September 2024

SAP Migration on AWS powered by Intel® Xeon® Processors

The business benefits of migrating SAP to AWS powered by Intel technology

Contents

Key Takeaways

Cloud Accelerates SAP Business Transformation

Businesses are migrating their SAP workloads to the cloud to improve scalability, performance, and cost efficiency, and to accelerate insights and innovation.

AWS and Intel continue to provide state of the art instances, **optimized for SAP landscapes.**
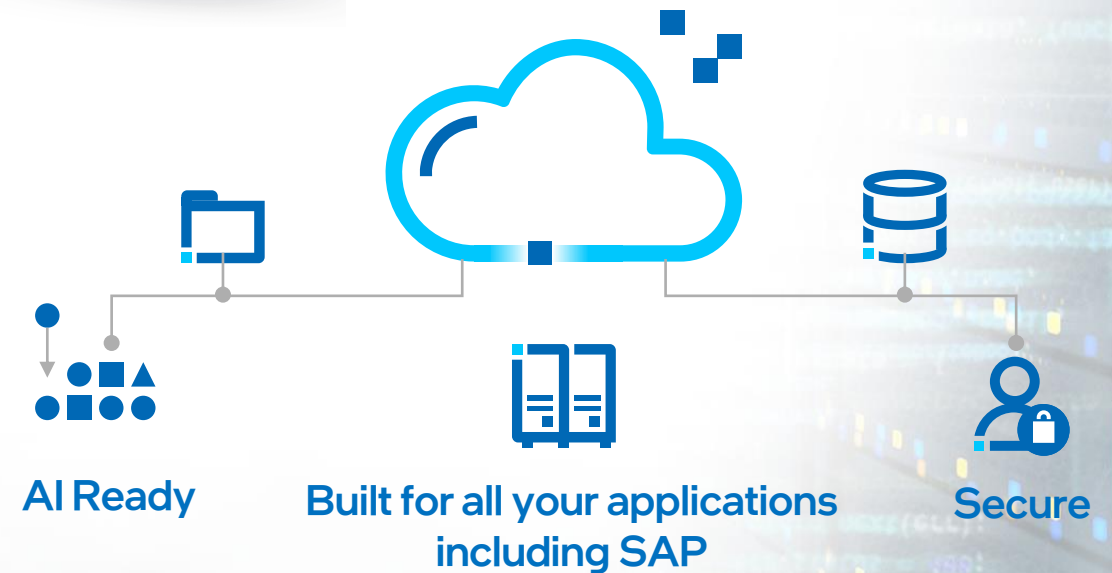
18+ years of collaborating and innovation with AWS

Over 475 Amazon EC2 instances are powered by Intel processors[2]

Business Opportunity

- **99 of world's 100** largest companies are SAP customers[1]
- SAP customers generate **87% of total global commerce**[1]

AI Ready

Built for all your applications including SAP

Secure

[1]"SAP Corporate Fact Sheet." April 22, 2024.
[2] Cloud Computing: Why You Should be Looking Under The Hood

Key Takeaways

Meet mission-critical business needs with AWS instances on 4th Gen Intel® Xeon® processors*

U7i, M7i and **R7i** powered by **4th Gen Intel® Xeon® processors** provide the opportunity to **optimize your SAP landscape**

U7i Instance
U7i delivers the **best compute price performance** for large in-memory workloads

>135% better compute performance
Compared to previous generation[2]

M7i Instance
M7i is best suited for **SAP Application Tier** and **non-Production Tier**

Up to 36%
More SAPS performance
In a single instance Compared to M6i (previous generation)[1]

R7i Instance
R7i is suited for SAP HANA and allows a consolidation thorugh scale-up

29%
More SAPS/$*
Compared to R6i (previous generation)[1]

CALL TO ACTION
Modernize your SAP landscape onto S / 4HANA with the agility, insights and innovation from running it on AWS, powered by Intel® Xeon® processors

* COMING SOON: 5th Gen Xeon® optimized AWS instances

Current Market Landscape

5 Cloud Predictions and Opportunities for 2024

Cloud computing is set for a transformative year. Navigate trends, future decisions, and customer conversations with these top cloud predictions.

1

Security, cloud and AI will be top focus areas in 2024

In a recent Intel survey, tech executives, developers, and architects selected their top priorities for 2024.

27%[1]	Meet security requirements
27%[1]	Adopt cloud services and solutions
22%[1]	Adapt to new technology
17%[1]	Adopt artificial intelligence (AI) / machine learning (ML)
11%[1]	Improve efficiency and performance

2

Decision-makers will increasingly take a "cloud first" approach.

Enterprises are investing in cloud technology to pursue digital transformation and AI opportunities and overwhelmingly prefer cloud solutions when making new purchases.[2]

Investment in public cloud services is soaring

(US $1.1 trillion by 2027) and is notably higher than on-premises data center systems spending (US $275 billion).[2]

SaaS and cloud services are the top choices

For new application workloads, growing from 77% in 2022 to 91% in 2023.[3]

3

Enterprises will embrace a mix of workload locations

Organizations are staying flexible with their infrastructure and aren't afraid to distribute workloads.

Decision makers report that workloads are typically distributed by function:

89% choose cloud for **email, collaboration, and content**[1]

71% choose on-premises or public cloud for **security and confidential computing**[1]

12% choose edge or remote locations for **application development and deployment**[1]

In the last year, 17% of organizations moved at least one workload, service or application back on-premises from cloud, citing:

62%	**42%**	**35%**
Cost savings	Latency	Security Concerns

1. Respondents are data scientists and AI professionals. Source: https://cnvrg.io/ml-insider-results-2023/
2. "Gartner Says Cloud Will Become a Business Necessity by 2028," Gartner, November 29, 2023, gartner.com/en/newsroom/press-releases/2023-11-29-gartner-says-cloud-will-become-a-business-necessity-by-2...
3. BCSE: I&A 2016-23 data.

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5 Cloud Predictions and Opportunities for 2024

Cloud computing is set for a transformative year. Navigate trends, future decisions, and customer conversations with these top cloud predictions.

4

AI and ML investment will drive new business opportunities

AI and ML continue to gain attention with signs pointing to fast growth of this segment.

More than 70% of CSPs and enterprises predict that **AI/ML will gain importance** for their companies in the next 3-5 years.[1]

Markets with potential for **high AI/ML platform spend** include banking (US $15 Billion), professional services (US $12 Billion), and retail (US 8 Billion).[1]

Cloud solution architects are especially interested in **generative AI**, with 97% already using in in some capacity and 61% interested in gaining certifications.[1]

5

Edge as a Service is the future

Edge as a Service – processing, analyzing, and storing data closer to where it's generated – is gaining increased interest among developers.

76% of developers are already using or planning to use Edge as a Service offerings in the next 12 to 18 months.[1]

Top drivers for adopting Edge as a Service include privacy and security requirements or concerns (55%), regulatory requirements (50%), and resilience to network faults(47%).[1]

81% of Edge as a Service offerings are preferred through public and cloud providers like Amazon Web Services (AWS) Azure, and Google.[1]

1. Respondents are data scientists and AI professionals. Source: https://cnvrg.io/ml-insider-results-2023/

Cloud Accelerates SAP Business Transformation

Innovate, **integrate**, **orchestrate**, and **manage** across your **SAP Cloud Infrastructure**, with **Intel technology**

- Intel-based cloud instances are available across AWS instances. RISE with SAP is standardized on Intel® Xeon® processors

- Meet your SAP landscape's needs with a range of powerful SAP-certified, Intel-based instances in the cloud

- Move data to, from, and between your servers with minimal latency and zero cost

- Get the flexibility, speed, and agility to innovate without jeopardizing security

Today's clouds are powered by Intel

Through co-engineering and business relationships with top CSPs, Intel has delivered five generations of custom silicon built for cloud scale.[1]

AI ready

Accelerates innovation with your data, all of it, creating new insights with AI

Built for all your applications including SAP

Intel architecture guides your cloud journey, allowing you to modernize and extend existing applications and build new cloud native apps

Secure

The cloud, powered by Intel, is a secure and trusted foundation for computing

Intel - SAP - AWS
A Winning Combination

A Winning Combination

Proven Leadership & Certified Scalability

AWS is an Early Adopter of Next Gen Intel Technologies

Intel® Platforms are Tuned and Certified for SAP Workloads on AWS

- ✓ 18+ year engineering partnership
- ✓ Collaboration with AWS and its partners on Digital Transformation
- ✓ Shared customer passion
- ✓ High performance + low costs
- ✓ World class supply chain

Andy Jassy – CEO, Amazon

"Intel is a very deep partner of AWS and will be for a long time. That's not changing."

Pat Gelsinger – CEO, Intel

"Intel recently agreed to expand its partnership with AWS to include the co-development of multi-generational data center solutions optimized for AWS infrastructure, and Intel as a strategic customer for internal workloads, including EDA. Intel expects these custom Intel® Xeon® solutions will bring greater levels of differentiation and a durable TCO advantage to AWS and its customers, including Intel."

Why Intel and SAP in the Cloud?

Certified SAP Instances running Intel® Technology designed for performance and/or TCO

Enable a single source of truth

Grow business value from faster insights

With massive memory capacity, enable near-real-time analysis at the source without having to make multiple copies of data. Get closer to your goal of a single source of truth.

Run on pre-validated, certified SAP HANA cloud instances

Safe, future-proof cloud investment

Reassurance that your cloud instances are running on modern Intel® technology that has been validated for SAP HANA workloads to perform more optimally and securely.

Simplify your SAP HANA landscape

Achieve high return on your cloud investment

Consolidate your server footprint to realize operational efficiencies for quality assurance (QA), high availability (HA), disaster recovery (DR), and business intelligence (BI). Consolidate your application server landscape.

Intel and SAP Embark on Strategic Collaboration to Expand Cloud Capabilities

aws   intel®

SAP on Amazon Web Services

AWS has a wide range of SAP instances for scale up and scale out powered by the Intel® Xeon® platform

- Latest 4th Generation Intel® Xeon® processors-based Instances
- Up to 24 TB memory; SAP-certified
- Out-of-the-box integration native to AWS
- Simple management: AWS CLI, console, AWS Identity and Access Management (IAM)
- Flexibility to scale and resize in minutes

SAP Customer Use cases

- AWS offers a wide range of certified instances for SAP HANA in a variety of shapes to meet diverse customer needs. SAP certified instances (U7i, M7i, R7i, X2i & High-Memory U family) run on latest Intel technology.
- Business transformation: Accelerate innovation by extending your SAP landscape to an extremely broad and deep set of cloud services.
- Test, dev, QA, training, demo, proof of concept (POC), and project systems: Deploy infrastructure and systems in a short time, without any commitment or upfront cost. Pay only for resources you need when you need them.
- Hybrid SAP hosting: Migrate existing SAP development and test landscapes to AWS while keeping production on premises. Easily enable more secure integration between on-premises resources and AWS by using Amazon Virtual Private Cloud (Amazon VPC).
- Disaster recovery: Use AWS cloud as a disaster-recovery (DR) site for on-premises SAP systems without the expense of a second physical site and standby infrastructure.

Case Study

Florida Crystals

SINCE 1960

WATCH THE VIDEO

With the help of SAP specialist **Lemongrass**, Florida Crystals migrated its applications

Florida Crystals Corporation Migrated its SAP Infrastructure to Amazon EC2 Instances to Reduce Costs and Meet Sustainability Goals

Lemongrass, an SAP specialist, chose Amazon instances with underlying Intel® Xeon® Processors to maximize performance and workload flexibility.

Innovating with Intel

18+ years of collaborating and innovation with AWS

Collaboration

Deep engineering collaboration across the AWS portfolio
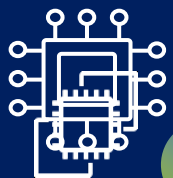
Integration

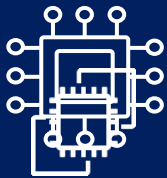Over 400 Amazon EC2 instances are powered by Intel processors[1]

Fastest

R7i instances are the fastest 4th Gen Intel® Xeon® based instances in the cloud[2]
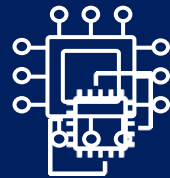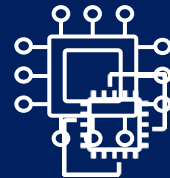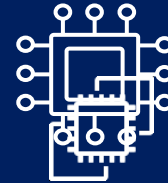
Recent Intel-based Instances

U7i
Memory-Optimized
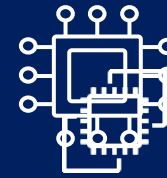
NEW

M7i
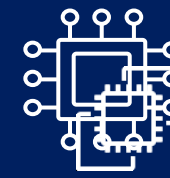General Purpose

M7i-flex
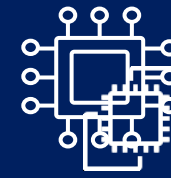General Purpose

R7iz
High Performance

C7I
Compute-Optimized

R6(D)IN
Network-Optimized

M6I(D)N
Network-Optimized

R6ID
Memory-Optimized

[1] Cloud Computing: Why You Should be Looking Under The Hood

[2] Amazon EC2 R7iz Instances

Introducing AWS **U7i Family** for SAP HANA

SAP Landscape	Optimized Costs	Performance	Flexibility	Enhanced Security

SAP certified for both in Scale-Up and Scale-Out configurations with up to 24 TB[1] of Memory combined with 896 vCPUs:

Business Suite on HANA (SoH), next-generation Business Suite S/4HANA, Data Mart Solutions on HANA, Business Warehouse on HANA (BW), and SAP BW/4HANA

Powered by latest 4th Gen Intel Xeon Scalable Processor (Codename: Sapphire Rapids)

- 36:1 ratio of memory to vCPU

- 45%[2] better price performance over existing High Memory (U-1) instances.

U7i instances are powered by 1.9 GHz (Turbo Boost to 2.90 GHz) 4th Generation Intel Xeon Scalable processors.

EC2 U7i instances deliver 135%[1] more compute performance and up to 115%[1] higher memory performance over existing High Memory (U-1) instances.

Flexibility in choosing from 4 sizes today in AWS Regions:

US East (N. Virginia), US West (Oregon)

Always protected with Intel Total Memory Encryption (TME)

Improve Performance and ROI

Take Advantage of Cutting-edge Intel® Technology in AWS with 4th Gen Intel® Xeon® Scalable processors

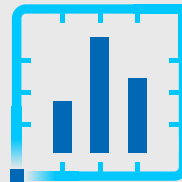Instance Type:
U7i vs U-1
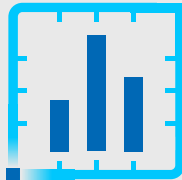
Up to 88%
More SAPS/$
Compared to High Memory U-1 (previous generation)

Instance Type:
U7i vs U-1

Up to 164%
More SAPS performance
In a single instance Compared to High Memory U-1 (previous generation)

intel.
XEON®

The AWS **M7i Instance** for SAP Landscapes

This SAP-certified Instance Family is Ideal for Large Databases and Workloads

SAP Landscape	Optimized Costs	Flexibility	Enhanced Security	Workload Accelerators
SAP Certified and supported for SAP Application Server in 2-tier & 3-tier configs and pure database. • SQL Server • ASE • DB2 • Oracle DB Supports SAP ECC Lift & Shift Scenarios	Powered by newest 4th Gen Intel® Xeon® processor • 4:1 ratio of memory to vCPU • All-core Turbo frequency of 3.2 GHz	Flexibility in choosing from 11 sizes today in AWS Regions: US East (Ohio), US East (N. Virginia), US West (Oregon), and Europe (Ireland, London, Zurich, Stockholm, Spain)	Always protected with Intel® Total Memory Encryption (Intel® TME)	4th Gen Intel® Xeon® processor build-in Accelerators enable efficient offload and acceleration of data operations. • Intel® Advance Matrix Extensions (Intel®AMX) • Intel® Data Streaming Accelerator (DSA) • Intel® In-Memory Analytics Accelerator (IAA), and • Intel® QuickAssist Technology (QAT)

M7i Instance Improves Performance and ROI

Take Advantage of Cutting-edge Intel Technology with 4th Gen Intel® Xeon® Processors

SAP Applications
(ECC, S4, Netweaver Based)

Instance Type: M7i vs M6i

Up to 30%
More SAPS/$
Compared to M6i (previous generation)
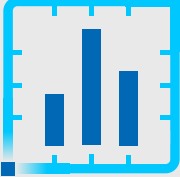
Instance Type: M7i vs M6i

Up to 36%
More SAPS performance
In a single instance Compared to M6i (previous generation)

Intel based vs. AMD based Instances
(ECC, S4, Netweaver Based)

Instance Type: M7i vs M7a

Up to 8%
More SAPS/$
Compared to M7a (AMD based Instance) Current Generation

Instance Type: M7i vs M6a

Up to 40%
More SAPS
Compared to M6a (AMD based Instance) Previous Generation

See backup slides for configuration details. Results may vary.

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Introducing **AWS R7i Family** for SAP HANA

SAP Landscape

SAP Certified and supported for SAP HANA Scale-Up and Scale-Out configurations

Provides up to 1.5TB of Memory combined with 192 vCPUs

Optimized Costs

Powered by latest 4th Gen Intel® Xeon® processor

- 8:1 ratio of memory to vCPU

Flexibility

Flexibility in choosing from 11 sizes today in AWS Regions:

US East (Ohio), US East (N. Virginia), US West (Oregon), and Europe (Ireland, Stockholm, Spain)

Enhanced Security

Always protected with Intel Total Memory Encryption (TME)

Workload Accelerators

4th Gen Intel® Xeon® Processor build-in Accelerators enable efficient offload and acceleration of data operations.

- Intel® Advance Matrix Extensions (Intel®AMX)
- Intel® Data Streaming Accelerator (DSA)
- Intel® In-Memory Analytics Accelerator (IAA), and
- Intel® QuickAssist Technology (QAT)

Improve Performance and ROI

Take Advantage of Cutting-edge Intel® Technology in AWS with 4th Gen Intel® Xeon® Processors

R – Family for SAP HANA
(Powered by 4th Gen Intel® Xeon® Processor)

Instance Type: X2i
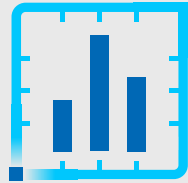
Up to **50%**
Better Performance/$**
compared to X1, previous generation

Up to **4x**
Network Bandwidth**
compared to X1 (previous generation)

Instance Type: R7i vs. R6i
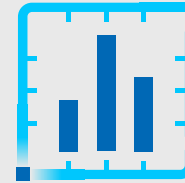
36%
More SAPS Performance*
Compared to R6i (previous generation)

Instance Type: R7i vs. R5
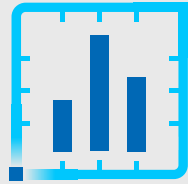
44%
More SAP Performance*
Compared to R5 (previous generation)

37%
More SAPS/$*
Compared to R5 (previous generation)

Instance Type: R7i vs. R6i

29%
More SAPS/$*
Compared to R6i (previous generation)

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Intel® Architecture Instance Types on AWS
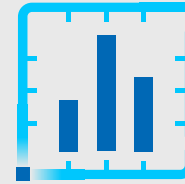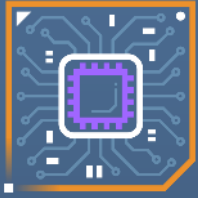
Over **400** Intel-based instances available

	General Purpose	Compute-Optimized	Memory Optimized		Accelerated Compute				Storage Optimized		HPC Optimized
	General purpose instances provide a balance of compute, memory and networking resources, and can be used for a variety of diverse workloads.	Compute Optimized instances are ideal for compute bound applications that benefit from high performance processors.	Memory optimized instances are designed to deliver fast performance for workloads that process large data sets in memory.		Accelerated computing instances use hardware accelerators, or co-processors, to perform functions more efficiently.				Storage optimized instances are designed for workloads that require high, sequential read and write access to very large data sets on local storage.		Ideal for applications that benefit from high-performance processors including large, complex simulations and deep learning workloads.
4th Gen Intel® Xeon® processors	M7i & M7i-flex ⭐	C7i ⭐	R7iz ⭐	U7i							
Habana Gaudi					DL1						
3rd Gen Intel® Xeon® processors	M6i(d) M6i(d)n	C6i(d) C6in	X2idn X2iedn R6i(d) R6i(d)n						I4i		HPC6id
2nd Gen Intel® Xeon® processors	M5zn		R5(d)n R5b X2iezn		G4dn P4d				D3 D3en		
1st and 2nd Gen Intel® Xeon® processors	T3 M5(d)n	C5(d)	R5(d) HMI								
Intel® Xeon® processors	M5(d)	C5n	z1d		P3dn				I3en		
Intel® Xeon® v4 Processors	T2 M4		X1 R4		P2 P3 G3 F1				H1 I3		
Intel® Xeon® v3 Processors		C4	X1e						D2		

See https://aws.amazon.com/ec2/instance-types/ and speaker notes for details.

⭐ Now Available

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The Right Instance for the Right Workload

SAP NetWeaver Applications (ECC, S/4)

Instance Family	vCPU	Memory (GB)	CPU Type	Supported for NetWeaver	Supported for HANA	Support for AnyDB
M7i	2-192	8-768	4th Gen Xeon	Yes	No	Yes
M6i, C6I, C6Id	2-128	8-512	Ice Lake	Yes	No	M6i, C6I, C6Id
C5	2-64	16-504	2nd Gen Xeon	Yes	No	Yes

NetWeaver Apps and Small/Medium SAP HANA (up to 1,5TB)

Instance Family	vCPU	Memory (GB)	CPU Type	Supported for NetWeaver	Supported for HANA	Support for AnyDB
R7i	2-192	16-1,568	4th Gen Xeon	Yes	Yes	Yes
R6i	2-128	16-1,024	3rd Gen Xeon	Yes	Yes	Yes
R5/R5b	2-96	16-768	2nd Gen Xeon	Yes	Yes	Yes

Large SAP HANA (3TB – 32TB)

Instance Family	vCPU	Memory (GB)	CPU Type	Supported for NetWeaver	Supported for HANA
U7i	Up to 896	12,288 – 32,768	4th Gen Xeon	Yes	Yes
X2i	4-128	128-4,096	3rd Gen Xeon	Yes	Yes
U Family High-Memory[1]	224-448	6,144-24,576	2nd Gen Xeon	Yes	Yes

30% better SAPS/$ with the first 4th Gen Intel® Xeon® processor-based M7i instances certified for SAP NetWeaver in the cloud[2]

Consolidate SAP Application Server Previous M5 to Latest M7i Family[1,2]

Old

m5.4xlarge	m5.4xlarge	m5.4xlarge	m5.4xlarge	m5.4xlarge	Total
16 vCPU / 64GB	16 vCPU / 64GB	16 vCPU / 64GB	16 vCPU / 64GB	16 vCPU / 64GB	80 vCPU / 320GB
22538 SAPS	22538 SAPS	22538 SAPS	22538 SAPS	22538 SAPS	113000 SAPS
$242.36/Month	$242.36/Month	$242.36/Month	$242.36/Month	$242.36/Month	$1211,80/Month

1st Gen Intel® Xeon Processor

New

m7i.16xlarge		Total
64 vCPU / 256GB	12% Reduced Costs +9% SAPS additional Headroom	64 vCPU / 256GB
123000 SAPS	Additional TCO Savings with Dev/Test Tier Consolidation	123000 SAPS
$484,95/Month		$1068,08/Month

4th Gen Intel® Xeon® Processor

No Sacrifice; Consolidate SAP AppTier

Optmize & Reduce your LandscapeTCO

Utilize Latest AWS M7i Family for SAP

Transform **SAP HANA Scale-Out Cluster** with 512GB Previous R5 to Latest R7i Family [1,2]

Old

Master, Scale Out Configuration, 3rd Node Standby

r5.8xlarge	r5.8xlarge	r5.8xlarge
32 vCPU / 256GB	32 vCPU / 256GB	32 vCPU / 256GB
$635,83/Month	$635,83/Month	$635,83/Month

Total

96 vCPU / 768GB
512GB HANA DB

$1907,49/Month

2nd Gen Intel® Xeon® Processor (Cascade Lake)

New

R7i.16xlarge
64 vCPU / 512GB

$1401,86/Month

27% Reduced Costs

Consolidate Scale-Out to Scale-Up SAP HANA DB

Additional TCO Savings with Dev/Test Tier Consolidation

Total

64 vCPU / 512GB

$1401,86/Month

4th Gen Intel® Xeon® Processor

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intel Xeon PLATINUM

No Sacrifice; Consolidate SAP AppTier

Optmize & Reduce your LandscapeTCO

Utilize Latest AWS R7i Family for SAP

Reduced OS/Maintenance Costs

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aws intel®

Summary

Modernize your SAP landscape onto S / 4 HANA with the **agility**, **insights** and **innovation** from running it on AWS, powered by **Intel® Xeon® processors**

U7i, M7i and **R7i** powered by **4th Gen Intel® Xeon® processors** provide the opportunity to **optimize your SAP landscape**

U7i Instance
U7i delivers the **best compute price performance** for large in-memory workloads

M7i Instance
M7i is best suited for **SAP Application Tier** and **non-Production Tier**

R7i Instance
R7i is suited for SAP HANA and allows a consolidation thorugh scale-up

Up to 164%
More SAPS performance In a single instance Compared to High Memory U-1 (previous generation)[1]

Up to 36%
More SAPS performance In a single instance Compared to M6i (previous generation)[1]

29%
More SAPS/$* Compared to R6i (previous generation)[1]

Get Started with SAP on AWS

Strategic Collaboration:
Intel and SAP RISE

Strategic Collaboration: Intel and SAP RISE

Intel and SAP RISE announced a strategic collaboration to deliver a more powerful and sustainable SAP® software landscapes in the cloud. Designed to help customers derive greater scalability, agility and consolidation of existing SAP software landscapes, the collaboration deepens Intel's focus on delivering extremely powerful and secure instances for SAP, powered by Intel® Xeon® processors.

Intel embarks on the SAP RISE Journey in the coming years with the migration to S/4HANA

LEARN MORE

RISE with SAP
Powered by Intel Technology

1 → Migrate to S/4HANA

intel XEON PLATINUM

All Options require SAP Certified Infrastructure

- SAP Certified Appliances (OEMs)
- SAP Certified IaaS (CSPs)
- SAP Certified Hypervisor on Intel x86 (Broadcom/VMWare, Nutanix, SUSE KVM)

Intel powers the worldwide largest ecosystem of SAP certified Infrastructure

SAP RISE Commercial Framework

1 RISE with SAP – S/4HANA Cloud – **Private Edition**

Private cloud within Hyperscalers (Azure, AWS, GCP, Alibaba) or SAP DataCenter

2 RISE with SAP S/4HANA – Private Edition – **Customer Data Center Option**

Moving Customers to cloud, without moving their data center

Private cloud within Customer Data Center (HPE Greenlake, Dell Apex, Lenovo TruScale, Fujitsu uSCALE)

3 S/4HANA / SAP ECC

Customer Data Center or Partner IaaS or DCaaS with Co-Location

intel XEON PLATINUM

Intel Supports the Journey to SAP S4 / HANA

A — Re-host / Re-platform SAP ECC

SAP ECC with AnyDB — Migrate to S/4HANA

SAP ECC with AnyDB — Migrate to Suite on HANA → **SAP Suite on HANA** — Migrate to S/4HANA

B — Migrate from SAP ECC → **SAP Suite on HANA** — Migrate to S/4HANA

C — Migrate with SAP RISE from SAP ECC → **SAP RISE** — Migrate to S/4HANA

D — New S/4HANA or BW/4HANA

E — New on SAP RISE
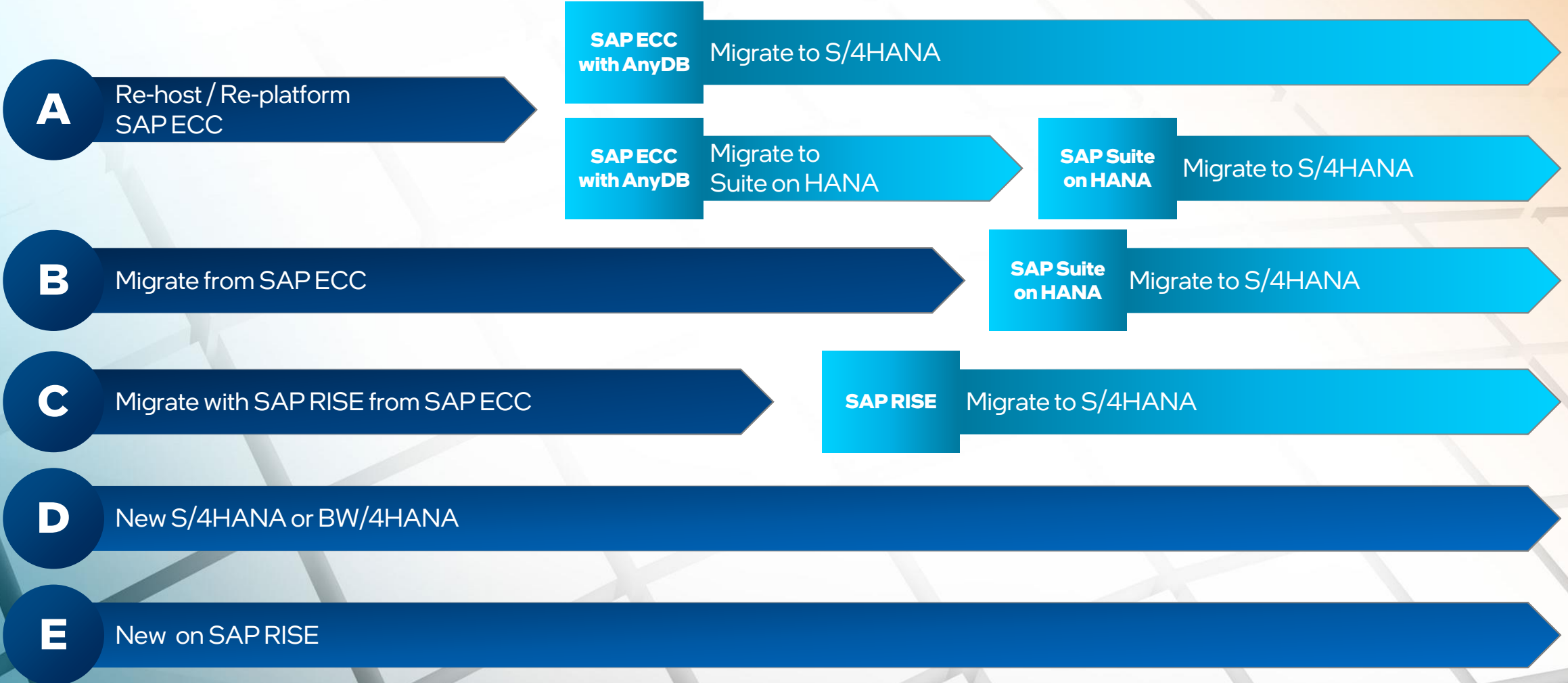
Intel® Xeon® Scalable Platform - 360° Support for SAP

Re-Host/Re-Platform/Transform

ECC EP 8
Supported until 2030
Releaed in 2004

Microsoft — SQL Server

SAP — ASE

Oracle — ORACLE DATABASE

IBM — DB2

Suite on HANA
SAP

SAP — HANA
Releaed in 2012
Supported until 2030

Greenfield/ Migrate

S/4HANA
SAP S/4 HANA
Supported until 2040
Releaed in 2015
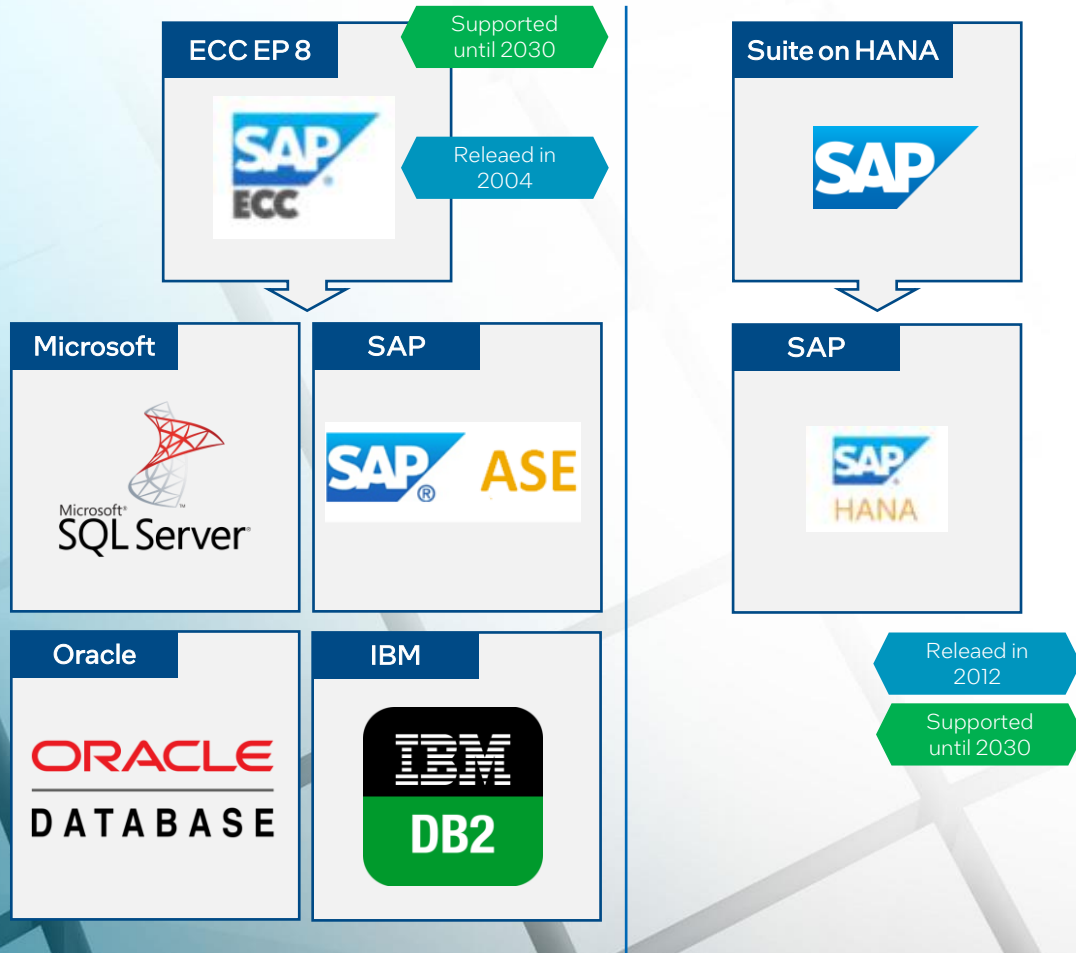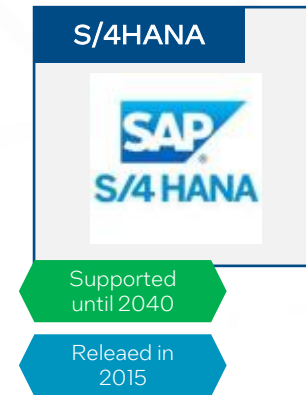
- Intel Xeon Platform powers the SAP landscape for the last 2 decades

- Benefit from Intel's partnership with SAP, Microsoft, Oracle and IBM to deliver highest performance, resilience at lower TCO for their database products

- Intel enables an open ecosystem of SAP hardware and software vendors to provide highest flexibility

- Future Proof Investment in case you Re-Host or Re-Platform your existing SAP landscape or start your migration to S4/HANA

- Scale-Up to 32TB SAP HANA and consolidate your SAP landscape with Intel® Xeon® processors to optimize TCO and help meet your sustainability goals

intel XEON PLATINUM

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Edge Platform-as-a-Service (PaaS) from SAP and Intel
Enabled by SAP RISE & SAP BTP

Introducing Edge Platform-as-a-Service from SAP and Intel

Intel's new commercial software platform enabling enterprises to build, deploy, run, and manage scalable edge and AI solutions on standard hardware with cloud-like simplicity

A Modular Platform for Network and Edge Transformation

Foundational components that drive network and edge transformation

Industry Solutions
AI-enabled edge end-solutions optimized for various use-cases

AI and Applications
Tools to build and deploy edge-native application software and AI

Infrastructure Software
Secure infrastructure software for edge-to-cloud hybrid implementations

Foundational HW built for the edge
Platform Hardware built for the edge (CPUs, GPUs, network accelerators)

Build	Deploy	Run	Manage

Security

Partner Ecosystem Support

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SAP / Alert Enterprise Solution – Edge PaaS

Solution Overview

Cyber-Physical Security Governance Risk and Compliance – "Cyber Physical GRC" for Utilities

Based on Intel® Xeon®, Core, Edge Platform

Alert Enterprise Prevents, Detects & Mitigates Electrical Substation Threats

SAP S/4 Hana Delivers Enterprise to Edge Vertical Solutions

Device Edge

IT Network

Camera
Handheld
Meter
PLC
Sensors

4G LTE
5G
5G
Fiber

OT Network

Enterprise and Network Edge

Yellowstone Node n
Yellowstone Node 2

Yellowstone Edge Node

Vertical Solution Components
App 2 — ALERT ENTERPRISE — App 3

SAP: Connectivity | Data Integration | Messaging | Process Integration

Edge Video AI

Edge Native Node Software
Security Services | Media Storage Services | Observ-ability | Network Services

Hardware, CPU, NIC, Acceleration, Storage

intel

WAN Connection Intermittent

4G LTE 5G Fiber

Cloud - Business, Application, and Integration Services

Data Management
Asset Management
Logistics
SAP Business Technology Platform
SAP
S/4 HANA Digital Core powered by intel
Mobile
Extensibility
Integration
Analytics & Planning
Supply Chain Planning

Edge Native Software Platform intel
Services Catalog
Application Orchestration
Cluster Orchestration
Infrastructure Fleet Management

Solution employs secure, high-performance edge computing, AI, data analytics, CV, 5G, and cloud computing

https://alertenterprise.com/partners/sap/

aws intel

34

SAP / QuayChain Solution – Edge PaaS

Solution Overview

Drives Value for Ports, their Supply Chain Stakeholders, Communities and the Environment

Based on Intel® Xeon®, Core, Edge Platform

QuayChain Edge Devices (QEDs):
- Computer Vision
- Machine Learning/AI
- Local Edge Compute
- Environmental Sensors
- Dynamic Physical Sensors 5G Connectivity
- End to end encryption

Call to Action

Modernize your SAP landscape with 4th Gen Intel® Xeon® Processors leveraging the largest SAP certified ecosystem for improved performance and optimized TCO on AWS

*5th Gen Intel Xeon AWS instances COMING SOON

Migrate to SAP S4 / HANA with support from SAP RISE - powered by Intel® Xeon®. Support your journey to SAP RISE and benefit from the SAP & Intel partnership delivering better performance, scalability and resiliency for your business-critical processes.

Connect with an Intel representative to learn more about the Edge Platform-as-a-Service from SAP and Intel, integrated with SAP RISE and SAP BTP, enables new business cases already integrated into SAP landscapes for faster adoption and improved efficiencies.

Training

Competency

Business Transformation for SAP Software

SAP is one of the leading global providers of business software solutions. These solutions can be found in many enterprise and public sector organizations, including many of your customers.

SAP and Intel have a two-decade-long relationship, with SAP software solutions optimized on Intel® technologies, including server processors, memory, storage, and AI acceleration. Explore SAP software solutions and how they work with Intel® technologies will help you deliver digital transformation services to your customers. This curriculum will help explain the value of SAP on Intel data center technologies. Delve into topics such as Business Transformation, Digital Disruptions, and Key Market Trends. Gain skills and insights about SAP software system requirements, benchmarks and sizing, and deployment options.

Training Video

Migrating SAP to the Cloud: AWS and Intel

Notices and Disclaimers

Performance varies by use, configuration and other factors. Learn more on the Performance Index site.
Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.
Your costs and results may vary.
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U7i

Improve Performance and ROI
Take Advantage of Cutting-edge Intel® Technology in AWS with 4th Gen Intel® Xeon® Scalable processors

SPR vs. CLX	U7i (Sapphire Rapids) performance relative to prior gen Utb1 (Cascade Lake)											
	U-1 (cascade lake)	vCPU	Memory	SAPS*	On-Demand	SAPS/$/hr**	U7i (Intel Sapphire Rapids)	vCPU	Memory	SAPS*	On-Demand	SAPS/$/hr**	Perf Change***	Perf/$ change
	u-12tb1.112xlarge	448	12288	475,500	109.2	4354.40	u7i-12tb.224xlarge	896	12288 GiB	1254030	152.880	8202.71	164%	88%
	u-18tb1.112xlarge	448	18432	520,330	163.8	3176.62	u7in-16tb.224xlarge	896	16384 GiB	1281620	203.840	6287.38	146%	98%
	u-24tb1.112xlarge	448	24576	508,720	218.4	2329.30	u7in-24tb.224xlarge	896	24576 GiB	1225150	305.760	4006.90	141%	72%
							u7in-32tb.224xlarge	896	32768 GiB		407.680			

aws intel.

SAP-Certified AWS Instances for SAP HANA & Improve Performance and ROI

R7i performance relative to prior gen R6i

R7i vs R6i

R7i (Sapphire Rapids) Certified for Netweaver Certified for SAP HANA	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	R6i (Icelake) Certified for Netweaver Certified for SAP HANA	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	Perf Improvement R7i SAPS	Perf/$ Improvement R7i SAPS/$	Perf/$ Monthly Costs Delta R7i
r6i.large	2	16	3,063	$ 0.126 /hour	24309.52	$ 41.72 /month	r7i.large	2	16	4,155	$ 0.1323 /hour	31406	$ 43.81 /month	35.65 %	29.19 %	5.01 %
r6i.xlarge	4	32	6,127	$ 0.252 /hour	24313.49	$ 83.45 /month	r7i.xlarge	4	32	8,310	$ 0.2646 /hour	31406	$ 87.61 /month	35.63 %	29.17 %	4.99 %
r6i.2xlarge	8	64	12,253	$ 0.504 /hour	24311.51	$ 166.89 /month	r7i.2xlarge	8	64	16,620	$ 0.5292 /hour	31406	$ 175.24 /month	35.64 %	29.18 %	5.00 %
r6i.4xlarge	16	128	24,506	$ 1.008 /hour	24311.51	$ 333.78 /month	r7i.4xlarge	16	128	33,240	$ 1.0584 /hour	31406	$ 350.47 /month	35.64 %	29.18 %	5.00 %
r6i.8xlarge	32	256	49,013	$ 2.016 /hour	24312.00	$ 667.56 /month	r7i.8xlarge	32	256	66,480	$ 2.1168 /hour	31406	$ 700.93 /month	35.64 %	29.18 %	5.00 %
r6i.12xlarge	48	384	73,519	$ 3.024 /hour	24311.84	$ 1001.33 /month	r7i.12xlarge	48	384	99,720	$ 3.1752 /hour	31406	$ 1051.4 /month	35.64 %	29.18 %	5.00 %
r6i.16xlarge	64	512	98,025	$ 4.032 /hour	24311.76	$ 1335.11 /month	r7i.16xlarge	64	512	105,500	$ 4.2336 /hour	24920	$ 1401.86 /month	7.63 %	2.50 %	5.00 %
r6i.24xlarge	96	768	147,038	$ 6.048 /hour	24311.84	$ 2002.66 /month	r7i.24xlarge	96	768	158,250	$ 6.3504 /hour	24920	$ 2102.79 /month	7.63 %	2.50 %	5.00 %
							r7i.48xlarge	192	1536	296,200	$ 12.7008 /hour	23321	$ 4205.59 /month			
r6i.32xlarge	128	1024	196,050	$ 8.064 /hour	24311.76	$ 2670.22 /month										

R7i performance relative to prior gen R6i

R7i vs R5i

R7i (Sapphire Rapids) Certified for Netweaver Certified for SAP HANA	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	R6i (Icelake) Certified for Netweaver Certified for SAP HANA	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	Perf Improvement R7i SAPS	Perf/$ Improvement R7i SAPS/$	Perf/$ Monthly Costs Delta R7i
r5.large	2	16	2,891	$ 0.126 /hour	22944.44	$ 39.42 /month	r7i.large	2	16	4,155	$ 0.1323 /hour	31406	$ 43.81 /month	43.72 %	36.88 %	11.14 %
r5.xlarge	4	32	5,782	$ 0.252 /hour	22944.44	$ 79.57 /month	r7i.xlarge	4	32	8,310	$ 0.2646 /hour	31406	$ 87.61 /month	43.72 %	36.88 %	10.10 %
r5.2xlarge	8	64	11,564	$ 0.504 /hour	22944.44	$ 159.14 /month	r7i.2xlarge	8	64	16,620	$ 0.5292 /hour	31406	$ 175.24 /month	43.72 %	36.88 %	10.12 %
r5.4xlarge	16	128	23,128	$ 1.008 /hour	22944.44	$ 317.55 /month	r7i.4xlarge	16	128	33,240	$ 1.0584 /hour	31406	$ 350.47 /month	43.72 %	36.88 %	10.37 %
r5.8xlarge	32	256	46,257	$ 2.016 /hour	22944.94	$ 635.83 /month	r7i.8xlarge	32	256	66,480	$ 2.1168 /hour	31406	$ 700.93 /month	43.72 %	36.88 %	10.24 %
r5.12xlarge	48	384	69,385	$ 3.024 /hour	22944.78	$ 953.38 /month	r7i.12xlarge	48	384	99,720	$ 3.1752 /hour	31406	$ 1051.4 /month	43.72 %	36.88 %	10.28 %
r5.16xlarge	64	512	92,513	$ 4.032 /hour	22944.69	$ 1271.66 /month	r7i.16xlarge	64	512	105,500	$ 4.2336 /hour	24920	$ 1401.86 /month	14.04 %	8.61 %	10.24 %
r5.24xlarge	96	768	138,770	$ 6.048 /hour	22944.78	$ 1907.49 /month	r7i.24xlarge	96	768	158,250	$ 6.3504 /hour	24920	$ 2102.79 /month	14.04 %	8.61 %	10.24 %
							r7i.48xlarge	192	1536	296,200	$ 12.7008 /hour	23321	$ 4205.59 /month			

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M7i vs M6i

Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/

M7i (Sapphire Rapids) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	M6i (Icelake) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.large	2	8	4218	$ 0.1008 /hour	41845	$ 33.38 /month	m6i.large	2	8	3095	$ 0.096 /hour	32240	$ 31.79 /month	36.28 %	29.79 %	5.00 %
m7i.xlarge	4	16	8435	$ 0.2016 /hour	41840	$ 66.76 /month	m6i.xlarge	4	16	6190	$ 0.192 /hour	32240	$ 63.58 /month	36.27 %	29.78 %	5.00 %
m7i.2xlarge	8	32	16870	$ 0.4032 /hour	41840	$ 133.51 /month	m6i.2xlarge	8	32	12380	$ 0.384 /hour	32240	$ 127.15 /month	36.27 %	29.78 %	5.00 %
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m6i.4xlarge	16	64	24760	$ 0.768 /hour	32240	$ 254.3 /month	36.27 %	29.78 %	5.00 %
m7i.8xlarge	32	128	67480	$ 1.6128 /hour	41840	$ 534.05 /month	m6i.8xlarge	32	128	49520	$ 1.536 /hour	32240	$ 508.61 /month	36.27 %	29.78 %	5.00 %
m7i.12xlarge	48	192	101220	$ 2.4192 /hour	41840	$ 801.07 /month	m6i.12xlarge	48	192	74280	$ 2.304 /hour	32240	$ 762.92 /month	36.27 %	29.78 %	5.00 %
m7i.16xlarge	64	256	123300	$ 3.2256 /hour	38225	$ 1068.08 /month	m6i.16xlarge	64	256	99040	$ 3.072 /hour	32240	$ 1017.23 /month	24.50 %	18.57 %	5.00 %
m7i.24xlarge	96	384	167470	$ 4.8384 /hour	34613	$ 1602.13 /month	m6i.24xlarge	96	384	148560	$ 4.608 /hour	32240	$ 1525.84 /month	12.73 %	7.36 %	5.00 %
n/a	n/a	n/a	n/a	n/a	n/a	n/a	m6i.32xlarge	128	512	198080	$ 6.144 /hour	32240	$ 2034.45 /month	n/a	n/a	n/a
m7i.48xlarge	192	768	306020	$ 9.6768 /hour	31624	$ 3204.26 /month	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

M7i (SPR) performance relative to M6i (ICX)

M7i vs M6a

Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/

M7i (Sapphire Rapids) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	M6a (AMD Milan) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.large	2	8	4218	$ 0.1008 /hour	41845	$ 33.38 /month	m6a.large	2	8	3023	$ 0.0864 /hour	34988	$ 28.61 /month	39.53 %	19.60 %	16.67 %
m7i.xlarge	4	16	8435	$ 0.2016 /hour	41840	$ 66.76 /month	m6a.xlarge	4	16	6046	$ 0.1728 /hour	34988	$ 57.22 /month	39.51 %	19.58 %	16.67 %
m7i.2xlarge	8	32	16870	$ 0.4032 /hour	41840	$ 133.51 /month	m6a.2xlarge	8	32	12093	$ 0.3456 /hour	34991	$ 114.43 /month	39.50 %	19.57 %	16.67 %
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m6a.4xlarge	16	64	24185	$ 0.6912 /hour	34990	$ 228.88 /month	39.51 %	19.58 %	16.66 %
m7i.8xlarge	32	128	67480	$ 1.6128 /hour	41840	$ 534.05 /month	m6a.8xlarge	32	128	48370	$ 1.3824 /hour	34990	$ 457.75 /month	39.51 %	19.58 %	16.67 %
m7i.12xlarge	48	192	101220	$ 2.4192 /hour	41840	$ 801.07 /month	m6a.12xlarge	48	192	72555	$ 2.0736 /hour	34990	$ 686.62 /month	39.51 %	19.58 %	16.67 %
m7i.16xlarge	64	256	123300	$ 3.2256 /hour	38225	$ 1068.08 /month	m6a.16xlarge	64	256	96740	$ 2.7648 /hour	34990	$ 915.5 /month	27.46 %	9.25 %	16.67 %
m7i.24xlarge	96	384	167470	$ 4.8384 /hour	34613	$ 1602.13 /month	m6a.24xlarge	96	384	145110	$ 4.1472 /hour	34990	$ 1373.25 /month	15.41 %	-1.08 %	16.67 %
n/a	n/a	n/a	n/a	n/a	n/a	n/a	m6a.32xlarge	128	512	193480	$ 5.5296 /hour	34990	$ 1831.01 /month	n/a	n/a	n/a
m7i.48xlarge	192	768	306020	$ 9.6768 /hour	31624	$ 3204.26 /month	m6a.48xlarge	192	768	290220	$ 8.2944 /hour	34990	$ 2746.51 /month	n/a	n/a	n/a

M7i (SPR) performance relative to M6a (AMD Milan)

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Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/

M7i vs M7a

M7i (Sapphire Rapids) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	M7a (AMD Genoa) Certified for NetWeaver	vCPU	Memory	SAPS	Paygo onDemand/Hour	SAPS/$	EC2 Saving Plans 3 years Reserve / No Upfront	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.large	2	8	4218	$ 0.1008 /hour	41845	$ 33.38 /month	m7a.large	2	8	4476	$ 0.11592 /hour	38613	$ 36.38 /month	-5.76 %	8.37 %	-8.25 %
m7i.xlarge	4	16	8435	$ 0.2016 /hour	41840	$ 66.76 /month	m7a.xlarge	4	16	8953	$ 0.23184 /hour	38617	$ 76.77 /month	-5.79 %	8.35 %	-13.04 %
m7i.2xlarge	8	32	16870	$ 0.4032 /hour	41840	$ 133.51 /month	m7a.2xlarge	8	32	17905	$ 0.46368 /hour	38615	$ 153.54 /month	-5.78 %	8.35 %	-13.05 %
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m7a.4xlarge	16	64	35810	$ 0.92736 /hour	38615	$ 307.07 /month	-5.78 %	8.35 %	-13.04 %
m7i.8xlarge	32	128	67480	$ 1.6128 /hour	41840	$ 534.05 /month	m7a.8xlarge	32	128	71620	$ 1.85472 /hour	38615	$ 614.15 /month	-5.78 %	8.35 %	-13.04 %
m7i.12xlarge	48	192	101220	$ 2.4192 /hour	41840	$ 801.07 /month	m7a.12xlarge	48	192	107430	$ 2.78208 /hour	38615	$ 921.22 /month	-5.78 %	8.35 %	-13.04 %
m7i.16xlarge	64	256	123300	$ 3.2256 /hour	38225	$ 1068.08 /month	m7a.16xlarge	64	256	143240	$ 3.70944 /hour	38615	$ 1228.3 /month	-13.92 %	-1.01 %	-13.04 %
m7i.24xlarge	96	384	167470	$ 4.8384 /hour	34613	$ 1602.13 /month	m7a.24xlarge	96	384	214860	$ 5.56416 /hour	38615	$ 1842.45 /month	-22.06 %	-10.36 %	-13.04 %
n/a	n/a	n/a	n/a	n/a	n/a	n/a	m7a.32xlarge	128	512	286480	$ 7.41888 /hour	38615	$ 2456.6 /month	n/a	n/a	n/a
m7i.48xlarge	192	768	306020	$ 9.6768 /hour	31624	$ 3204.26 /month	m7a.48xlarge	192	768	429720	$ 11.12832 /hour	38615	$ 3684.9 /month	n/a	n/a	n/a

M7i (SPR) performance relative to M7a (AMD Genoa)

Slide #	Claim	Config/Back up slide # reference
Slide 4 and 20	R7i based on latest 4th Gen Intel Xeon provide up to 29% higher SAPS/$ vs R6i[1]	Slide 21 29% more SAPS/$ Analysis based on public pricing from AWS for US East on 10/24/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance R7i .4xlarge: 16 vCPU (4th Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance R6i.4xlarge: 16 vCPU (3nd Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099

														Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
r6i.4xlarge	16	128	24,506	$ 1.008 /hour		24311.51	$ 333.78 /month	r7i.4xlarge		16	128	33,240	$ 1.0584 /hour	31406	$ 350.47 /month	35.64 %	29.18%	5.00%

Slide #	Claim	Config/Back up slide # reference
Slide 18	M7i vs M6i – up to 30% more SAPS/$ M7i vs M6i Up to 36% more SAPS performance	Slide 22 30% higher SAPS/$ Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance M7i.4xlarge (4th Gen Xeon), 16 vCPU, 64GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance M6i.4xlarge (3nd Gen Xeon), 16 vCPU, 64GB total memory, https://me.sap.com/notes/1656099

													Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m6i.4xlarge	16	64	24760	$ 0.768 /hour	32240	$ 254.3 /month	36.27 %	29.78 %	5.00 %

M7i vs M7a Up to 8% More SAPS/$	Slide 23 8% more SAPS/$ Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance M7i .4xlarge: 16 vCPU (4th Gen Xeon), 64 GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance M7a.4xlarge: 16 vCPU (AMD Genoa), 64 GB total memory, https://me.sap.com/notes/1656099

													Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m7a.4xlarge	16	64	35810	$ 0.92736 /hour	38615	$ 307.07 /month	-5.78 %	8.35 %	-13.04 %

M7i vs M6a Up to 40% more SAPS	Slide 22 40% more SAPS/$ Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance M7i.4xlarge: 16 vCPU (4th Gen Xeon), 64 GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance M6a.4xlarge: 16 vCPU (AMD Milan), 64 GB total memory, https://me.sap.com/notes/1656099

													Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.4xlarge	16	64	33740	$ 0.8064 /hour	41840	$ 267.02 /month	m6a.4xlarge	16	64	24185	$ 0.6912 /hour	34990	$ 228.88 /month	39.51 %	19.58 %	16.66 %

Slide #	Claim	Config/Back up slide #
Slide 20	X2i vs X1 – Up to 50% better performance and up to 4x Network bandwidth	Based on AWS claims and instance details. https://aws.amazon.com/ec2/instance-types/x2i/
	R7i vs R6i – up to 36% more SAPS performance and 29% more SAPS/$	Slide 21 36% more SAPS & 29% more SAPS/$ Analysis based on public pricing from AWS for US East on 10/24/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance R7i .4xlarge: 16 vCPU (4th Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance R6i.4xlarge: 16 vCPU (3rd Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099
	R7i vs R5 - Up to 44% better SAPS and up to 37% better SAPS/$	Slide 21 44% more SAPS & 37% more SAPS/$ Analysis based on public pricing from AWS for US East on 10/24/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance R7i .4xlarge: 16 vCPU (4th Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance R5.4xlarge: 16 vCPU (2nd Gen Xeon), 128 GB total memory, https://me.sap.com/notes/1656099
Slide 22	30% better SAPS	Slide 22 30% higher SAPS/$ Analysis based on public pricing from AWS for US East on 10/5/2023: https://aws.amazon.com/ec2/pricing/on-demand/ New: 1-instance M7i.4xlarge (4th Gen Xeon), 16 vCPU, 64GB total memory, https://me.sap.com/notes/1656099 Baseline: 1-instance M6i.4xlarge (4th Gen Xeon), 16 vCPU, 64GB total memory, https://me.sap.com/notes/1656099
Slide 23 Slide 24	M5 to M7i: 12% reduced costs +9% SAPS additional headroom R5 to R7i: 27% reduced costs	Slide 26 [1] SAP SAPS based on SAP – AWS Note 1656099 (https://me.sap.com/notes/1656099)

Embedded table data (R7i vs R6i):

Instance	vCPU	Mem	SAPS	Price		SAPS calc	Cost/month	Instance	vCPU	Mem	SAPS	Price		Price calc	Cost/month	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
r6i.4xlarge	16	128	24,506	$ 1.008 /hour		24311.51	$ 333.78 /month	r7i.4xlarge	16	128	33,240	$ 1.0584 /hour		31406	$ 350.47 /month	35.64 %	29.18 %	5.00 %

Embedded table data (R7i vs R5):

Instance	vCPU	Mem	SAPS	Price		SAPS calc	Cost/month	Instance	vCPU	Mem	SAPS	Price		Price calc	Cost/month	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
r5.4xlarge	16	128	23,128	$ 1.008 /hour		22944.44	$ 317.55 /month	r7i.4xlarge	16	128	33,240	$ 1.0584 /hour		31406	$ 350.47 /month	43.72 %	36.88 %	10.37 %

Embedded table data (Slide 22):

Instance	vCPU	Mem	SAPS	Price		SAPS calc	Cost/month	Instance	vCPU	Mem	SAPS	Price		Price calc	Cost/month	Perf Improvement SAPS	Perf/$ SAPS/$	Perf/$ Monthly Costs
m7i.4xlarge	16	64	33740	$ 0.8064 /hour		41840	$ 267.02 /month	m6i.4xlarge	16	64	24760	$ 0.768 /hour		32240	$ 254.3 /month	36.27 %	29.78 %	5.00 %

References

Slide 23

Calculation based on

https://aws.amazon.com/ec2/pricing/on-demand/
M5.4xlarge
OS: Linux
Content Use
3 year savings plan, no upfront payment
Region: US East (Ohio)
242.36/Month = 5x = $1211,80
25.10.2023

Vs.
M7.16xlarge
(1068,08/1211,80)-1(%)

Same settings as above
20.10.2023

Slide 24

Calculation based on

(1401,86/1907,49)-1 (%) - 27%

https://calculator.aws/#/addService

R5.8xlarge
OS: Linux
Content Use
Region: US East (Ohio)
3 years commit
20.10.2023
635.83/month * 3 = 1907,49

Vs.
R7i.16xlarge
1401,86/month

Same settings as above
16.10.2023

Performance Business Warehouse Benchmark

Nb.	SAP-Benchmark	Processor	Memory	Datasets	Phase 2 Query per Hour	Perf Gain
1	2020046	8280L (2nd Gen)	1536 GB	1.3	10106	
2	2023017	8480+ (4th Gen)	1024 GB	1.3	15198	1.17x

	SAP-Benchmark	Processor	Memory	Datasets	Phase 2 Query per Hour	Perf Gain
3	2020046	8280L (2nd Gen)	1536 GB	1.3	10106	
4	2023075	8592+ (5th Gen)	1536 GB	1.3	17846	1.77x

	SAP-Benchmark	Processor	Memory	Datasets	Phase 2 Query per Hour	Perf Gain
5	2018043	8176	6144 GB	2.6	4383	
6	2023076	8592+ (5th Gen)	1536 GB	2.6	13410	3.06x

2.3x OLAP - SAP BW4HANA
4th Gen Intel Xeon relative to 2nd Gen Intel Xeon

	SAP BW4H				
	CLX	ICX	SPR	Phase2 SPR/ICX	Phase2 SPR/CLX
Phase1 (seconds)	18,997	17,573	14,450		
Phase2 (QpH)	3,376	4,933	7,893	1.60	2.34
Phase3 (seconds)	123.02	129.35	134.49		
logical cores	112	160	240	1.50	2.14
TDP (W)	205	270	350		

4th Gen Xeon - SPR System Config

4th Gen Config : Tested by Intel on November 2022, 1-node, 2x Intel® Xeon® 8490H, E3 stepping, 60 cores, 80KB L1 cache and 2MB L2 cache per core, 112MB L3 cache per processor, HT On, Turbo On, SNC disabled, Total Memory 2048 GB (32 x 64GB 4800 MHz [run @ 4400 MHz]), BKC WW41->BIOS: EGSDCRB1.SYS.8901.P01.2209200243, ucode: 0xAB0000C0, OS: SLES15 SP4, kernel: 5.14.21-150400.22-default, HANA: 2.00.052.00.1599235305, NetWeaver: 7.50, Benchmark kit: 3.17, Score 7893 Queries/Hour

2nd Gen Xeon - CLX System Config

2nd Gen Config: Tested by Intel: 1-node, Wolf Pass; Processor: 2x Intel Xeon 8280L 28C, 2.7GHz, 205W; BIOS: SE5C620.86B.02.01.0013.121520200651; Microcode: 0x5003006; Memory: 1.5TB (24x64GB DDR4 2667 MT/s); OS SLE 15 SP2; Linux Kernel: 5.3.18-22-default
Score 3376 Queries/Hour

4th Gen Intel Xeon (SPR) of 7893 QpH divided by 2nd Gen Intel Xeon (CLX) score of 3376 QpH = 2.34X