SAP Adaptive Server Enterprise and SAP Replication Server Road Map

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About SAP road maps

Companies today are planning their digital journeys – transforming business models, reengineering business processes, and reimagining work.

SAP road maps highlight innovations that may help you plan and implement your digital journey. They span products relevant to lines of business in your industry and explain how our innovations may add value to your business.

In our road maps, you can learn about our innovations along three different timelines:

1. **Recent innovations** for our products that have been launched in the past weeks or months and can already be purchased
2. **Planned innovations** for our products that are intended to be launched in the short term or midterm
3. **Product direction**, providing a long-term perspective on high-level development plans for innovations for our solutions – inspired by your requirements

Following the announcement of end of mainstream maintenance for some products covered in this road map, SAP is offering **guidance** on **recommended products**, which can be evaluated in SAP Transformation Navigator.

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SAP Adaptive Server Enterprise

SAP Adaptive Server Enterprise (SAP ASE)

Product description

SAP ASE is a high-performance relational enterprise database management system that is designed for **mission-critical, transaction-intensive environments** for custom-developed and SAP Business Suite applications with reduced total cost of ownership (TCO).

Mission-critical, transaction-intensive workloads

- Database engine focusing on eXtreme Online Transaction Processing (XOLTP) – leveraging in-memory processing techniques for linear scalability – scale up versus scale out
- #1 SD benchmark 2, 4, 16 socket Linux x86

Trusted legacy for performance and robustness

- Used to manage many of Wall Street's largest trading environments
- Used to manage over 10,000 customer systems running SAP Business Suite

Reduced TCO

- Fewer resources used to achieve same performance as other OLTP DBMS systems with much easier management

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SAP Adaptive Server Enterprise

In the database and data management product portfolio

SAP Adaptive Server, platform edition

Secure deployment flexibility by incorporating SAP ASE, SAP IQ, and SAP Replication Server in one licensing model

Large enterprises

SAP ASE, public cloud edition

Get on-demand, preconfigured public cloud instances of SAP ASE with subscription pricing and licensing in a highly secure environment

Cloud/On-demand

SAP ASE, Edge edition, advanced version

Enable solutions for smaller database deployments and applications with a limitation of 8 cores

Midmarket and ISVs

SAP ASE, express edition

Start building transactional applications on a free, full-use license for development and deployment

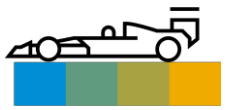
- 50 GB disk
- 4 engines

Startups/Small businesses

SAP ASE evaluation license

Take advantage of a free download for development environments (unlimited with all options available)

Developers/Education



Database MemScale option

Leverages in-memory and HW optimizations to achieve linear scalability for high-concurrency XOLTP workloads

XOLTP

Workload analyzer option

Employs “capture and replay” techniques to allow production workloads to be replayed in dev/test environments to mitigate upgrade risks and enable more-accurate server tuning

TCO

Always-on option

Leverages streaming replication to provide high availability disaster recovery (HADR) clustering to support both high availability and disaster recovery including near-zero-downtime maintenance and major upgrades

High availability

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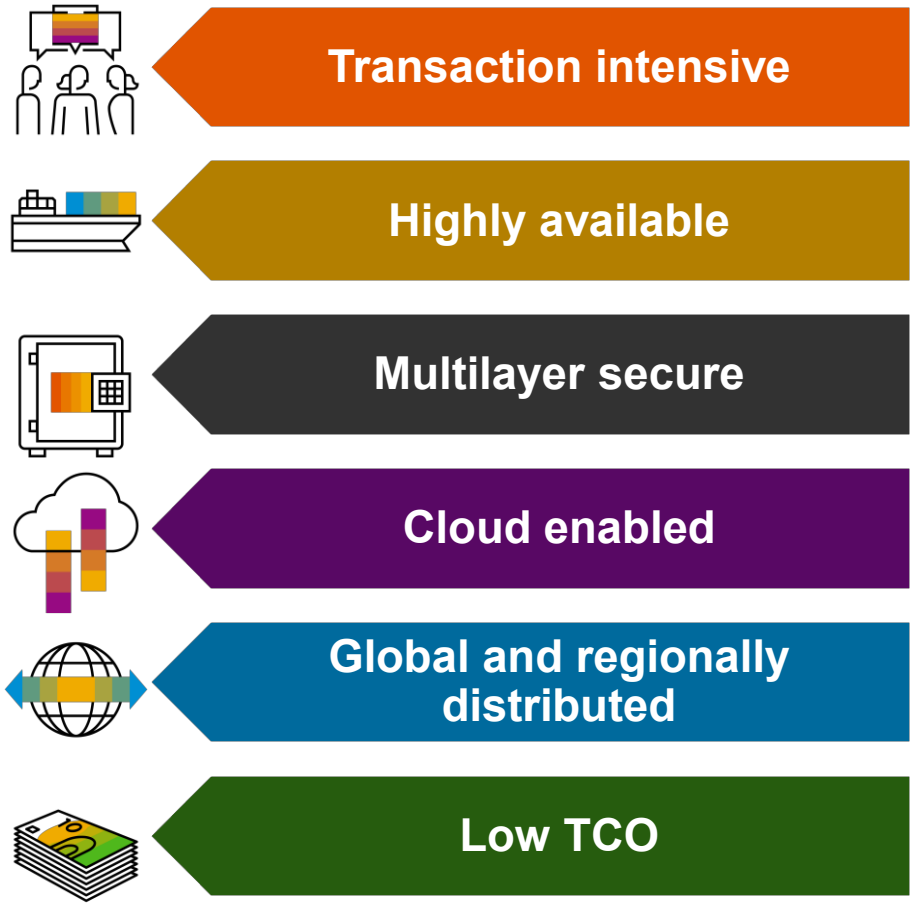
SAP Adaptive Server Enterprise

Product description

Key capabilities

- **XOLTP:** SAP ASE supports tens of thousands of transactions per second through use of in-memory processing techniques to allow vertical scaling on high-density, large-memory systems with high concurrent user access.
- **Availability:** In addition to supporting HADR clustering, SAP ASE provides a number of resiliency and robustness features such as resource governors, logical process and workload management, and virtual partitioning of resources.
- **Security:** SAP ASE supports native full database as well as column encryption along with typical enterprise-class security features such as auditing, role-based access controls, granular permissions and predicated privileges, row-based access controls, network security, and more.
- **Replication**: SAP ASE is integrated with replication capabilities to provide multisite availability and global autonomous operations as well as real-time analytics support.



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SAP Adaptive Server Enterprise

Key technology trends, business impacts, customer needs, and value proposition

Technology trends

- High-density, large-memory computing
- Low TCO, high-performance hardware
- Virtualization and cloud deployments
- High-speed, highly automated processing
- Budget constraints, fiscal consciousness
- High instance counts, rapid deployment

Customer requirements

- XOLTP with multi-TB data sets
- Very high concurrency (10,000s–100,000s)
- Cloud-enabled, self-provisioned
- Highly secure (cloud, off premise)
- Highly available
- Ease of administration

Business impacts

- Extreme transaction volumes
- Low-latency transactions
- Long-term data retention
- Increased legislative requirements
- Increased security threats and risks
- Reduced IT staff and infrastructure

SAP ASE value propositions

- XOLTP capable, cloud enabled
- Vertical scalability for best TCO
- In-memory scalability without app rewrite
- Integrated replication for global autonomy and real-time analytics
- Government-certified security (encryption and such)
- Hardware- and software-independent HADR with multisite availability

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SAP Adaptive Server Enterprise

Product or portfolio areas of future investment

Vision:

- Market-leading disk-based XOLTP DBMS
- High-performance/low-TCO DBMS for SAP and custom applications

Recent areas of focus:

- Core XOLTP functionality
- Cloud/cloud enablement
- Data center operations (high availability, security, and more)

Next big steps to reach our vision:

- Providing enterprise-class cloud enablement capabilities
- Common SAP tooling/framework adoption

Areas of investment and path forward:

- Cloud/cloud enablement
- Continued support for SAP Business Suite development

BYOL model

Microsoft Azure · Google Cloud Platform · Alibaba Cloud

Move licenses to Any 3rd Party Cloud

amazon web services™ · IBM Bluemix™ · HUAWEI

- Customers on Sybase contracts must purchase the ***Sybase Public Cloud Right***
- Customers on SAP contracts are ***Allowed***

On-demand model

awsmarketplace

Subscription Pricing Options

SAP® Cloud Platform

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SAP Adaptive Server Enterprise

Major product trends or direction update

SAP is committed to the long-term enhancement, maintenance, and support of SAP ASE, SAP Replication Server, and SAP IQ software.

SAP plans the following:

- Increased frequency of SAP ASE 16.0 patch releases (PLs) for SAP ASE and SAP Replication Server
- SAP ASE 16.0 / SAP Replication Server 16.0 SP04 release planned for Q4 2020
- Investment in new managed cloud services for SAP ASE, SAP Replication Server, and SAP IQ as part of SAP HANA Cloud

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Upcoming short-term and midterm innovations

Cloud

- Continue development and evolution of cloud deployment functionality and cloud services
- On-premise → Cloud migrations/hybrid development and deployment
  - Database migration tool
  - On-premise HADR with cloud DR
  - On-premise workload capture/cloud playback

SAP ASE 16 options (MemScale, HADR, workload analyzer)

- Ease of use
- Feature completion (based on gaps found by real-world customers)
- Cookbooks and best practices/internal papers

Core SAP ASE

- Query processing (QP) enhancements based on customer issues
  - Not just bug fixes but minor enhancements that might reduce problems such as controlling QP proc cache usage, and more

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SAP Adaptive Server Enterprise

Product road map overview – Operations and security, general cloud, and XOLTP

Recent innovations

Data center operations and security

- QP enhancements and diagnostics
  - Print process plan from cache versus spid
- Secure password store
- Secure key storage (HSM for root key)
  - Windows, Linux, and HPUX
- SAP Business Suite
  - Focused Run for SAP Solution Manager with SAP ASE monitoring
- QP enhancements and diagnostics
  - Restriction of IN() list query lengths
- RHEL 8/SuSE 15 certification

Cloud enablement

- Cloud certifications: Google, Huawei, and Alibaba
- AWS subscription service (phase 1)

XOLTP

- Enhancements to IMRS and MemScale options
  - Configurable ILM for cache warming and scan rows
  - Table precaching and cache warming

Current release: SAP ASE 16 SP03 PL07

Planned innovations[1]

Data center operations and security

- QP enhancements and diagnostics
  - Local index support for constraints in partitioned tables
- Ability to keep up with the changing OS landscape, language drivers, and APIs

Cloud enablement

(See always-on road map, next slide)

Product direction[1]

Data center operations and security

- QP enhancements and diagnostics
  - Procedure cache as the resource limit for QP (may be earlier)
  - Increased spin-lock ratios on statement cache, and the like
- Enablement of secure key storage
  - AIX and Solaris
- SAP Business Suite
  - Technical monitoring cockpit (TMC) for SAP ASE administration

Cloud enablement

- SAP ASE as a managed service in SAP HANA Cloud
- Data migration tool
- On-premise capture and cloud playback with the workload analyzer

XOLTP

- Ease of use and feature completion
  - Customer feedback items
- Connection pooling drivers for Perl and Python

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SAP Adaptive Server Enterprise

Product road map overview – “Always-on” (HADR) road map

Recent innovations

Always-on cloud enablement

- Core cloud enablement
- SSL connections for all components
- Always-on monitoring for managed cloud from SAP

SAP Business Suite with SAP ASE, database always-on option

- DR (third node) with always-on option
- SAP Business Suite support for SSL

Custom (nonsuite) solution with always-on option

- Simplified extended standby down primary rep-agent reconfiguration for external replication
- Statement replication (SQLDML within HADR)
- Table exclusion within HADR

Core and shared enhancements with SRS

- Smart memory control
- Increased parallelism

Planned innovations[1]

Always-on option (all environments)

- Ease of use and completion from customer feedback
- Faster fail-over and fail-back procedures in metro cluster

Always-on cloud enablement

- Always-on administration for managed cloud from SAP

Custom (nonsuite) with the always-on option

- XA transaction fail-over procedure

Product direction[1]

Always-on option (all environments)

- Ease of use and completion from customer feedback

Always-on cloud enablement

- End-to-end security enhancements such as queue encryption
- On-premise HA with cloud DR

Custom (nonsuite) with the always-on option

- Read-only (HADR mode) database support
- Connection pooling Perl and Python drivers with fail-over support

Core and shared enhancements with SRS

- Cross-endian support for SRS in CI mode

Current release: SAP ASE 16 SP03 PL07

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