
AWS
re:Invent
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ENT326

How Adobe modernized their billing APIs with SAP on AWS

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Today’s Agenda

- About Adobe
- Our transformation to a SaaS company
- Challenges with our on-premises billing platform
- Implementing SAP Unified Billing System on AWS
- Lessons learned
- Business benefits
- The future of SAP at Adobe

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About Adobe

- 26,000+ employees in 35 countries
- 39 years of revolutionizing industries
- $15.79B FY2021 Revenue
- 70% of our global workspaces are LEED-certified
- 6,444 patents
- ~86M given to community in 2020



Adobe Creative Cloud – unleash Creativity



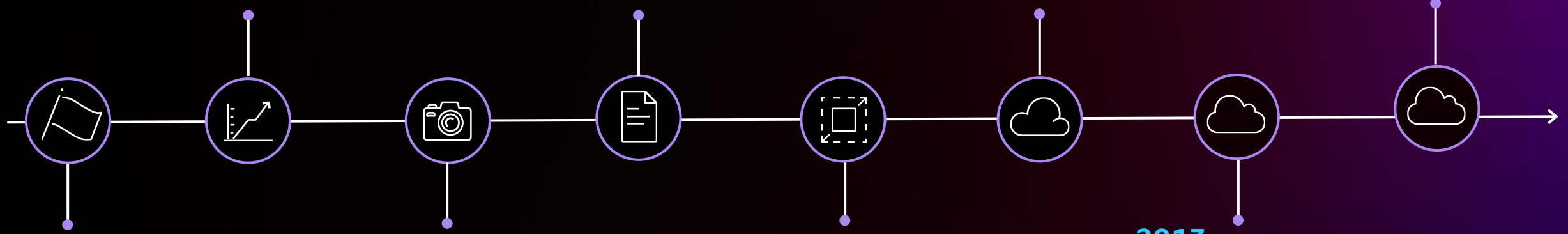
Adobe Document Cloud – accelerating document productivity



Adobe Experience Cloud – powering digital businesses

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Our transformation to a SaaS company



1982
Company is founded

1986
Adobe enters NASDAQ

1990
Release of Adobe Photoshop

1993
Adobe Acrobat and invention of the PDF format

2008
Global recession leads to SaaS transformation

2011
Release of Adobe Creative Cloud and announcement of transition to cloud

2013
Transformation completed with transition to Creative Cloud, Experience Cloud & Document Cloud

2014+
Creative Cloud powers the art and science of creativity. Experience Cloud powers digital experiences. Document Cloud enables digital document workflows.

Transformation goes beyond how customers purchase, it influences how we build, price, and support software

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Challenges with our on-premises billing system



Performance
Shared platform for multiple capabilities, leading to latency and sub-optimal customer experience



Availability
Billing delays during ECC maintenance windows

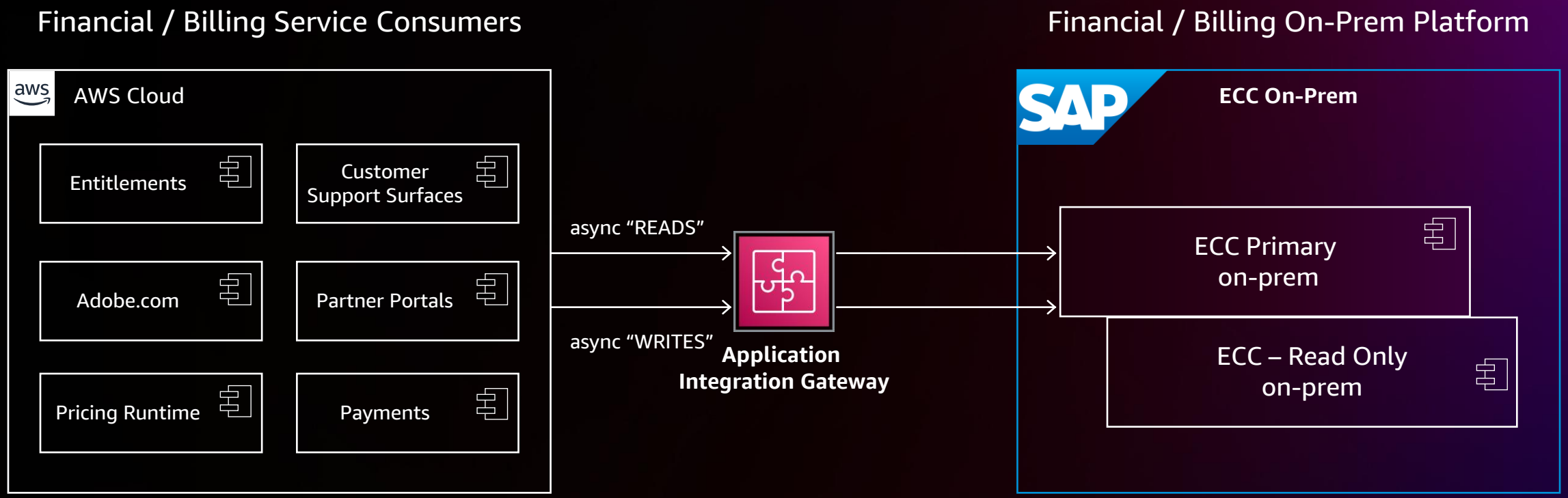


Integration
No direct API access, requiring use of complex middleware

With the ambitious goal to double our user base by 2x, we knew we needed to position ourselves for better scalability and user experience

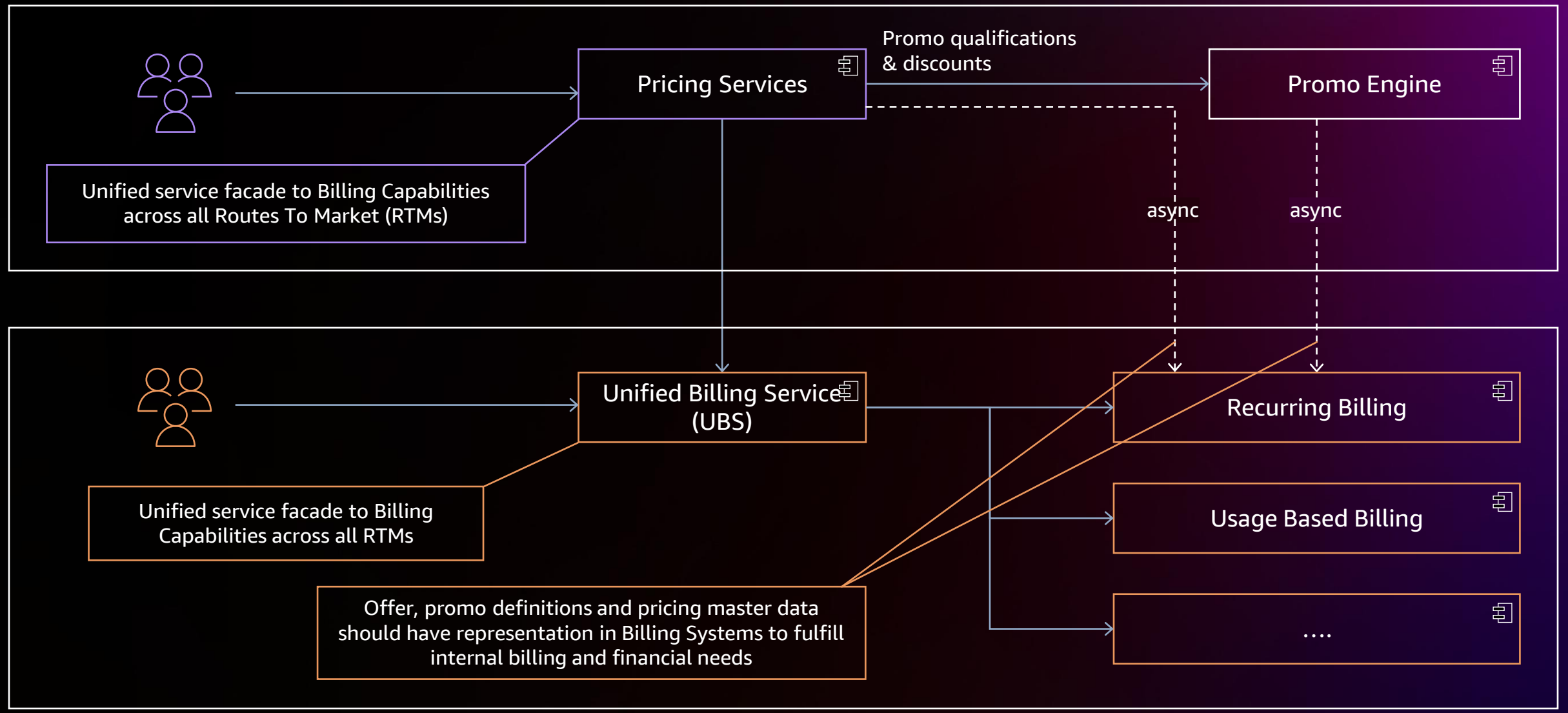
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On-premises – legacy architecture



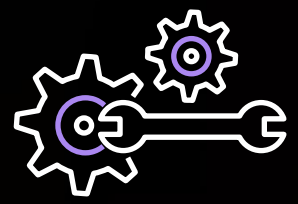
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Target State Billing Process Flow



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Benefits of the target state billing flow



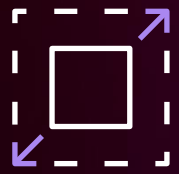
Highly decoupled

No dependencies on other key business functions, simplifying maintenance and upgrades



Normalized data footprint

Only house the data necessary to fulfill Billing Services capability



Reliability and scalability

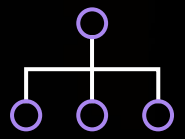
Support our aggressive subscriber growth while maintaining strong customer experience

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Considerations for target billing process

Option 1: Break billing out of the monolith into microservices



Clean separation between pricing and finance domains minimizes dependencies between subsystems

Option 2: Leverage best-in-class billing capabilities from SAP



Billing and finance tightly coupled, no need for reconciliation



Real-time reporting

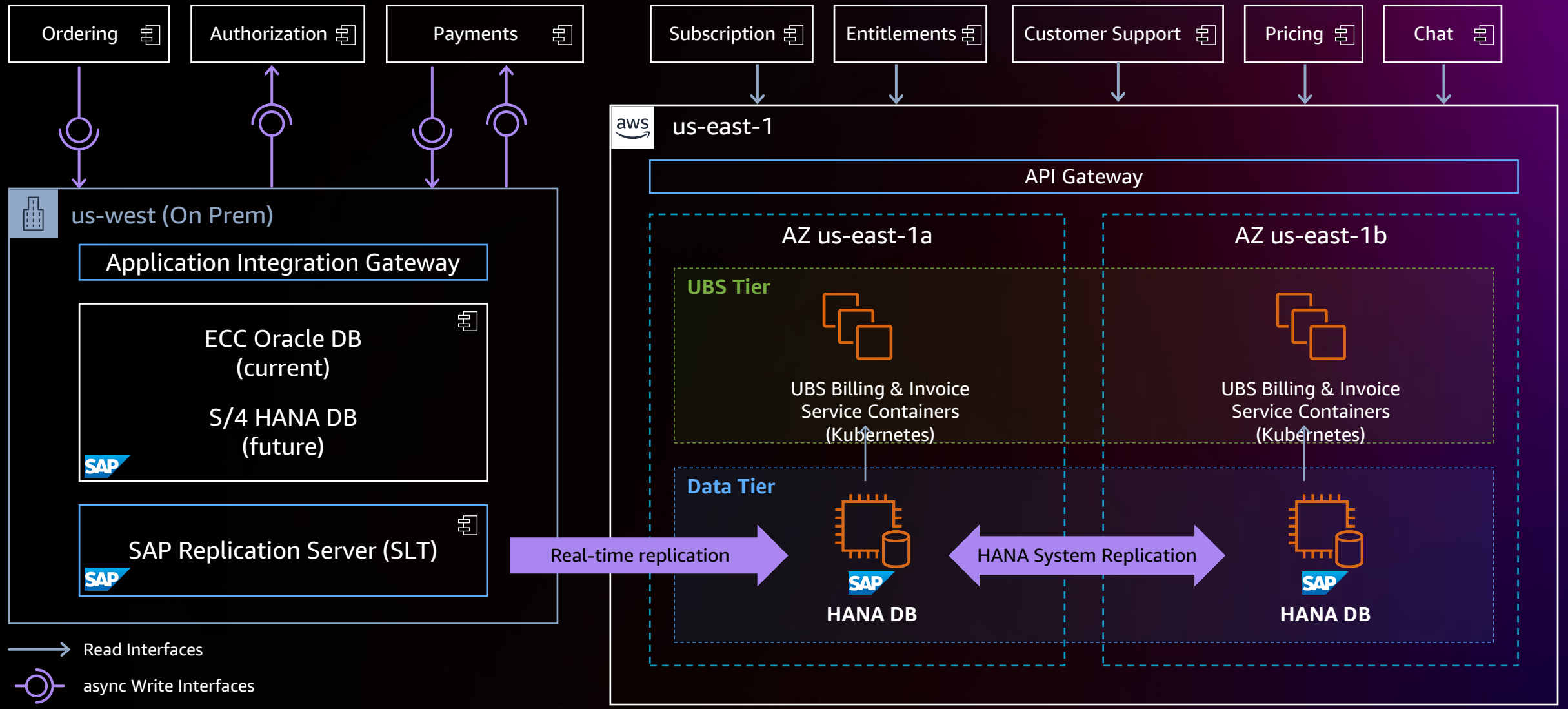


Better end customer experience

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Target Architecture



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Roadmap of billing services to AWS

Q3 2022

UBS v1.0.0

- Platform Development
- DB and Infrastructure
- MVP Feature set
- Automated test library

Billing Contract V1.0.0

Client Onboarding:

- Offer Mapping Service (OMS)
- Pricing Hub
- Promo Service

Q4 2022

Invoice Service v1.1.0

Feature Set:

- Bill History (List) features

Client Onboarding:

- Account Mgmt.

Billing Contract V1.1.0

Feature Set:

- Order List Features
- Search key expansion

Client Onboarding:

- Billing Orchestration

Q1 2023

Invoice Service v1.2.0

Feature Set:

- Invoice Details features
- Search key expansion

Client Onboarding:

- Billing Orchestration service (BOS)
- Customer Support Cloud / Chat
- Admin Console

Billing Contract V1.2.0

Feature Set:

- Billing Summary features
- Pricing Hub data

Client Onboarding:

- Business Platform Integration

Q2 2023

Invoice Service v2.0.0

Ready to start onboarding Enterprise/VIP features

Billing contract V1.3.0

Feature Set:

- PI/GDPR status
- Promo search feature

Client Onboarding:

- Customer Support Service

Q3 2023

Billing Contract V1.4.0

Feature Set:

- Order Details features

Client Onboarding:

- Customer Support
- Entitlements

Q4 2023

Billing Contract v2.0.0

Ready to start onboarding Enterprise/VIP features

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Transition to Target State



People, skills, processes

AWS training, change management, and operating model alignment

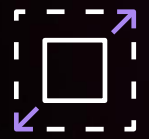


Technical migration

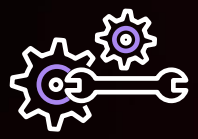
Port data into AWS and provision SAP UBS application without business process disruption

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Business Benefits



Scaling operations without disrupting customer experience



Common data model for microservices eliminates the need to stitch together multiple APIs



Positioning ourselves for future improvements to the billing system without disruption

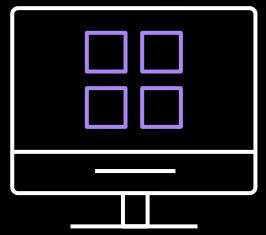


Accelerating our future move to SAP S/4HANA

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Lessons Learned



Don’t be afraid of monolithic applications– they still have their place alongside microservices and containers



Modernizing non-ERP components of your SAP landscape can help position you for a future move to S/4HANA

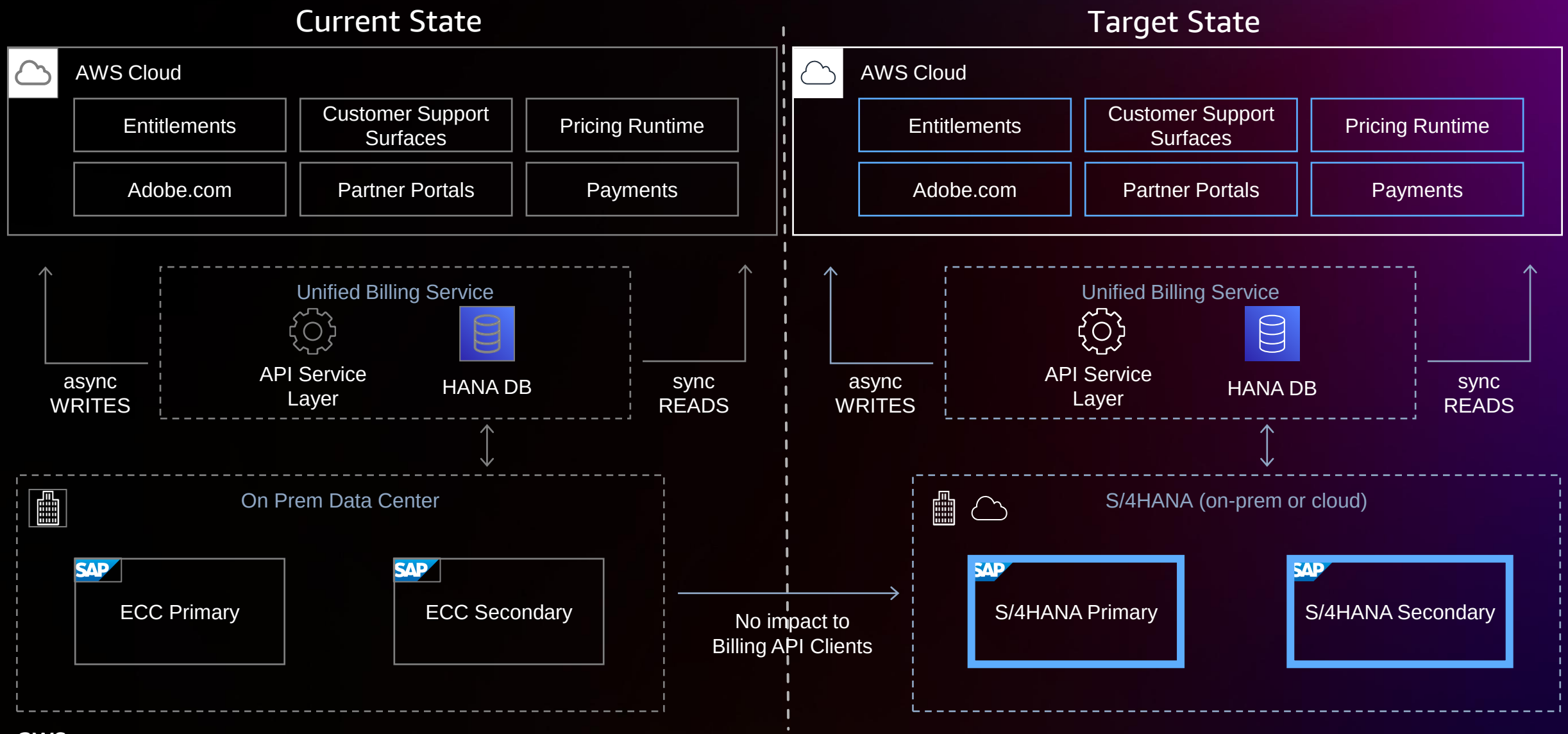


Think carefully about de-composing SAP. Use SAP-delivered services where you can, and build only what you have to

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Preparing for migration to SAP S/4HANA



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The future of SAP at Adobe

- Onboard all billing clients to the UBS platform
- Solve for async write operations in UBS
- Migration from ECC to S/4HANA

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Getting started with SAP on AWS

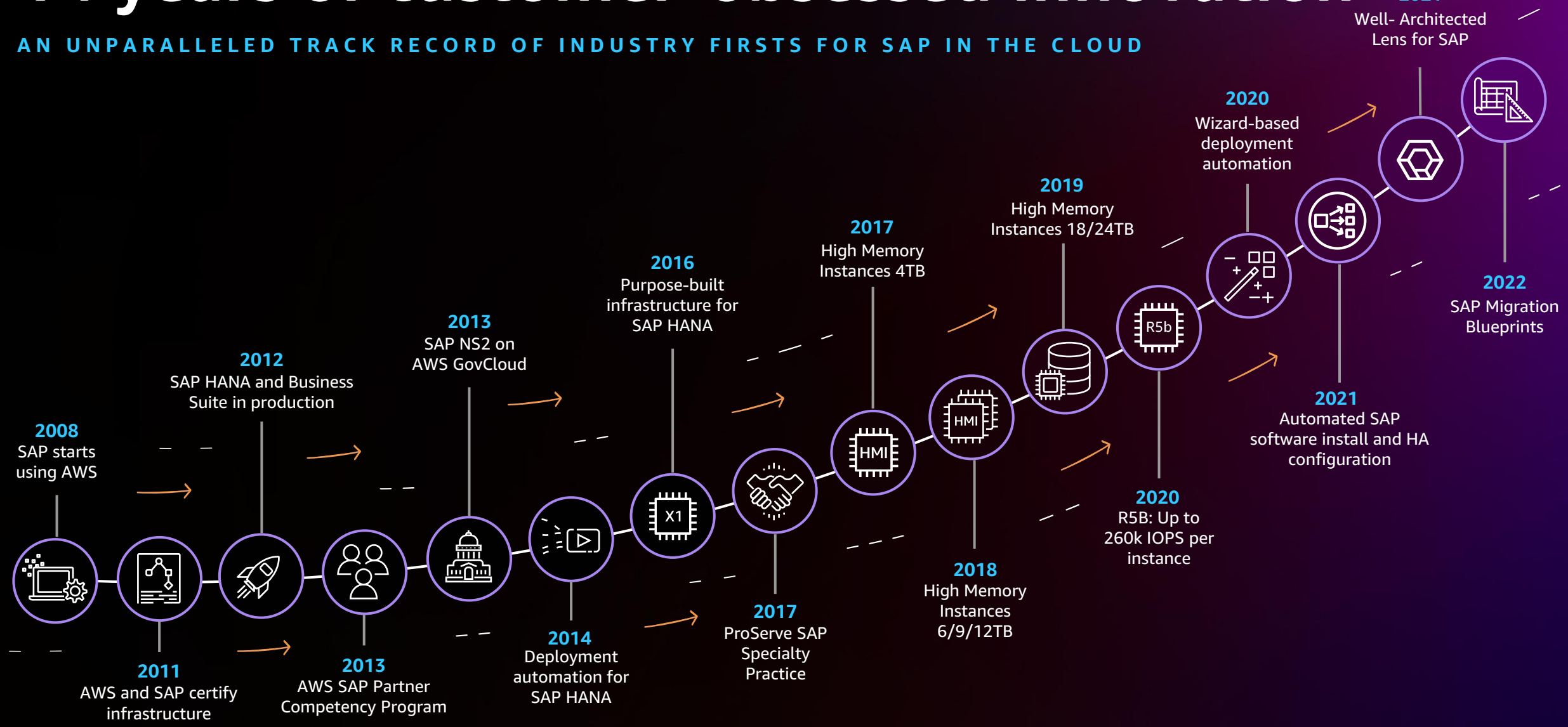
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14 years of customer-obsessed innovation

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



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Thousands of SAP customers trust AWS

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, Newmont, PETRONAS

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

STELLANTIS, TATA MOTORS Connecting Aspirations, DB, KARMA, JAGUAR, BMW GROUP, LAND ROVER

MANUFACTURING & INDUSTRIAL

SIEMENS, 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

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Gartner recognizes **AWS as a Leader** for the 12th straight year

[Magic Quadrant for Cloud Infrastructure and Platform Services]

We believe this report validates AWS's leadership to innovate and set standards for cloud computing. Millions of active customers every month and more than 100,000 Partners from over 150 countries choose AWS to deliver their business goals.

Read the full report to appreciate the details.

Figure 1: Magic Quadrant for Cloud Infrastructure and Platform Services



Gartner, Magic Quadrant for Cloud Infrastructure & Platform Services, Raj Bala, Dennis Smith, Kevin Ji, David Wright, Miguel Angel Borrega, 19 October 2022. Gartner and Magic Quadrant are registered trademarks of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from A WS

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ISG recognizes **AWS as an SAP HANA Infrastructure Services Leader** for the 5th straight year

"AWS has more than a decade of experience in hosting SAP workloads and offers a wide array of choices for customers. It has the most market share and the largest SAP on AWS partner ecosystem in the U.S... AWS offers a robust and secure infrastructure platform for clients to run their most mission-critical SAP workloads."



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Introducing the AWS SDK for SAP ABAP

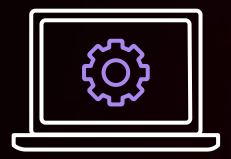


Makes it easy for ABAP developers to extend and transform SAP-based business processes by harnessing the power of AWS services natively using the SAP ABAP language.



Accelerate business process innovation

by giving ABAP developers native access to all 300+ AWS services



Reduce architectural complexity

by eliminating the need to manually create complex integrations between SAP and AWS services



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

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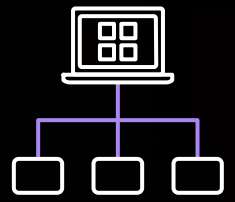
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What's new for SAP on AWS?



Migration

- Migration Hub Orchestrator
- Improvements to Migration Acceleration Program for SAP workloads



Infrastructure

- Intel Ice Lake based EC2 instances (X2i, R6i,M6i and C6i)
- AMD Milan based EC2 instances (R6a, M6a and C6a)
- Virtualized 18TB and 24TB High Memory instances
- Amazon FSx for NetApp ONTAP (FSxN)
- Support for SAP HANA host auto-failover with FSxN
- AWS Backup Service support for SAP HANA



Innovation

- Bi-directional data flows with AppFlow
- AppFlow ODP Support
- AWS SDK for SAP ABAP



Management and Operations

- Launch Wizard improvements
  - Scale deployments
  - Clone deployments
  - Solution Manager
- AWS Systems Manager support for SAP
- Observability for NetWeaver using AppInsights

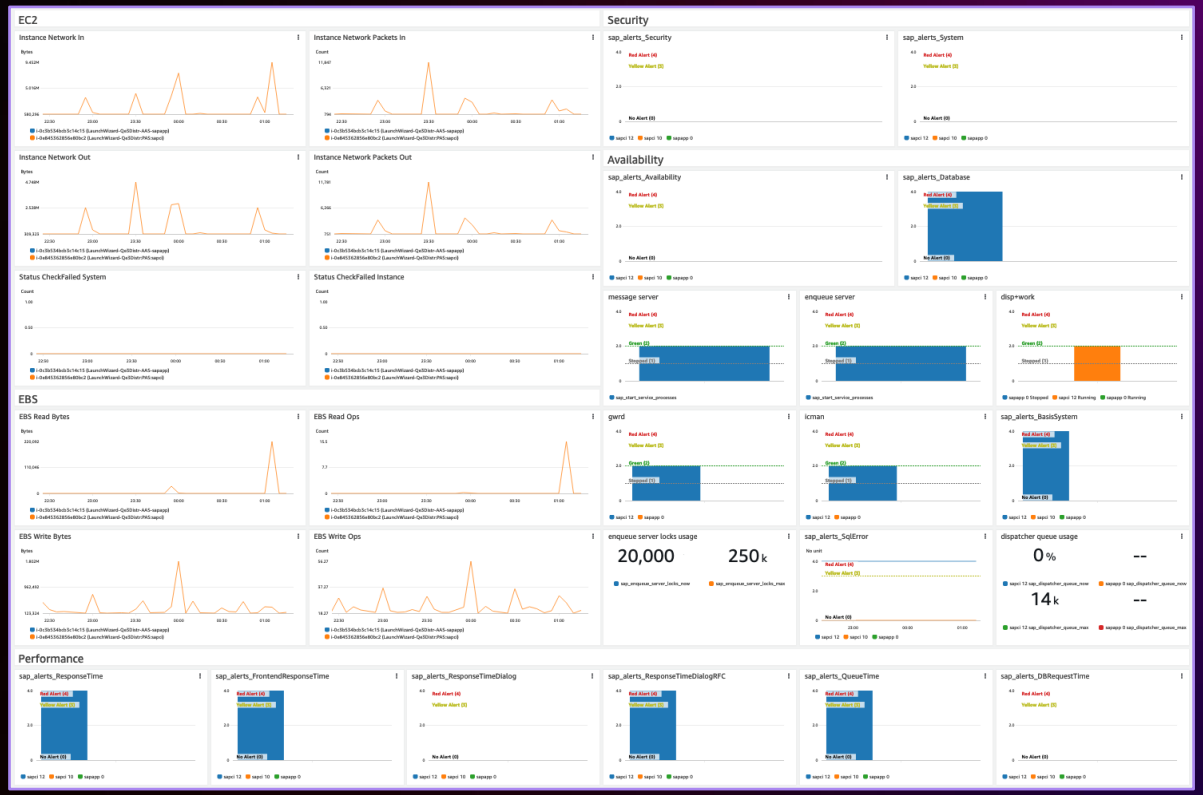
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Cloud Watch Application Insights for SAP NetWeaver & HANA

Enable SAP technical teams with observability across the entire SAP technical stack.

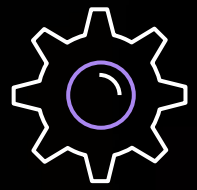
- Automatic dashboards
- Problem detection and notification
- Insights that point to potential root causes
- Automatic setup of monitoring for application resources
- Supports for High Availability landscapes and cluster monitoring
- Uses AI/ML to analyze NetWeaver and HANA system metrics, determine normal baselines, and surface anomalies with minimal user intervention.



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SAP Lens for AWS Well-Architected Framework

CUSTOMER-PROVEN DESIGN PRINCIPLES AND BEST PRACTICES FOR ENSURING SAP WORKLOADS ON AWS ARE WELL-ARCHITECTED ACROSS:



Operational Excellence



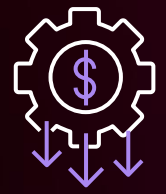
Security



Reliability



Performance Efficiency



Cost Optimization



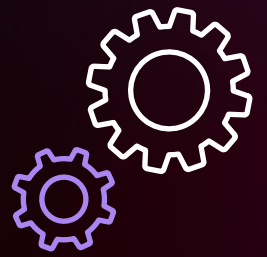
Sustainability

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AWS Well-Architected

Using the AWS Well-Architected Framework to build Adobe's AWS Landing Zone



Optimizing our DR strategy through the Reliability Pillar



Using the SAP Lens

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Next steps to start your journey

Work with us



Complementary discovery workshops



Work with an AWS SAP Competency Partner



Work with AWS Professional Services SAP/ERP Specialty Practice



Explore the AWS Migration Acceleration Program

Explore SAP on AWS

aws.amazon.com/sap

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