



ORACLE
CloudWorld
SEPTEMBER 17 – 20, 2023 • LAS VEGAS

SAP Infrastructure Platforms

Oracle Technology Used by SAP Products

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SEPTEMBER 20, 2023 | PUBLIC

THE BEST RUN 

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Agenda

Infrastructure as a Service

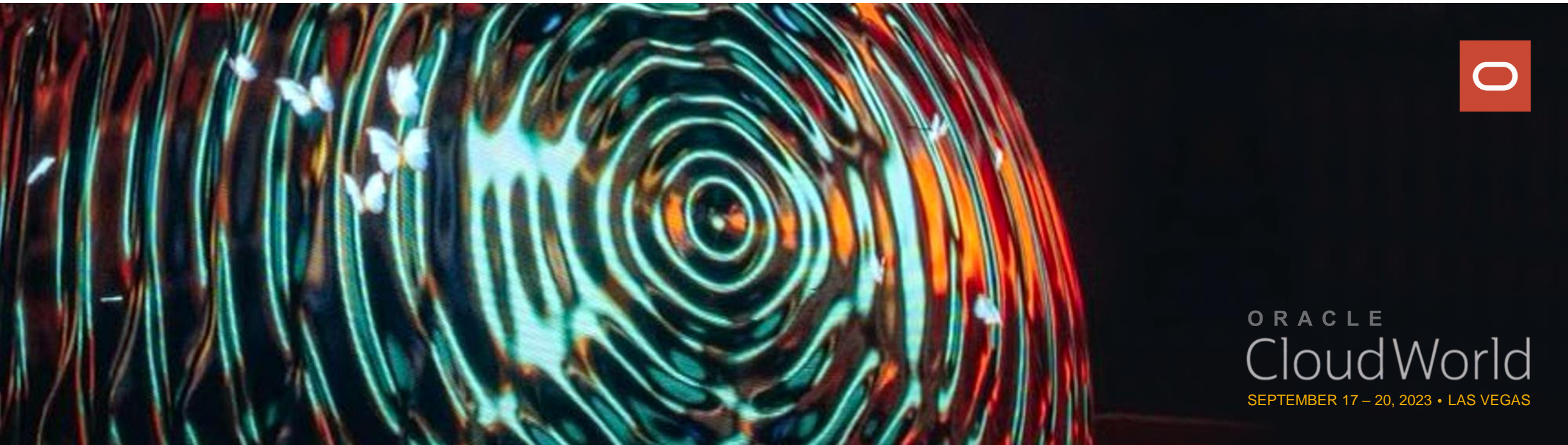
Engineered Systems

Database Support Timelines

Upcoming Tenant Architecture – Beyond Oracle Database 19c

Miscellaneous Topics

Infrastructure **as a Service**



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Infrastructure as a Service

Oracle Cloud Infrastructure Compute

RUN ENTERPRISE WORKLOADS IN THE CLOUD

Oracle Cloud Infrastructure Compute

is supported with SAP as follows:

- Oracle Database 19c
- All features/options¹ supported for SAP on premise are available with Oracle Cloud Infrastructure
- Oracle Linux 6, 7 and 8²

Supported SAP products (Excerpt):

- SAP NetWeaver 7.0X³, 7.X^{4,5} and products/solutions based hereupon
- SAP BusinessObjects BI platform
- SAP JCo, ...

For details see

- SAP Notes 2474949 and 2520061
- Knowledge Base Article 2650732
- Oracle technical briefs on www.oracle.com/sap/cloud

¹ except RAC, except ASM ² Oracle Linux 8 requires UEKR6 ³ AS ABAP only

⁴ Unicode only ⁵ Minimum SAP Host Agent 7.21 patch level 30 for Bare Metal and patch level 35 for Virtual Machine Shapes

Infrastructure as a Service

Oracle Cloud Infrastructure Compute

CERTIFIED VIRTUAL MACHINE SHAPES

Shape	OCPU	Memory	Database Storage	SAPS
VM.Standard.E4.Flex	$33 \leq N \leq 64$	$N * 16$ GB	1 PB Block Storage	$125,630 * N / 64$
VM.Standard.E4.Flex	$2 \leq N \leq 32$	$N * 16$ GB	1 PB Block Storage	$74,930 * N / 32$
VM.Standard.E3.Flex	$33 \leq N \leq 62$	$N * 16$ GB	1 PB Block Storage	$103,720 * N / 62$
VM.Standard.E3.Flex	$2 \leq N \leq 32$	$N * 16$ GB	1 PB Block Storage	$67,280 * N / 32$
VM.Standard3.Flex	$2 \leq N \leq 32$	$N * 16$ GB	1 PB Block Storage	$63,220 * N / 32$

Infrastructure as a Service

Oracle Cloud Infrastructure Compute

CERTIFIED BARE METAL MACHINE SHAPES ¹

Shape	OCPU	Memory	Database Storage	SAPS
BM.Standard.E4.128	128	2048 GB	1 PB Block Storage	258,650
BM.Standard.E3.128	128	2048 GB	1 PB Block Storage	119,020
BM.Standard3.64	64	1024 GB	1 PB Block Storage	147,680

¹ No support for any virtualization technology on Oracle Cloud Infrastructure Bare Metal Compute instances

Infrastructure as a Service

Oracle Database Exadata Cloud Service (ExaCS)

EXADATA DATABASE MACHINE IN THE ORACLE CLOUD

Oracle Database Exadata Cloud Service

Support for ExaCS X6 through X9M

- Oracle Database 19c
- All features/options supported for SAP on premise are available with Oracle ExaCS¹
 - including RAC
- Oracle Linux 7

Supported SAP products (Database only):

- SAP NetWeaver 7.0X², 7.X^{3,4} and products/solutions based hereupon
- SAP BusinessObjects BI platform 4.2 and above

For details see

- SAP Note 2614028
- Oracle technical briefs on www.oracle.com/sap/cloud

¹ Minimum ExaCS 17.4.2.2 ² AS ABAP only ³ Unicode only ⁴ Minimum SAP Host Agent 7.21 Patch Level 35

Infrastructure as a Service

Oracle Database Exadata Cloud Service (ExaCS)

SUPPORTED ORACLE EXA-CS SHAPES AND MACHINE TYPES (EXCERPT)

Shape	# Cores per Node	Memory	Database Storage	SAPS
Exadata.X9M/Half Rack X9M	8 ≤ <i>N</i> ≤ 504	5,560 GB	381 TB – 4 PB on Storage Servers	856,520 * <i>N</i> / 504
Exadata.X9M/Quarter Rack X9M	4 ≤ <i>N</i> ≤ 252	2,780 GB	190 TB – 4 PB on Storage Servers	444,370 * <i>N</i> / 252
Exadata.X9M (Elastic)	4 ≤ <i>N</i> ≤ 504	2,780 GB – 5,560 GB	190 TB – 4 PB on Storage Servers	214,130 * <i>N</i> / 126
Exadata.X8M/Half Rack X8M	16 ≤ <i>N</i> ≤ 200	5,560 GB	299 TB on Storage Servers	298,600 * <i>N</i> / 200
Exadata.X8M/Quarter Rack X8M	8 ≤ <i>N</i> ≤ 100	2,780 GB	149 TB on Storage Servers	149,300 * <i>N</i> / 100
Exadata.X8M (Elastic)	8 ≤ <i>N</i> ≤ 200	2,780 GB – 5,560 GB	149 TB – 3 PB on Storage Servers	74,650 * <i>N</i> / 50
Exadata Base System	8 ≤ <i>N</i> ≤ 48	720 GB	74 TB on Storage Servers	149,300 * <i>N</i> / 48

Infrastructure as a Service

Oracle Database Exadata Cloud@Customer (ExaCC)

EXADATA CLOUD SERVICE IN CUSTOMER DATA CENTER

Oracle Database Exadata Cloud@Customer

Support for ExaCC X8M Gen 2¹ up to X10M **NEW!**

- Oracle Database 19c
- All features/options supported for SAP on premise are available with Oracle ExaCC²
 - including RAC
- Oracle Linux 7 and 8³

Supported SAP products (Database only):

- SAP NetWeaver 7.0X⁴, 7.X^{5,6} and products/solutions based hereupon
- SAP BusinessObjects BI platform 4.2 and above

For details see

- SAP Note 2956661
- Oracle technical briefs on www.oracle.com/sap/cloud

¹ No support for ExaCC X6, X7, X8 and X8M Gen 1 ² Minimum ExaCC 19.4.3.3.0 ³ ExaCC X10M: Oracle Linux 8 only ⁴ AS ABAP only

⁵ No non-Unicode SAP instance on ExaCC nor on Oracle Linux ⁶ Minimum SAP Host Agent 7.21 Patch Level 35

Infrastructure as a Service

Oracle Database Exadata Cloud@Customer (ExaCC)

SUPPORTED ORACLE EXA-CC SHAPES AND MACHINE TYPES

Shape	# Cores per Node	Memory	Database Storage
ExadataCC.X10M (· / -L / -XL)	4 ≤ N ≤ 6.080	1,390 GB / 2,090 GB / 2,800 GB ¹	240 TB – 5,120 TB on Storage Servers
ExadataCC.FullX9M.496	16 ≤ N ≤ 496	11,120 GB	769 TB on Storage Servers
ExadataCC.HalfX9M.248	8 ≤ N ≤ 248	5,560 GB	384 TB on Storage Servers
ExadataCC.QuarterX9M.124	4 ≤ N ≤ 124	2,780 GB	192 TB on Storage Servers
ExadataCC.BaseX9M.48	4 ≤ N ≤ 48	656 GB	74 TB on Storage Servers
ExadataCC.FullX8M.400	32 ≤ N ≤ 400	11,120 GB	598 TB on Storage Servers
ExadataCC.HalfX8M.200	16 ≤ N ≤ 200	5,560 GB	299 TB on Storage Servers
ExadataCC.QuarterX8M.100	8 ≤ N ≤ 100	2,780 GB	149 TB on Storage Servers
ExadataCC.BaseX8M.48	8 ≤ N ≤ 48	656 GB	74 TB on Storage Servers

¹ Per node. Minimum 2 nodes, up to 32 nodes

Infrastructure as a Service

Microsoft Azure

Microsoft Azure

is supported with SAP as follows:

- Oracle Database 19c
- Single Instance only (no RAC)

Supported operating system versions:

- Microsoft Windows Server
 - 2012 R2
 - 2016, 2019 and 2022
- Oracle Linux 7 and 8
 - Including Oracle ASM support

For details see

- SAP Notes 1928533 and 2039619

Infrastructure as a Service

Amazon Web Services (AWS)

Amazon Web Services

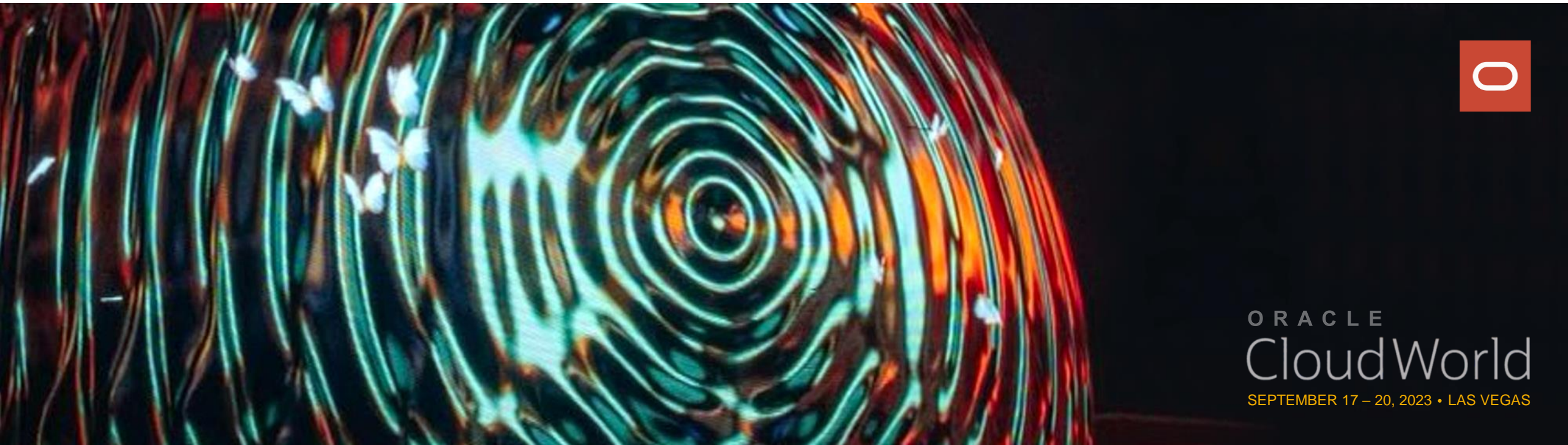
are supported with SAP as follows:

- Oracle Database 19c
- Oracle Linux 8
- Unicode only
- Amazon Web Services EC2 only
 - No support for AWS RDS
- Single Instance only (no RAC)

For details see

- SAP Notes 2358420 and 1656099

Engineered **Systems**



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Engineered Systems

Oracle Exadata, ODA and OPCA

CLUSTERED DATABASE AND STORAGE SERVER

Oracle Exadata Database Machine

Support for X2-2|8 through X10M **NEW!**

- X10M certified for SAP in August 2023
- SAP Note 1590515
- Oracle Exadata technical briefs on www.oracle.com/sap/cloud

TWO-NODE CLUSTERED DATABASE SERVER

Oracle Database Appliance

Support for V1, X3-2 through X9-2 **NEW!**

- X9 certified for SAP in July 2023
- SAP Notes 2664704, 2929109 and 3250840
- Oracle ODA for technical briefs on www.oracle.com/sap/cloud

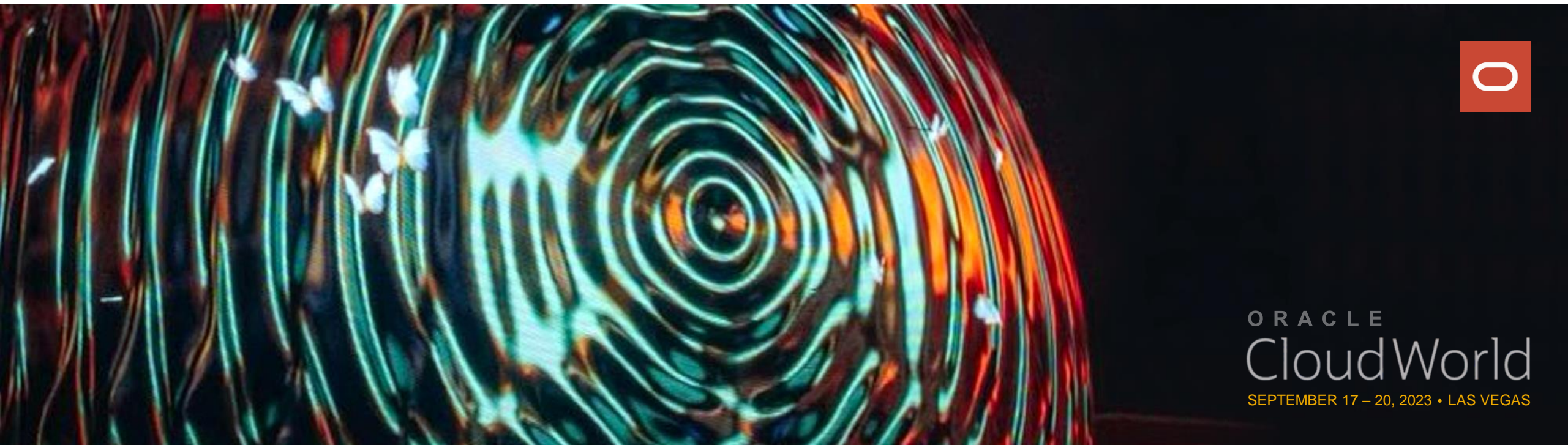
ENGINEERED SYSTEM DESIGNED FOR VIRTUALIZATION

Oracle Private Cloud Appliance

Support for X3-2 through X8-2

- X8 certified for SAP in October 2020
- SAP Note 2052912

Database **Support Timelines**



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Database Support Timelines

Oracle Database 12c Release 1

End of Extended Support!

SUPPORT TIMELINE ORACLE DATABASE 12.1.0.2

Extended Support

Start	1 August 2019
End	31 July 2022

- Extended support ended 31 July 2022!
- Sustaining Support as of 1 August 2022
 - No more patches nor SBPs
 - No support for new OS versions

Database Support Timelines

Oracle Database 19c¹

½ Year of Premier Support left!

SUPPORT TIMELINE ORACLE DATABASE 19c

Premier Support

Start	March 2019
End	30 April 2024

Extended Support

Start	1 May 2024
End	30 April 2027

- Oracle 19c is last release to support Solaris x64!²

¹ Oracle 19c is a *Long Term Support Release* ² See SAP Hot News 3366854

Database Support Timelines

Oracle Database 19c Extended Support

Two Phases of 19c Extended Support

SUPPORT TIMELINE ORACLE DATABASE 19c – EXTENDED SUPPORT

Extended Support Phases

Start	1 May 2024
Add' fees waived until	30 April 2026
End	30 April 2027

For details see

- SAP Note 3301393

PHASE 1

Oracle 19c ES fees waived for first two years

- SAP Runtime **AND** Oracle Direct customers:
 - Automatic participation

PHASE 2

1 year of extra-charged Extended Support¹

- SAP Runtime customers:
 - Official request necessary
 - SAP online order form available in Q1CY2026
- Oracle Direct customers:
 - Will need to apply to Oracle

¹ CAUTION: In Extended Support phase, download of SAP Bundle Patches (SBPs) from SAP Software Marketplace is **prohibited** without a valid Oracle ES contract!

Database Support Timelines

SAP Certification Roadmap for Oracle Databases 19c and beyond

SAP certification of a new Oracle database release...

- ...starts with availability on **all** on-premise OS platforms supported by SAP¹
- ...is planned within 6 months after the on-premise platform availability
- ...will cover all platforms²

For details see

- SAP Note 2606828

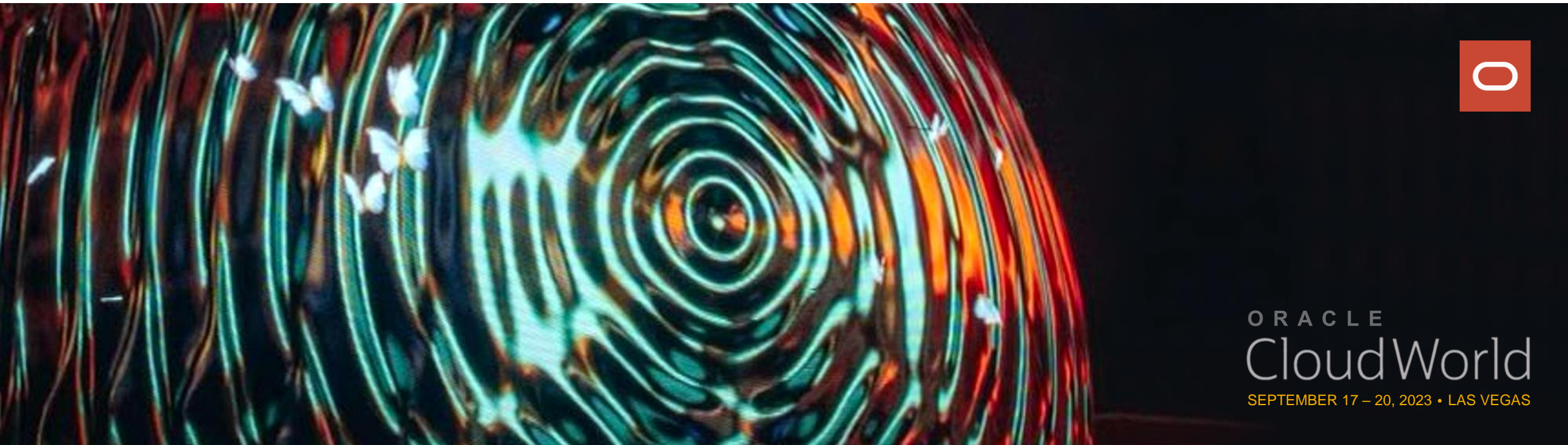
ORACLE DATABASE AVAILABILITY TIMELINE

Oracle Database Release	Availability by Oracle for On-Premise Platforms	SAP Certification
Oracle Database 19c	June 2019 Release Update (19.3)	December 2019 (19.5)
Oracle Database 23c ³	Q2CY2024 (planned)	H2CY2024 (planned)

¹ Linux, Windows, Solaris, AIX, HP-UX ² Oracle Cloud Infrastructure, Engineered Systems, all on-premise platforms ³ See SAP Note 2799958

Upcoming Tenant Architecture

Beyond Oracle Database 19c



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Upcoming Tenant Architecture

Beyond Oracle Database 19c

Non-container architecture no longer available

Oracle Multitenant architecture mandatory

- Non-container database becomes Single Tenant database
- Existing databases must be migrated¹

New Installations

- SWPM automatically creates Single Tenant

Existing Installations

- Migration to Single Tenant **must** happen in 19c²
 - Based on Oracle AutoUpgrade tool
 - One-step migration within database upgrade to 23c supported
- 19c **mandatory** stage for upgrade to any version beyond

¹ ETA Q2 2024 ² No simultaneous migration from Single Instance to RAC, File System to ASM, and vice versa. Manual migration supported.

Upcoming Tenant Architecture

Beyond Oracle Database 19c

Operating System User Concepts

Switch to Multitenant requires new concept:

- Deprecated user concept “SAP Classic” no longer supported
- Tenant architecture requires SAP user concept “Oracle Standard”
 - Software owner is ‘oracle’

For details see

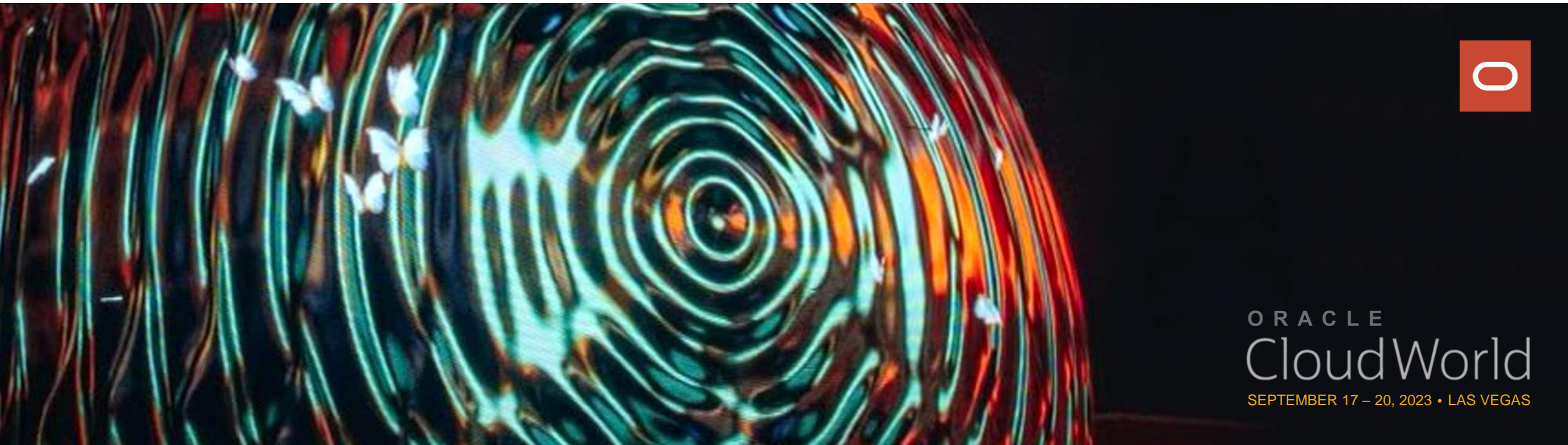
- SAP Note 1915323

Licensing

Three tenants included for free

- CAUTION: Oracle Multitenant option is cost-liable
- No Multitenant option required for up to **3** tenants per container database

Miscellaneous Topics



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Oracle Database

Oracle Application Continuity (AC)

EARLY-CUSTOMER AVAILABILITY

Oracle Application Continuity

Hides Interruptions in Data Tier

- Intended to mask planned maintenance activities only, on following levels:
 - Oracle database
 - operating system
 - system software and hardware
- Automatic replay of interrupted database requests
 - No data loss!
 - No data inconsistency!

Prerequisites

- SAP NetWeaver Application Server 7.50¹
 - SAP Kernel 7.53
 - Special version of SAP DBSL for Oracle
- SAP Oracle Database Instant Client
- Oracle Real Application Clusters (RAC) 19c²

For details see

- SAP Note 3234354

¹ Both SAP NW AS ABAP and AS Java ² on Linux platform (Exadata preferred)

SAP NW Application Server ABAP/Java

SAP Kernel 7.54

SAP Kernel 7.54 now available

To replace older kernels 7.40 through 7.53

- 7.54 is a Downward Compatible Kernel

MOTIVATION

- SAP able to use more recent OS and compiler versions in 7.54
- Minimum OS and DB versions have been raised accordingly!

KERNEL 7.54 ON ORACLE

- Oracle minimum version for 7.54 is **19.5**¹

For details see

- SAP Product Availability Matrix
- SAP Note 3156866

¹ Oracle minimum client version is 19, too.

Social Media

SAP on Oracle Community

SAP on Oracle Community Page

Find news, discussions and resources related to SAP on Oracle at

community.sap.com/topics/oracle

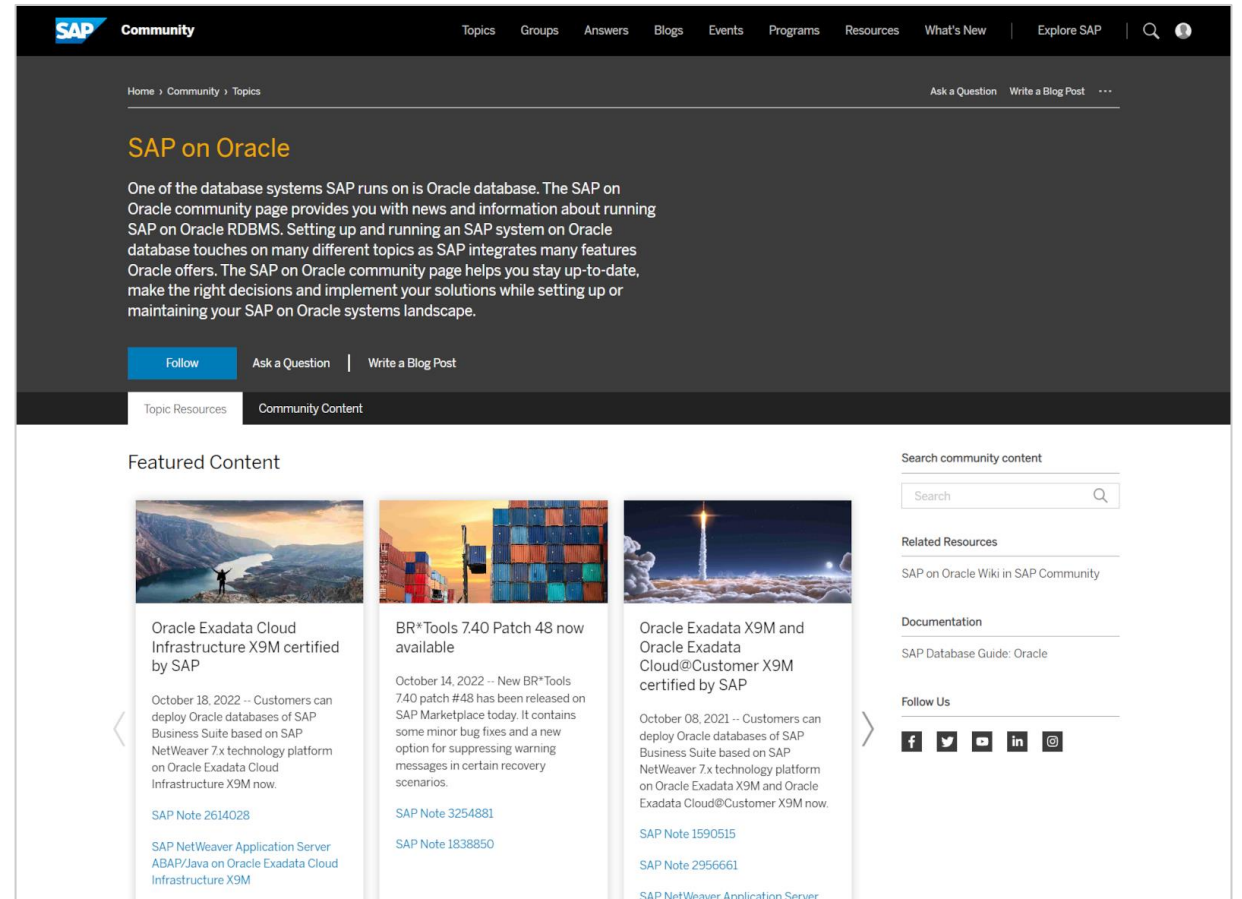
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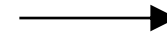
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THE SAP ON ORACLE DEVELOPMENT UPDATE

We'd strongly appreciate your participation
in the session survey.

— Thank you.



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