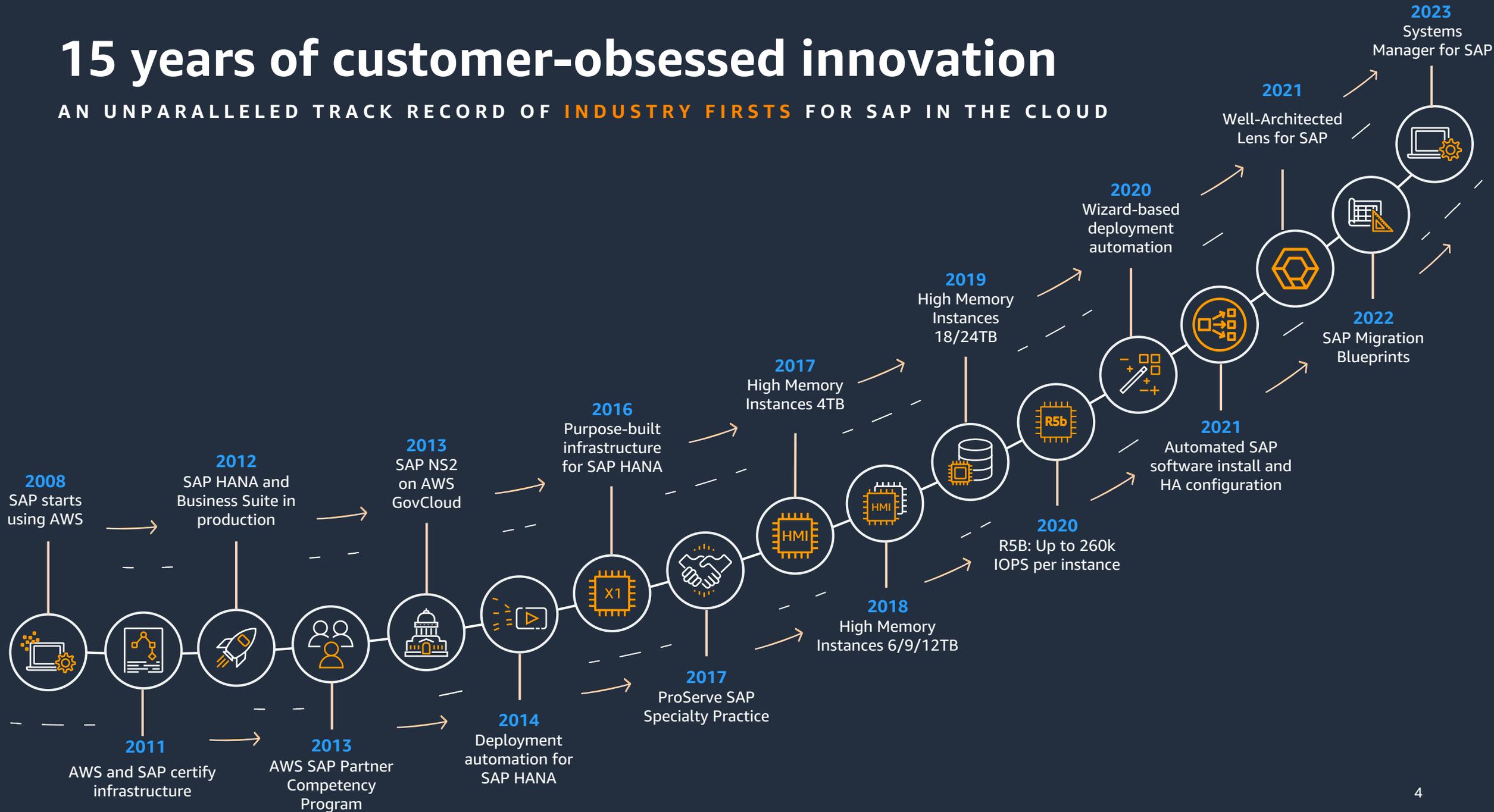- Innovating with AWS SDK for SAP ABAP + Demo

- Getting started

Why AWS for SAP?

15 years of customer-obsessed innovation

AN UNPARALLELED TRACK RECORD OF **INDUSTRY FIRSTS** FOR SAP IN THE CLOUD

2008
SAP starts using AWS

2011
AWS and SAP certify infrastructure

2012
SAP HANA and Business Suite in production

2013
AWS SAP Partner Competency Program

2013
SAP NS2 on AWS GovCloud

2014
Deployment automation for SAP HANA

2016
Purpose-built infrastructure for SAP HANA

2017
ProServe SAP Specialty Practice

2017
High Memory Instances 4TB

2018
High Memory Instances 6/9/12TB

2019
High Memory Instances 18/24TB

2020
R5B: Up to 260k IOPS per instance

2020
Wizard-based deployment automation

2021
Automated SAP software install and HA configuration

2021
Well-Architected Lens for SAP

2022
SAP Migration Blueprints

2023
Systems Manager for SAP

4

Why SAP on AWS ? RISE and BTP on AWS ?

Leadership

12yrs

Gartner recognises AWS the Cloud Leader for the 12th Consecutive Year

Capabilities

0

RPO on AWS due to AWS' unique multi AZ architecture (ALL Regions)

Innovation focus

100%

New BTP Services on AWS vs 83% on our closest competitor (in 2022)

Depth, breadth & adoption

200+

AWS Services across many domains 3,084 new features and services launched in 2021

7K+

of active SAP customers already using AWS for their SAP landscapes

60%

Less energy consumed with the same performance SAP adopts AWS Graviton processes for BTP

80

BTP services on AWS – more than any other hyperscaler. BTP, DWC, IRPA, AppGyver, etc...

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BTP services Exclusively on AWS

Thousands of customers across industries and geos trust AWS for SAP

HEALTHCARE & LIFE SCIENCES
moderna · Cerner · Bayer · ThermoFisher SCIENTIFIC · Bristol Myers Squibb · vyaire MEDICAL · CHANGE HEALTHCARE

ENERGY & NATURAL RESOURCES
bp · PHILLIPS 66 · origin · ENGIE · seaco · HUDBAY · Contact · TC Energy · PETRONAS · Newmont

RETAIL & CONSUMER GOODS
PELOTON · Zulily · UNIQLO · Fender · Delivery Hero · Zappos.com · zalando · BOSE

MEDIA & ENTERTAINMENT
MGM · NHL · LIONSGATE · twitch · RAZER

PUBLIC SECTOR & DEFENSE
LOCKHEED MARTIN · MAGELLAN AEROSPACE · National Bureau for Revenue · CAMBRIDGE UNIVERSITY PRESS · HOOPP · Sab

AUTOMOTIVE & TRANSPORTATION
VW · STELLANTIS · TATA MOTORS Connecting Aspirations · DB · KARMA · JAGUAR · BMW GROUP · LAND ROVER

MANUFACTURING & INDUSTRIAL
SIEMENS · GE · Invista · Schneider Electric · KOMATSU · Garrett ADVANCING MOTION · HOYA · JABIL · SUMITOMO CHEMICAL

AGRICULTURE, CPG, & FOOD/BEV
SWIRE COCA-COLA · Dole · rbi restaurant brands international · TATA CONSUMER PRODUCTS · CHS · Ferrara · GROWMARK · CCI · Sysco · E&J Gallo Winery

PROFESSIONAL/ FINANCIAL SERVICES
Liberty Mutual · pitney bowes · Edelweiss Ideas create, values protect · nationale nederlanden · medibank PRIVATE · XINJA HOW MONEY SHOULD BE

TECHNOLOGY
Infosys · lemongrass · TIBCO · CSS CORP Wired to SUPPORT · hp · msg · bizzy digital · SAP

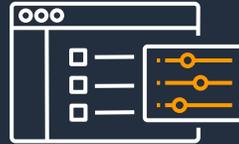# Accelerating business process innovation for SAP customers

SAP customers strive to innovate and transform

POPULAR INNOVATION FOCUS AREAS

Create **new revenue sources**, differentiated business models

Improve intelligence with **real-time monitoring** and data-driven decision making

Increase productivity with process automation

Optimize supply chain and logistics, reduce inventory

Accelerate **manufacturing throughput**, reduce defects, downtime, and waste

Delight customers with personalized recommendations and support

Customers innovate by combining SAP and AWS Services

Business process modernization and re-invention are table stakes

Mission-critical business processes and data reside in SAP

200+ AWS services for nearly every imaginable use case including IoT, AI/ML, analytics, and more

How customers are transforming their businesses with AWS for SAP

Used AWS services to deliver faster, more accurate invoice processing through **image recognition** and automated response via **chatbot**, all at **30% lower cost** of insight.

Uses AWS AI/ML to conduct **visual inspection** to reduce defects, employ **predictive maintenance** to reduce downtime.

SAP ERP data powers **fully-automated restocking**, helping further goal of $300M in operational value.
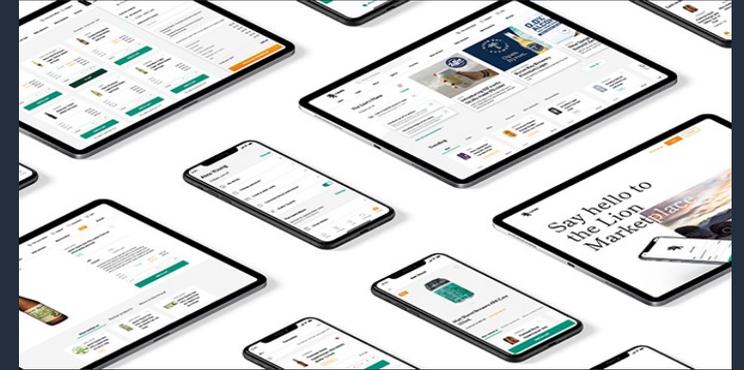
Used AWS services to enhance its customer beverage ordering experience with a **mobile app and portal** through SAP on AWS **serving 25,000 retailers**, restaurants, and vendors.
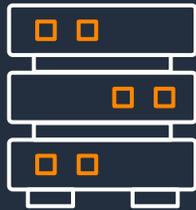
Integrating AWS services with SAP ABAP has traditionally required overcoming several challenges

Security and Authentication

Data Formatting

Complex Connectivity

Multiple point to point integration

About the AWS SDK for SAP ABAP

Innovate faster with the AWS SDK for SAP ABAP

Makes it easy for ABAP developers to extend and transform SAP-based business processes by harnessing the power of AWS services seamlessly using the SAP ABAP language.

Accelerate business process innovation

by giving ABAP developers access to all 200+ AWS services

Reduce architectural complexity

by eliminating the need to manually create complex integrations between SAP and AWS services, in both **self-managed and RISE with SAP** deployments

Maintain a strong security posture

by encrypting all payloads with HTTPS and enforcing SAP-level permissions

Upskill ABAP development teams

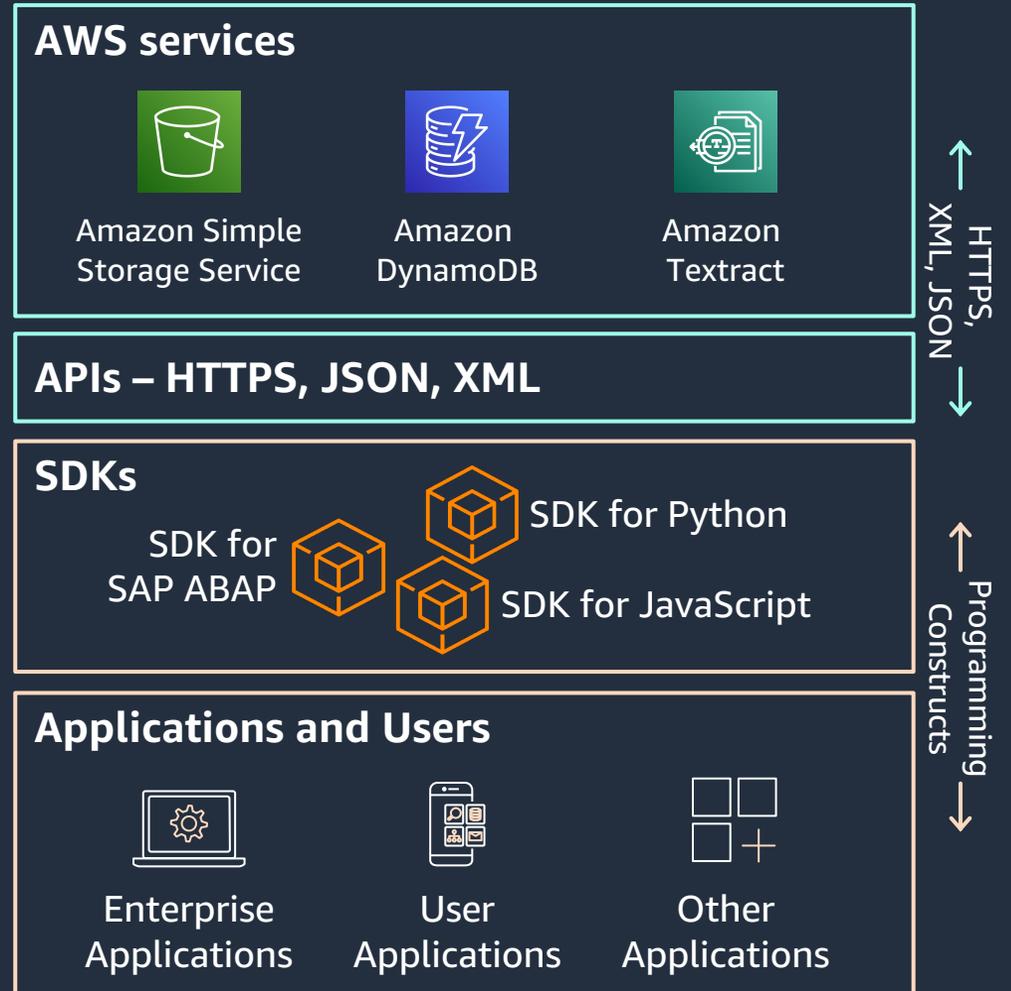by making it easy to for them to build cloud-based solutions

About AWS Software Development Kits (SDKs)

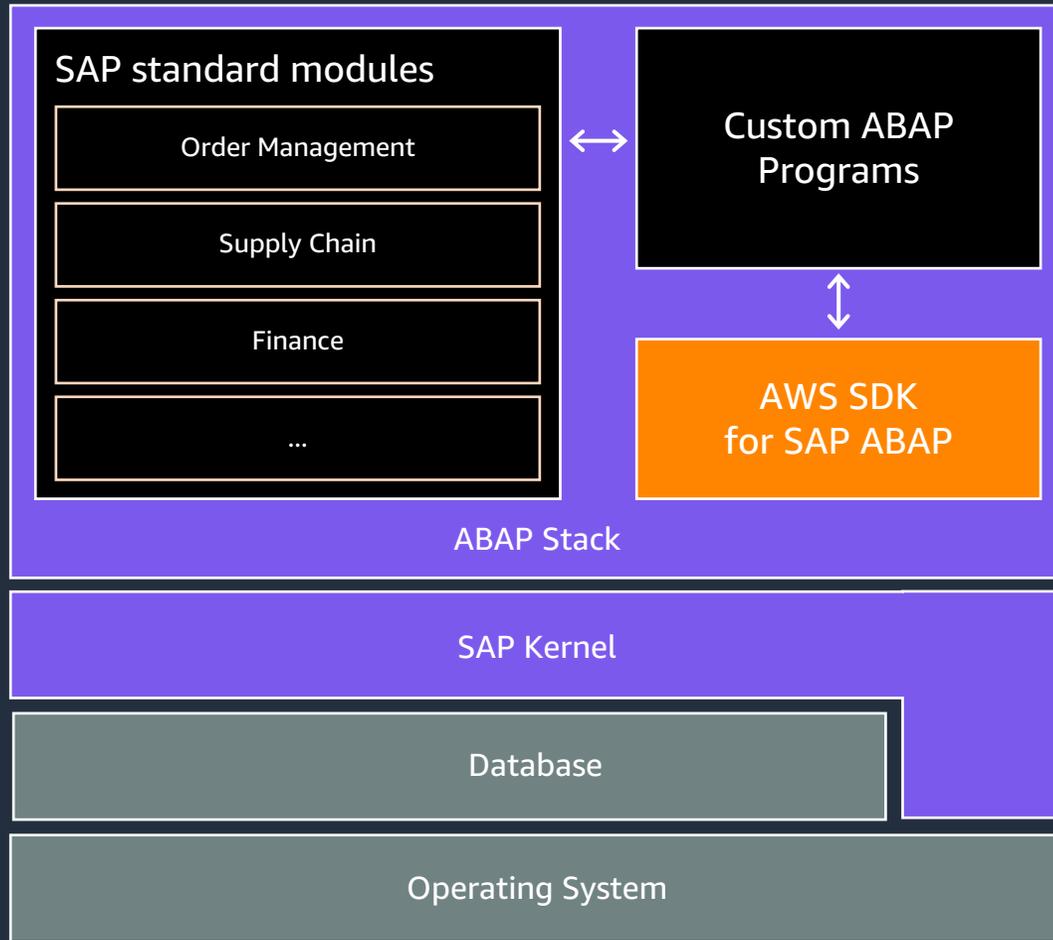**AWS SDKs present the AWS APIs to programmers in various languages, in a way that:**

- Is idiomatic to the language's particular constructs

- Follows expected approaches for configuration

- Is distributed and patched according to the language's conventions
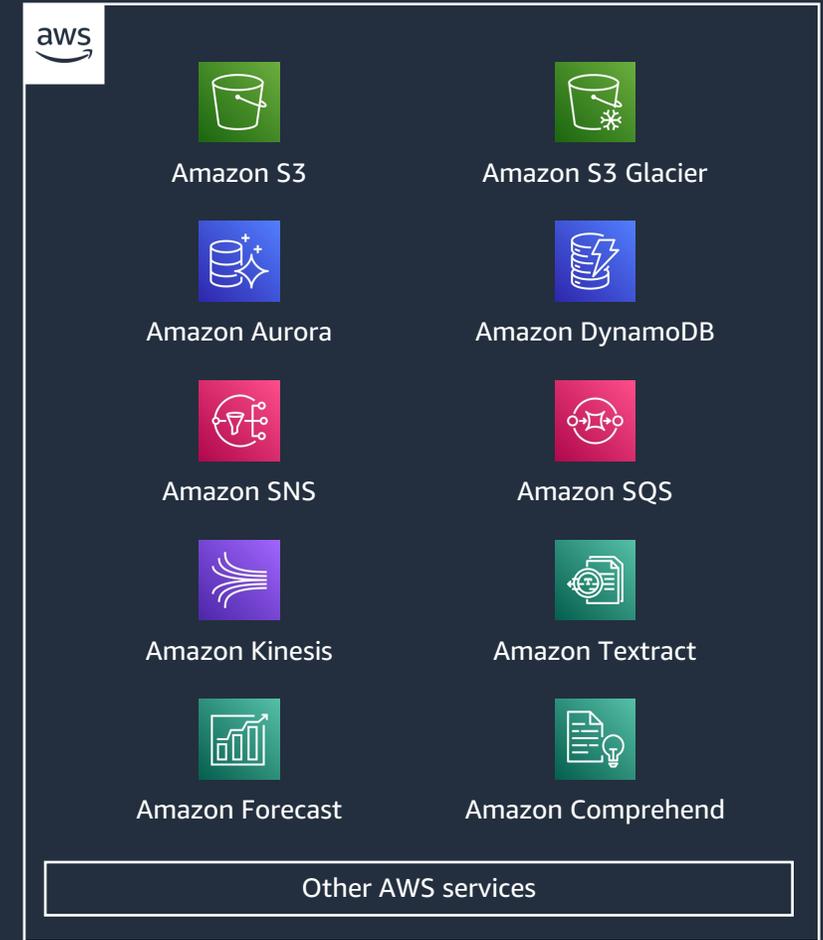
There are 200+ APIs for AWS services.

https://docs.aws.amazon.com/index.html

AWS services

Amazon Simple Storage Service

Amazon DynamoDB

Amazon Textract

APIs – HTTPS, JSON, XML

SDKs

SDK for SAP ABAP

SDK for Python

SDK for JavaScript

Applications and Users

Enterprise Applications

User Applications

Other Applications

HTTPS, XML, JSON

Programming Constructs

High-level architecture

SAP standard modules
- Order Management
- Supply Chain
- Finance
- ...

Custom ABAP Programs

AWS SDK for SAP ABAP

ABAP Stack

SAP Kernel

Database

Operating System

SAP ABAP based applications
(SAP S/4HANA, ECC, CRM etc.)

Rest APIs

aws

Amazon S3

Amazon S3 Glacier

Amazon Aurora

Amazon DynamoDB

Amazon SNS

Amazon SQS

Amazon Kinesis

Amazon Textract

Amazon Forecast

Amazon Comprehend

Other AWS services

Unlock your innovation potential with AWS services

MORE SERVICES AND MORE FUNCTIONALITY WITHIN THOSE SERVICES

200+

AWS services in analytics, IoT, AI/ML, and more drives new innovation and business value

Amazon SageMaker

Amazon Polly

Amazon Transcribe

Amazon AppFlow

AWS IoT Analytics

Amazon Forecast

AWS DeepLens

Amazon Translate

AWS AppSync

AWS IoT Greengrass

Amazon Rekognition

Amazon Lex

AWS Lambda

Amazon API Gateway

AWS IoT TwinMaker

Amazon Lookout for Equipment

Amazon Lookout for Vision

AWS Wavelength

Amazon Kinesis

AWS IoT Core

Amazon Personalize

Amazon Textract

Amazon Location Service

Amazon EMR

AWS Ground Station

What will you build with AWS SDK for SAP ABAP?

Amazon S3

Use Amazon S3 buckets to exchange files with external systems and partners

Amazon Translate

Translate work orders for a bilingual team

Amazon Location Service

Clean up addresses, calculate shortest route between locations

Amazon Textract

Extract data from scanned invoices using Amazon Textract
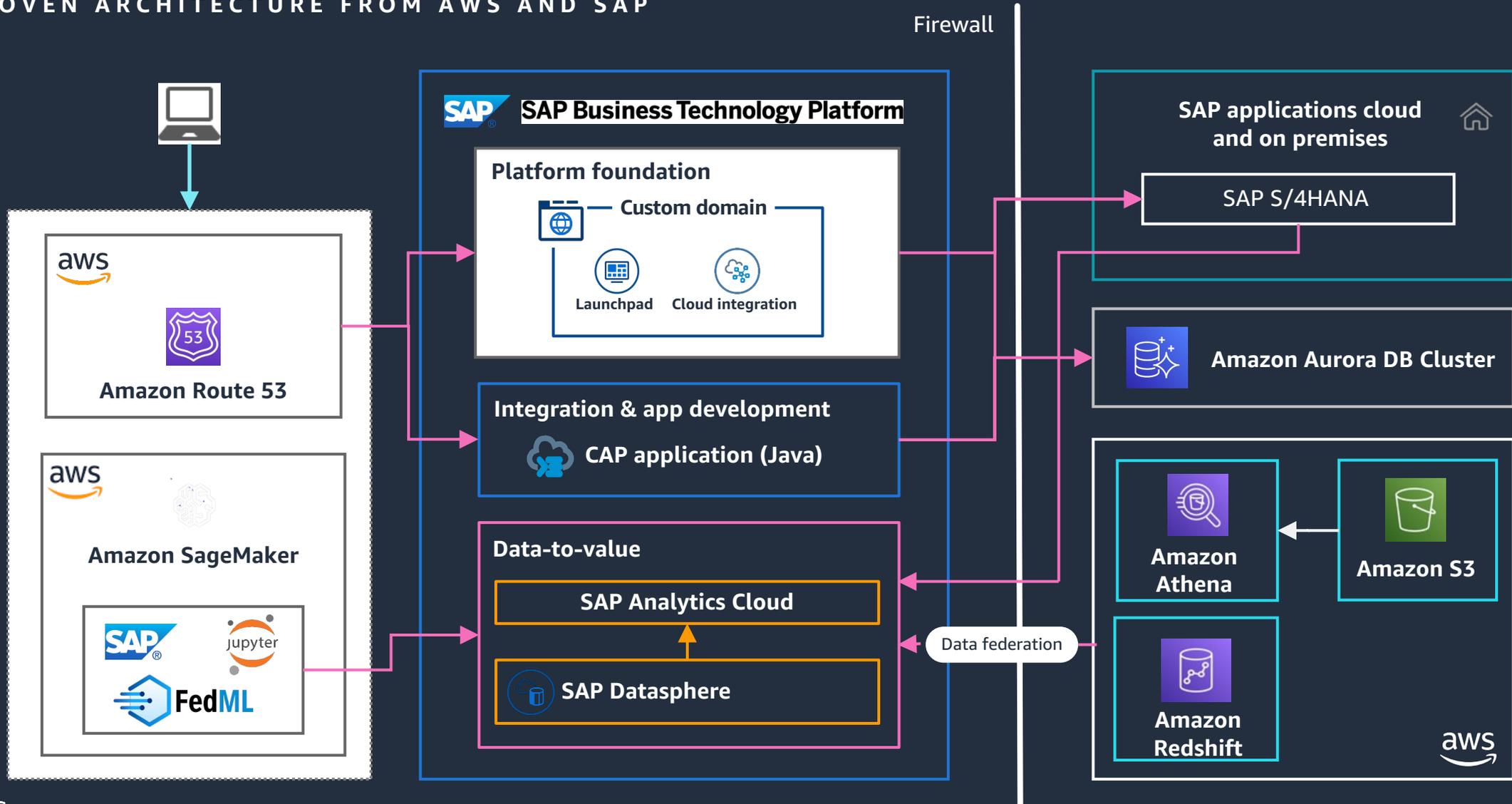
Amazon Rekognition

Identify and classify images using Amazon Rekognition and Amazon SageMaker

AWS and SAP approved joint reference architecture

PROVEN ARCHITECTURE FROM AWS AND SAP

Firewall

SAP SAP Business Technology Platform

Platform foundation

Custom domain

Launchpad   Cloud integration

Integration & app development

CAP application (Java)

Data-to-value

SAP Analytics Cloud

SAP Datasphere

aws Amazon Route 53

aws Amazon SageMaker

SAP · jupyter · FedML

SAP applications cloud and on premises

SAP S/4HANA

Amazon Aurora DB Cluster

Amazon Athena

Amazon S3

Amazon Redshift

Data federation

aws

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Developer experience

Developer experience

```abap
TRY.

  DATA(lo_file) = lo_s3->getobject(

  iv_bucket = iv_bucket_name

  iv_key = iv_object_key

  ).

  parse_excel( lo_file->get_body( ) ).

  CATCH /AWS1/CX_S3_INVALIDOBJECTSTATE INTO DATA(lo_ex).
  " need to pull from glacier first

  CATCH /AWS1/CX_S3_NOSUCHKEY INTO DATA(lo_ex2).
  " handle file not found

ENDTRY.
```

Pull a file from Amazon S3 with a simple ABAP method call

Process the data using your own business logic

Handle errors in an idiomatic way, with ABAP exceptions

Team roles and responsibilities

IAM Admin

> Create IAM Roles granting SAP access to AWS APIs

Basis Admin

> Import SDK Transports

> Technical Prerequisites

SAP Security

> Map SDK Profiles to IAM Roles

> Authorize SDK profiles in PFCG Roles

> Assign PFCG Roles to Users

SAP ABAP Dev

> Enhance business processes using ABAP and the SDK

AWS SDK for SAP ABAP

> ABAP Code invokes SDK Profiles

> SAP Security checks (PFCG Roles)

> AWS security checks (IAM Roles)

> AWS service invocation

> SAP Trace Files

> AWS telemetry

Syntax accelerates SAP transformation with 'game-changer' AWS SDK for SAP ABAP

> "As a CTO, I am thrilled with the potential the AWS SDK for SAP ABAP has to transform the SAP industry. It is not just a technological breakthrough but a game-changer that immensely benefits our SAP customers. Now, businesses can quickly streamline their operations and enrich their business processes by leveraging the world's best-class cloud services."

Marcelo Tamassia
Chief Technology Officer, Syntax

Innovating with AWS SDK for SAP ABAP

Customers and partners are innovating with AWS and SAP

TRANSFORMATIVE INNOVATION

Intelligent Document Processing

with Amazon Textract, Amazon Translate, and Amazon SNS

Secure File Transfer

with AWS Transfer Family and Amazon S3

Language Translation

with Amazon Translate

Address Correction

with Amazon Location Service

Event-driven Architecture

with Amazon Simple Queue Service and Amazon Lambda

Intelligent document processing

Intelligent document processing

Document processing is essential to business, serving as a primary tool in many mission-critical processes in industries as varied as Finance, Insurance, Medical, Legal, and more.

Benefits of intelligent, automated processing:

- Faster processing time

- Improved accuracy

- Lowered personnel costs

Document processing can be challenging and error prone

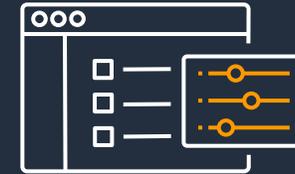## EXISTING APPROACHES FAIL TO MEET REQUIREMENTS OF LEADING BUSINESSES

Manual Processing

Manual approach is **expensive, error-prone, and time consuming.** Limits business velocity, delays payments and resolutions.

Optical Character Recognition

Applicable to **simple documents only**. Often **error prone** and returns unstructured text.

Rules and template-based extraction

Limited by OCR accuracy and requires development and management overhead. **Rigid templates can be brittle**, breaking at minor changes.

Intelligent document processing

Working within your SAP environment, AWS services can help you gain additional intelligence from your documents and automate time-consuming document processing.

AWS advantage:

- Integrate Amazon Textract, Amazon Translate, and Amazon Simple Notification Service (SNS) into SAP processes using familiar ABAP code

- Extract key insights and translate as needed with high accuracy from virtually any document.

- Notify users with automated alerts

- Full Amazon Intelligent Document Processing solution delivers 73% ROI[1]
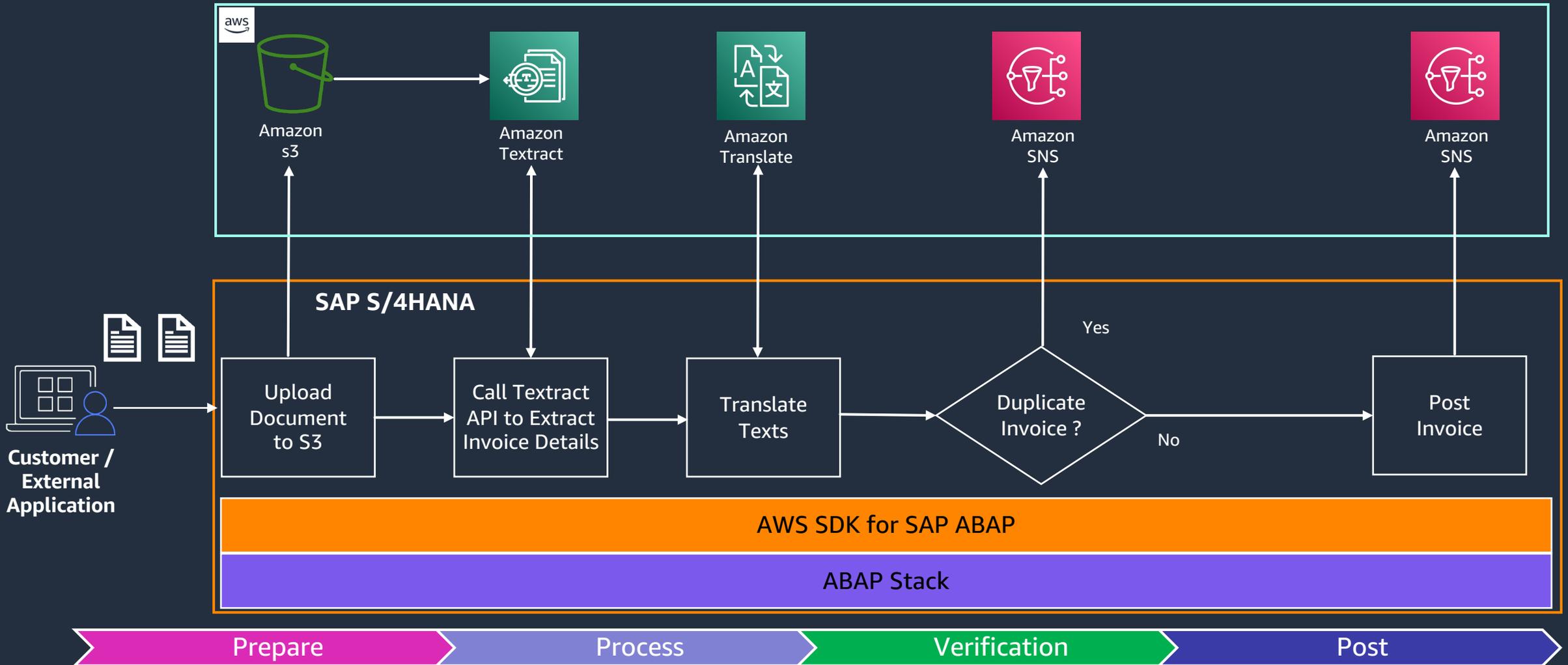
Amazon Textract

Amazon Translate

Amazon Simple Notification Service

1: https://pages.awscloud.com/GLOBAL-ln-GC-400-ML-TEI-Forrester-Report-Learn.html

Intelligent document processing using Amazon Textract

SAP S/4HANA

Amazon s3

Amazon Textract

Amazon Translate

Amazon SNS

Amazon SNS

Customer / External Application

Upload Document to S3

Call Textract API to Extract Invoice Details

Translate Texts

Duplicate Invoice ?

Yes

No

Post Invoice

AWS SDK for SAP ABAP

ABAP Stack

Prepare | Process | Verification | Post

Automated Invoice Processing ✕ | S3 | Global ✕ | Simple Notification Service | us ✕ | +

https://s3.console.aws.amazon.com/s3/home?region=us-east-1#

Working with enviro... | 2022 Gartner® Magi... | New Tab | 2C Floorplan - YouT...

ramadokr+sandbox@amazon.com - 796275742994 / Admin (Not Production Account)

aws   Services   🔍 sns ✕   IsenLink   Global ▼   Admin/ramadokr-Isengard @ 7962-7574-2994 ▼

Amazon S3   ✕

Amazon S3

▶ **Account snapshot**   View Storage Lens dashboard
Last updated: Jun 20, 2023 by Storage Lens. Metrics are generated every 24 hours. Learn more ⧉

Buckets

Access Points

Object Lambda Access Points

Multi-Region Access Points   **Buckets** (90)   Info   ⟳   📋 Copy ARN   Empty   Delete   **Create bucket**

Batch Operations   Buckets are containers for data stored in S3. Learn more ⧉

IAM Access Analyzer for S3   🔍 Find buckets by name   ‹ 1 ›   ⚙

Block Public Access settings for | Name ▲ | AWS Region ▽ | Access ▽ | Creation date ▽ |
this account |---|---|---|---|
                                   | ○ abap-sdk-latest | US East (N. Virginia) us-east-1 | Bucket and objects not public | February 8, 2023, 17:52:02 (UTC-06:00) |
▼ Storage Lens | ○ adbapsdkdemomarch9 | US East (N. Virginia) us-east-1 | Bucket and objects not public | March 9, 2023, 22:05:48 (UTC-06:00) |
                                   | ○ appflow-demo-orders | US East (N. Virginia) us-east-1 | Bucket and objects not public | July 13, 2022, 15:02:48 (UTC-05:00) |
Dashboards | ○ appflow-incremental-orders | US East (N. Virginia) us-east-1 | Bucket and objects not public | October 4, 2021, 13:08:25 (UTC-05:00) |
AWS Organizations settings | ○ appflow-sap-demo | US East (N. Virginia) us-east-1 | Bucket and objects not public | September 7, 2022, 08:25:37 (UTC-05:00) |
                                   | ○ appflow-sap-orders | US West (Oregon) us-west-2 | Bucket and objects not public | June 25, 2021, 13:33:47 (UTC-05:00) |
                                   | ○ appflow-test-odp | US West (Oregon) us-west-2 | Bucket and objects not public | July 14, 2022, 19:01:48 (UTC-05:00) |
Feature spotlight 3 | ○ appflow-test-orders | US West (Oregon) us-west-2 | Bucket and objects not public | March 2, 2022, 14:59:54 (UTC-06:00) |
                                   | ○ athena-results-sap | US East (N. Virginia) us-east-1 | Bucket and objects not public | February 23, 2022, 01:03:46 (UTC-06:00) |
▶ AWS Marketplace for S3 | ○ aws-athena-query-results-us-east-1-796275742994 | US East (N. Virginia) us-east-1 | Bucket and objects not public | February 25, 2022, 17:52:26 (UTC-06:00) |
                                   | ○ aws-athena-query-results-us-west-2-796275742994 | US West (Oregon) us-west-2 | Bucket and objects not public | February 25, 2022, 17:42:25 (UTC-06:00) |
                                   | ○ aws-demo-rajendra | US East (N. Virginia) us-east-1 | Bucket and objects not public | February 7, 2023, 17:45:53 (UTC-06:00) |
                                   | ○ aws-glue-assets-796275742994-us-east-1 | US East (N. Virginia) us-east-1 | Bucket and objects not public | February 22, 2022, 18:24:23 (UTC-06:00) |

Getting started

Next steps

[Download](#) the SDK and install it in your sandbox SAP system

Read the [Developer Guide](#) to learn about the capabilities and how to use them.

Develop your own proof of concept

https://aws.amazon.com/sdk-for-sap-abap/

Thank you!

Navaneeth Ramakrishnan

navanram@amazon.com

Appendix

Continuous Improvement

AWS SDK for SAP ABAP supports
200+ services

- Up to daily service updates

  - New service features

  - Service definition bugfixes

- AWS SDK for SAP ABAP Runtime
  Updates

  - Features

  - Bugfixes

  - Packaging improvements

AWS SDK for SAP ABAP

Runtime

- Configuration
- Security
- Trace
- Metadata client

API Modules

- 200+ services
- 300+ APIs

Release Strategy

AWS SDKs commit to non-breaking changes within the same version

- SDKs can have multiple versions:

  - Javascript SDK v1, Javascript SDK v2, Javascript SDK v3

  - Java SDK v1, Java SDK v2

  - **ABAP SDK v1 (namespace `/AWS1/`)**

- Within ABAP SDK v1, minor version updates represent new SDK features

- Daily builds (1.x.y) represent bugfixes and service changes

Release Strategy (Cont'd)

The ABAP SDK Lifecycle:

- **Installation** – import transports

- **Patch** – import latest transports (overwrite)

- **Uninstallation** (new!) – import "deletion" transports

Transports are cumulative:

- To ensure you have the latest Runtime features, API clients, and bugfixes, just import the latest transports