



How to make SAP NetWeaver run even better with Oracle Database

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SAP SE

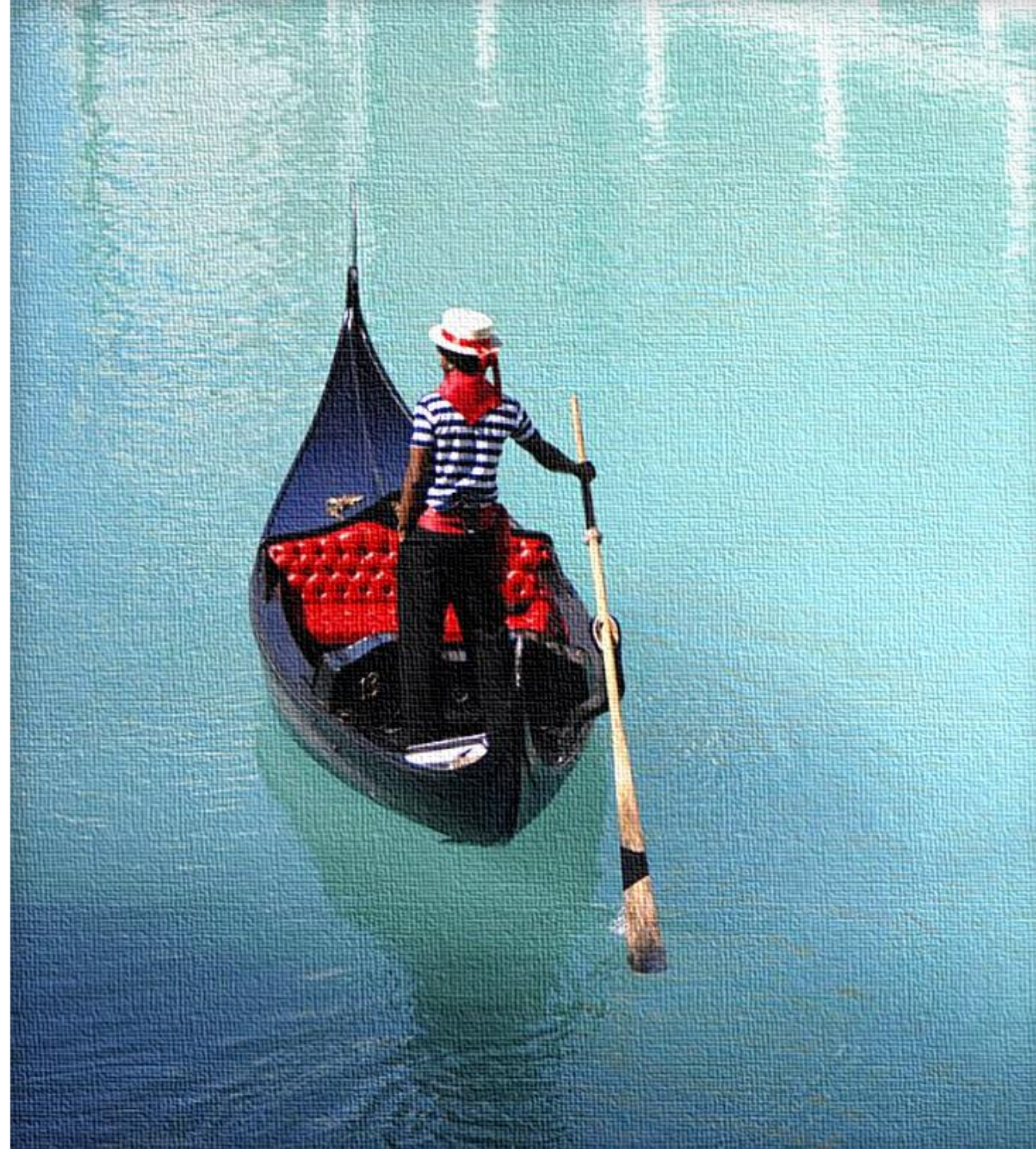
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ORACLE CLOUD WORLD '24
SEPTEMBER 09 – 12, 2024
LAS VEGAS, NV



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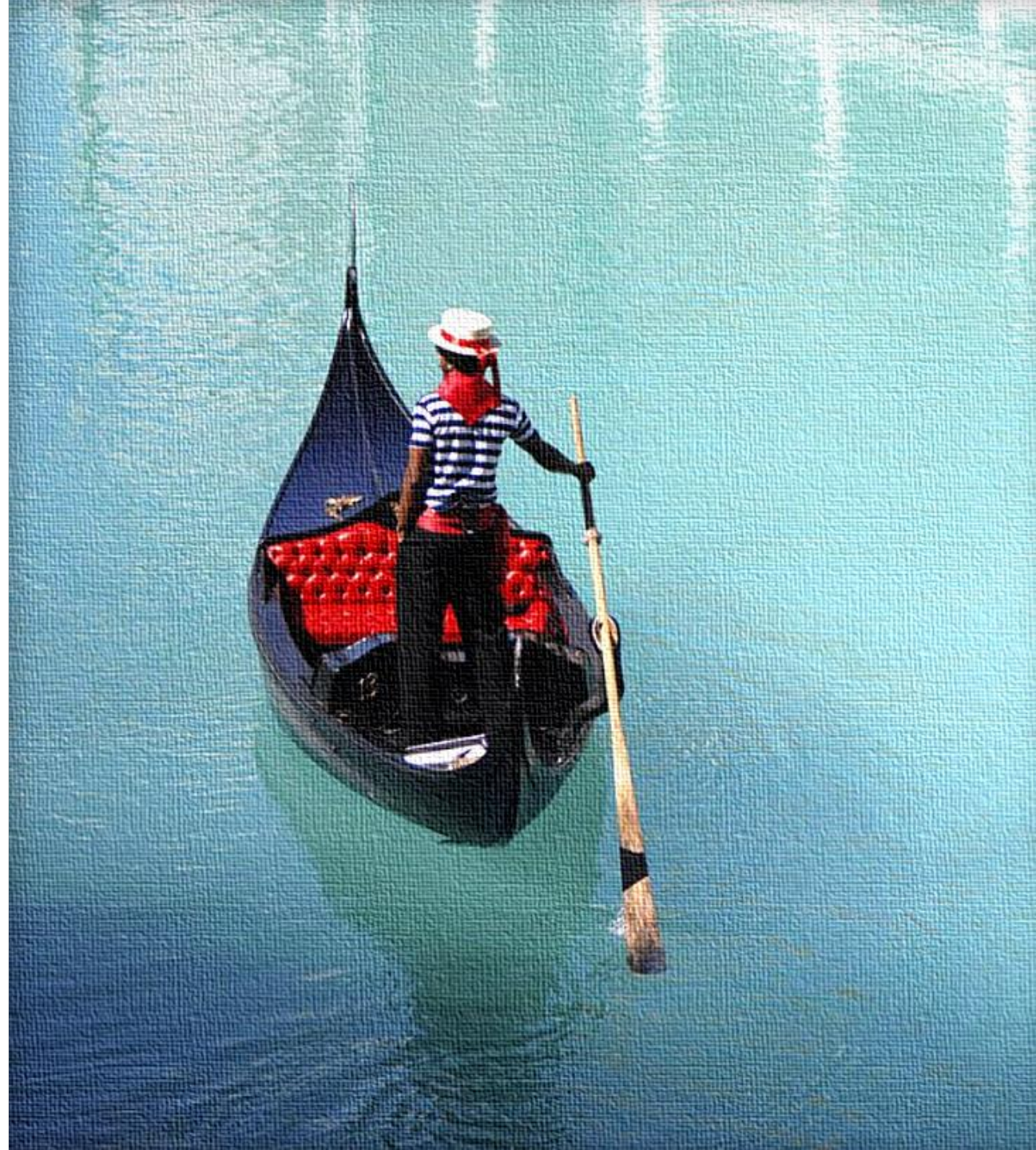


CHAPTER 1

Oracle Database 23ai



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SAP Certification Roadmap

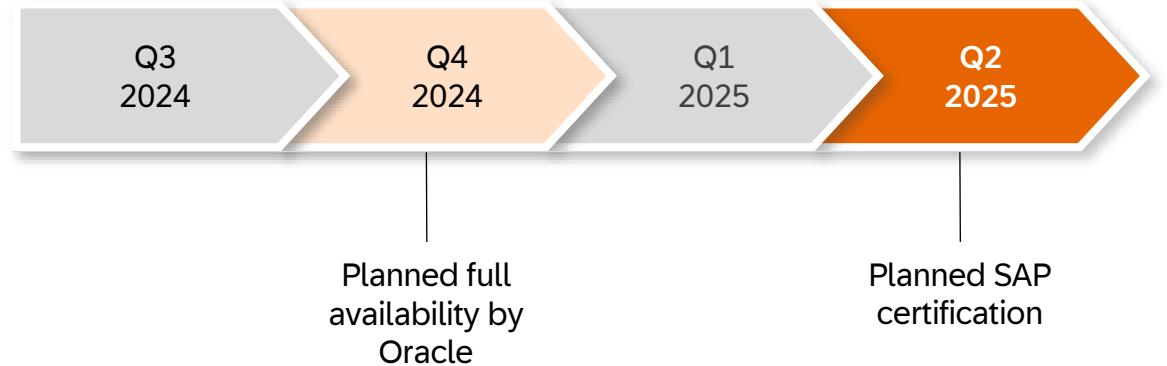
SAP certification for Oracle Database 23ai...

- ...starts with availability from Oracle on ALL on-premise OS platforms supported by SAP¹
 - Full availability is planned for Q4CY2024
- ...is planned within 6 months after the on-premise platform availability
 - Certification is planned for Q2CY2025
- ...will cover all platforms²

REGULARLY CHECK OUR ROADMAP NOTES FOR UPDATES:

- SAP 23ai Roadmap Notes 2799958 and 2606828

ORACLE DATABASE 23ai CERTIFICATION ROADMAP



¹ Linux, Windows, Solaris SPARC, AIX, HP-UX ² Oracle Cloud Infrastructure, Engineered Systems, supported IaaS platforms, on-premise platforms

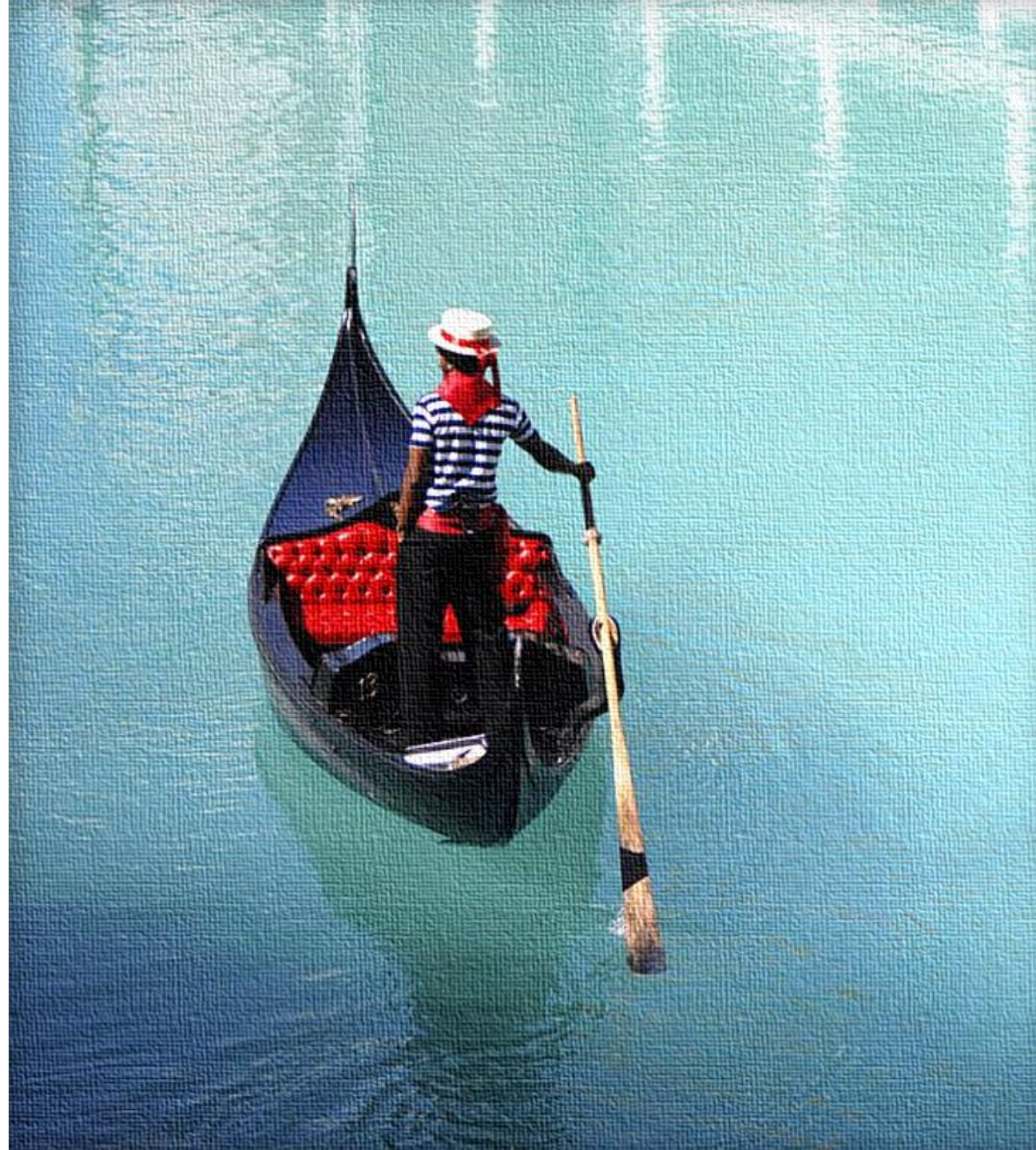


CHAPTER 2

Infrastructure as a Service



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Oracle Cloud Infrastructure Compute (OCI)

RUN ENTERPRISE WORKLOADS IN THE CLOUD

Oracle Cloud Infrastructure Compute

is supported as follows:

- Oracle Database 19c
- All features/options¹ supported for SAP on premise are available with OCI
- Oracle Linux 6 through 9²

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

Oracle Cloud Infrastructure Compute (OCI)

CERTIFIED VIRTUAL MACHINE SHAPES

Shape	OCPU	Memory	Database Storage	SAPS
VM.Standard.E5.Flex	$2 \leq N \leq 94$	$N * 16 \text{ GB}^1$	512 TB Block Storage	$274,320 * N / 94$
VM.Standard.E4.Flex	$33 \leq N \leq 64$	$N * 16 \text{ GB}$	512 TB Block Storage	$125,630 * N / 64$
VM.Standard.E4.Flex	$2 \leq N \leq 32$	$N * 16 \text{ GB}$	512 TB Block Storage	$74,930 * N / 32$

CERTIFIED BARE METAL MACHINE SHAPES ²

Shape	OCPU	Memory	Database Storage	SAPS
BM.Standard.E5.192	192	2304 GB	1 PB Block Storage	559,580
BM.Standard.E4.128	128	2048 GB	1 PB Block Storage	258,650
BM.Standard3.64	64	1024 GB	1 PB Block Storage	147,680

¹ max. 1,049 GB ² No support for any virtualization technology on Oracle Cloud Infrastructure Bare Metal Compute instances

Oracle Database Exadata Cloud Service (ExaCS)

EXADATA DATABASE MACHINE IN THE ORACLE CLOUD

Oracle Database Exadata Cloud Service

Support for ExaCS 6 through X9M

- Oracle Database 19c
- All features/options supported for SAP on premise are available with ExaCS¹
 - including RAC
- Oracle Linux 8

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

Oracle Database Exadata Cloud Service (ExaCS)

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

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

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

- Oracle Database 19c
- All features/options supported for SAP on premise are available with 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 X8 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

Oracle Database Exadata Cloud@Customer (ExaCC)

SUPPORTED ORACLE EXA-CC SHAPES AND MACHINE TYPES

Shape	Number of Cores	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

Oracle Database@Azure

Oracle Database@Azure with SAP will provide...

- Oracle Database Exadata Cloud Service
 - physically located in Microsoft Azure data centers
- SAP NetWeaver products running on Azure VMs

AVAILABLE OPERATING SYSTEM VERSIONS

- Microsoft Azure VMs:
 - Oracle Linux 8 and 9
- Oracle Database Exadata Cloud Service:
 - Oracle Linux 8

CURRENT STATUS

- Successfully tested
- Awaiting official SAP certification and support

FOR DETAILS SEE

- Oracle Database@Azure technical brief on www.oracle.com/sap/cloud¹

¹ [SAP NetWeaver Application Server ABAP/Java with Oracle Database@Azure](#)

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, 8 and 9
 - Including Oracle ASM support

FOR DETAILS SEE

- SAP Notes 1928533 and 2039619

Amazon Web Services (AWS)

Amazon Web Services

are supported with SAP as follows:

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

SUPPORTED OPERATING SYSTEM VERSIONS

- Oracle Linux 8 and 9

FOR DETAILS SEE

- SAP Notes 2358420 and 1656099

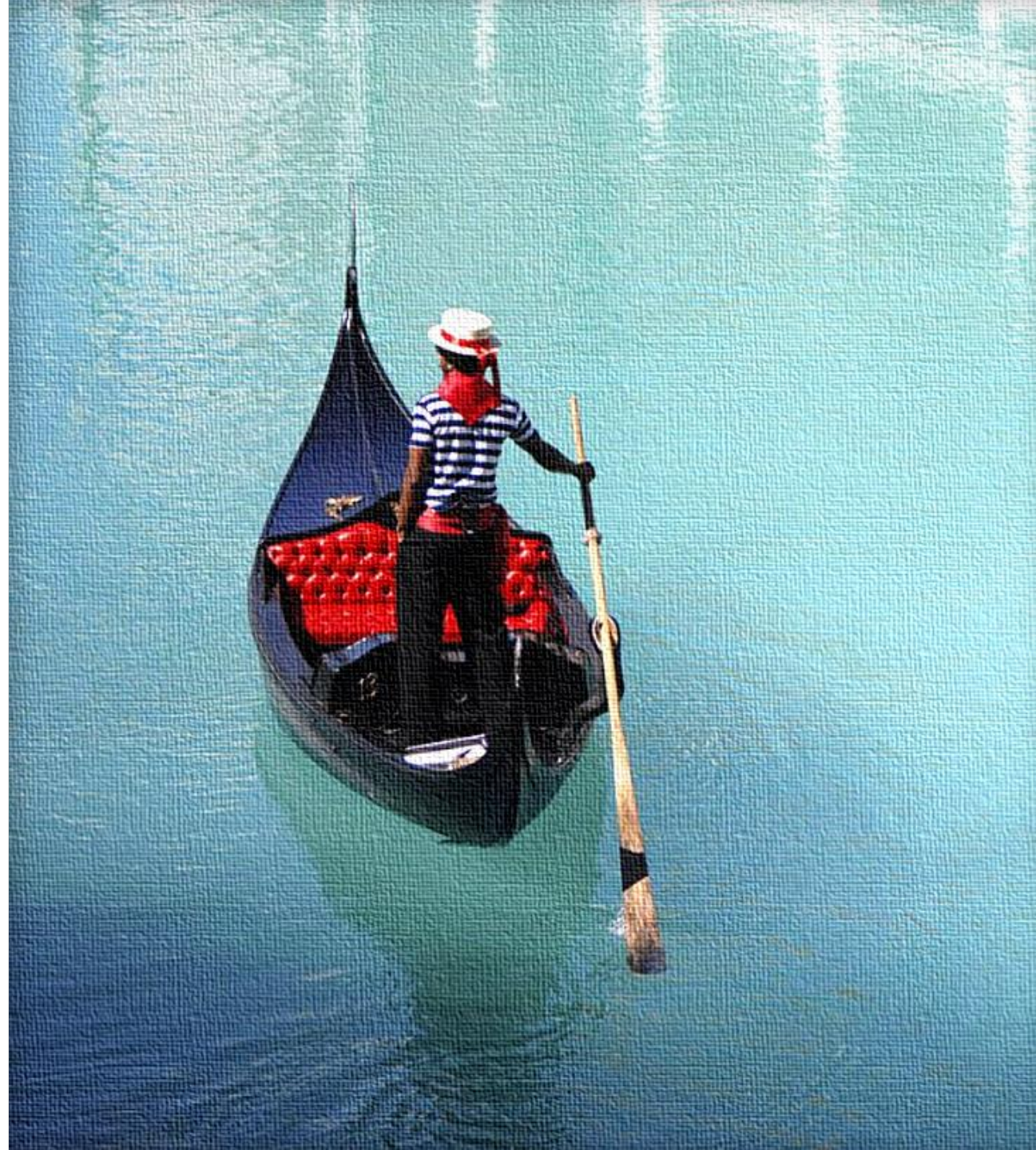


CHAPTER 3

Engineered Systems



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ENGINEERED SYSTEMS

Exadata

CLUSTERED DATABASE AND STORAGE SERVER

Oracle Exadata Database Machine Support for X2-2|8 through X10M

- X10M certified for SAP in August 2023

FOR DETAILS SEE

- SAP Note 1590515
- Oracle Exadata technical briefs on www.oracle.com/sap/cloud

ENGINEERED SYSTEMS

Exalogic

CLUSTERED APPLICATION SERVER

Oracle Exalogic Support for X2-2 through X5-2

- Only in combination with Exadata

FOR DETAILS SEE

- SAP Note 1617188

ENGINEERED SYSTEMS

Database Appliance (ODA)

TWO-NODE CLUSTERED DATABASE SERVER

Oracle Database Appliance

Support for V1, X3-2 through X10^{NEW!}

- X10 certified for SAP in August 2024

FOR DETAILS SEE

- SAP Notes 2664704, 2929109, 3250840 and 3457845
- Oracle ODA technical briefs on www.oracle.com/sap/cloud

ENGINEERED SYSTEMS

Private Cloud Appliance (OPCA)

ENGINEERED SYSTEM DESIGNED FOR VIRZUALIZATION

Oracle Private Cloud Appliance

Support for X3-2 through X8-2

- X8 certified for SAP in October 2020

FOR DETAILS SEE

- SAP Note 2052912

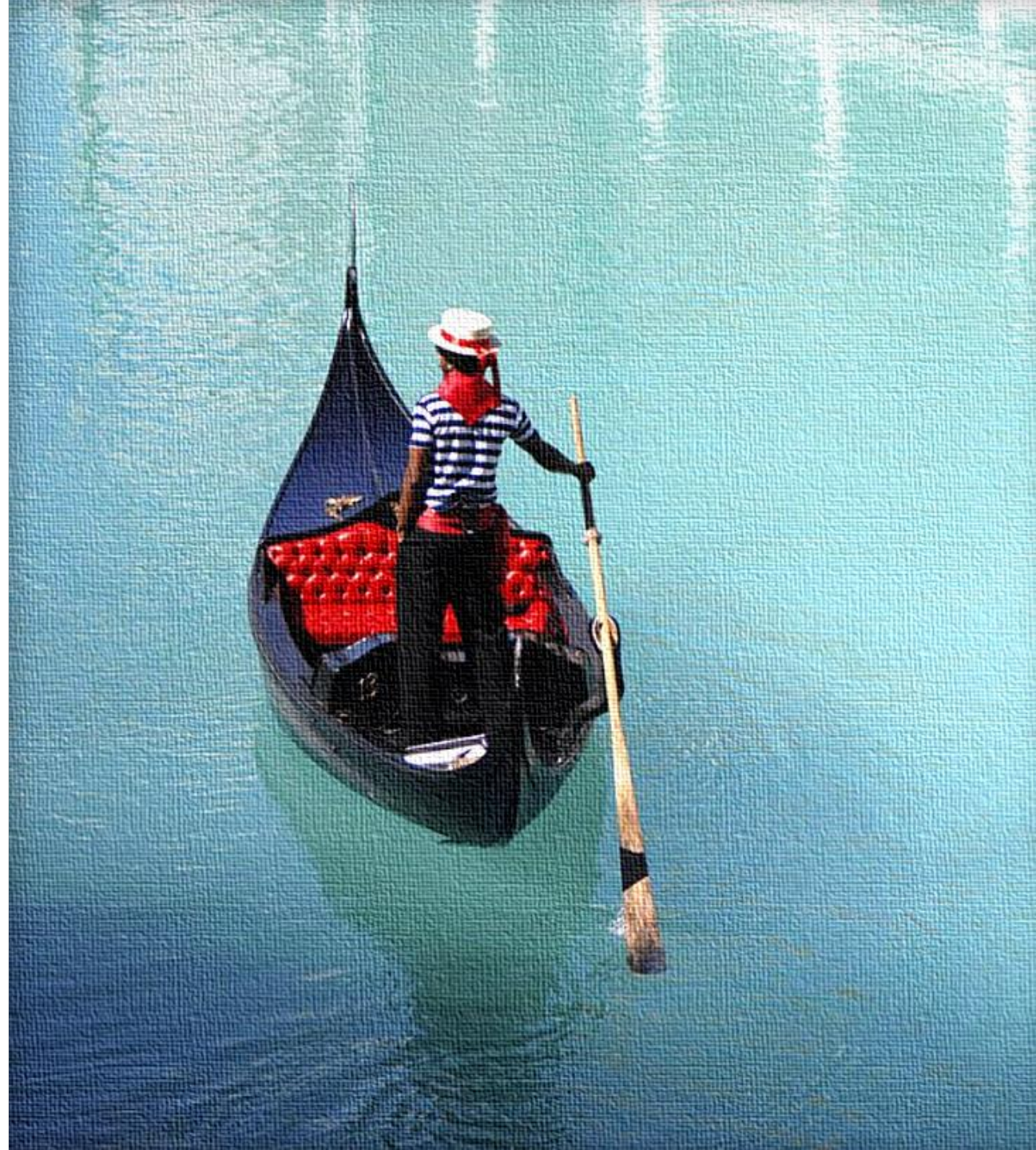


CHAPTER 4

Database Support Timelines



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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

Oracle Database 19c¹

Premier Support extended into 2026!

SUPPORT TIMELINE ORACLE DATABASE 19c

Premier Support

Start	March 2019
End	30 April 2026

Extended Support²

Start	1 May 2026
End	30 April 2027

- Oracle 19c is last release to support Solaris x64!³

¹ Oracle 19c is a Long Term Support Release

² This is one year of extra-charged ES

³ See SAP Hot News 3366854

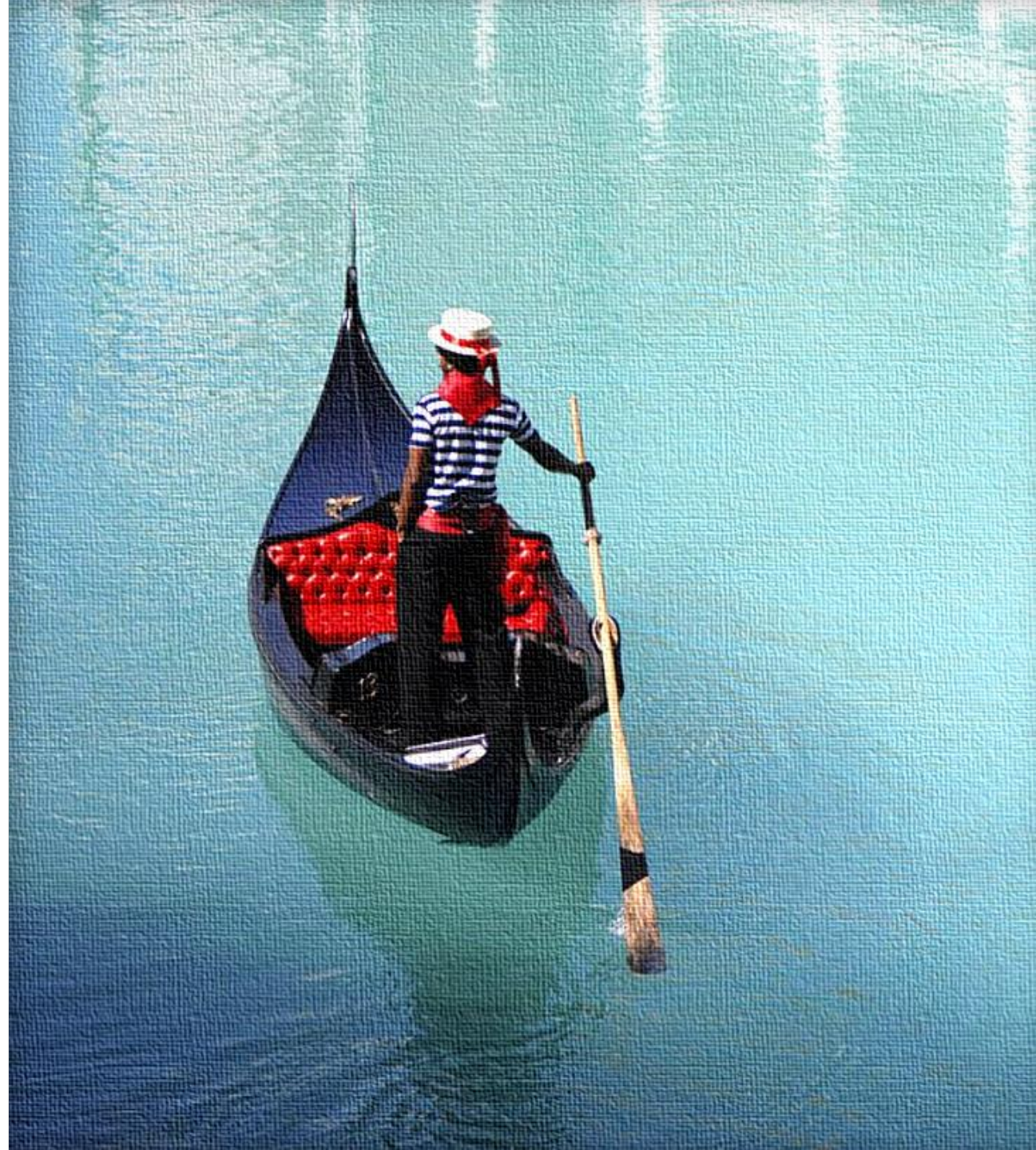


CHAPTER 5

Beyond Oracle Database 19c



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Upcoming Tenant Architecture

Non-container architecture no longer available

Oracle Multitenant architecture mandatory

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

NEW INSTALLATIONS

- SWPM automatically creates Single Tenant

EXISTING INSTALLATIONS

- Migration to Single Tenant must happen in 19c¹
 - Based on Oracle AutoUpgrade Tool
 - One-step migration within database upgrade to 23ai supported
- 19c **mandatory** stage for upgrade to any version beyond

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

Upcoming Tenant Architecture

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

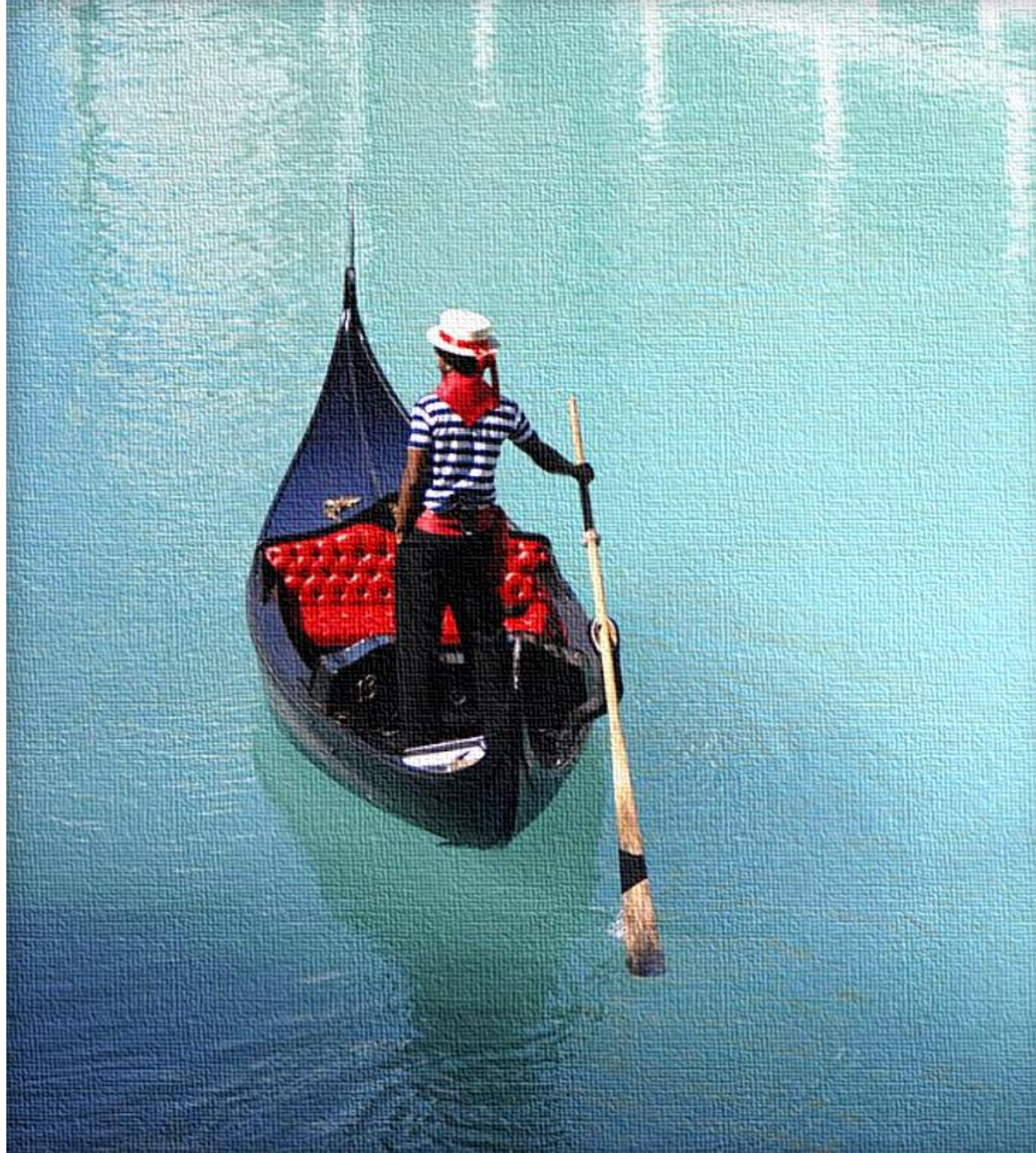


CHAPTER 6

Miscellaneous Topics



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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 Kernels 7.53 and 7.54
 - Special version of SAP DBSL for Oracle
- SAP Oracle Database Instant Client
- Oracle Real Application Clusters 19c²

FOR DETAILS SEE

- SAP Note 3234354

¹ Both SAP NetWeaver AS ABAP and AS Java ² On Linux platform (Exadata preferred)

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

New Oracle Software Download Policy

HEADS-UP FOR ORACLE DIRECT CUSTOMERS

Downloads from SWDC may get blocked!

Starting March 1, 2024

- Affects all Oracle software
- including SAP Bundle Patches!

FOR DETAILS SEE

- SAP Hot News Note 3406108

WHICH CUSTOMER LICENSES ARE AFFECTED?

- Any SAP Runtime License
switched to Oracle Full Use License
after June 1, 2022
- Including all future switches!

HOW TO RESOLVE?

- Re-submit your
Oracle Customer Support Identifier (CSI)
number to SAP.

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

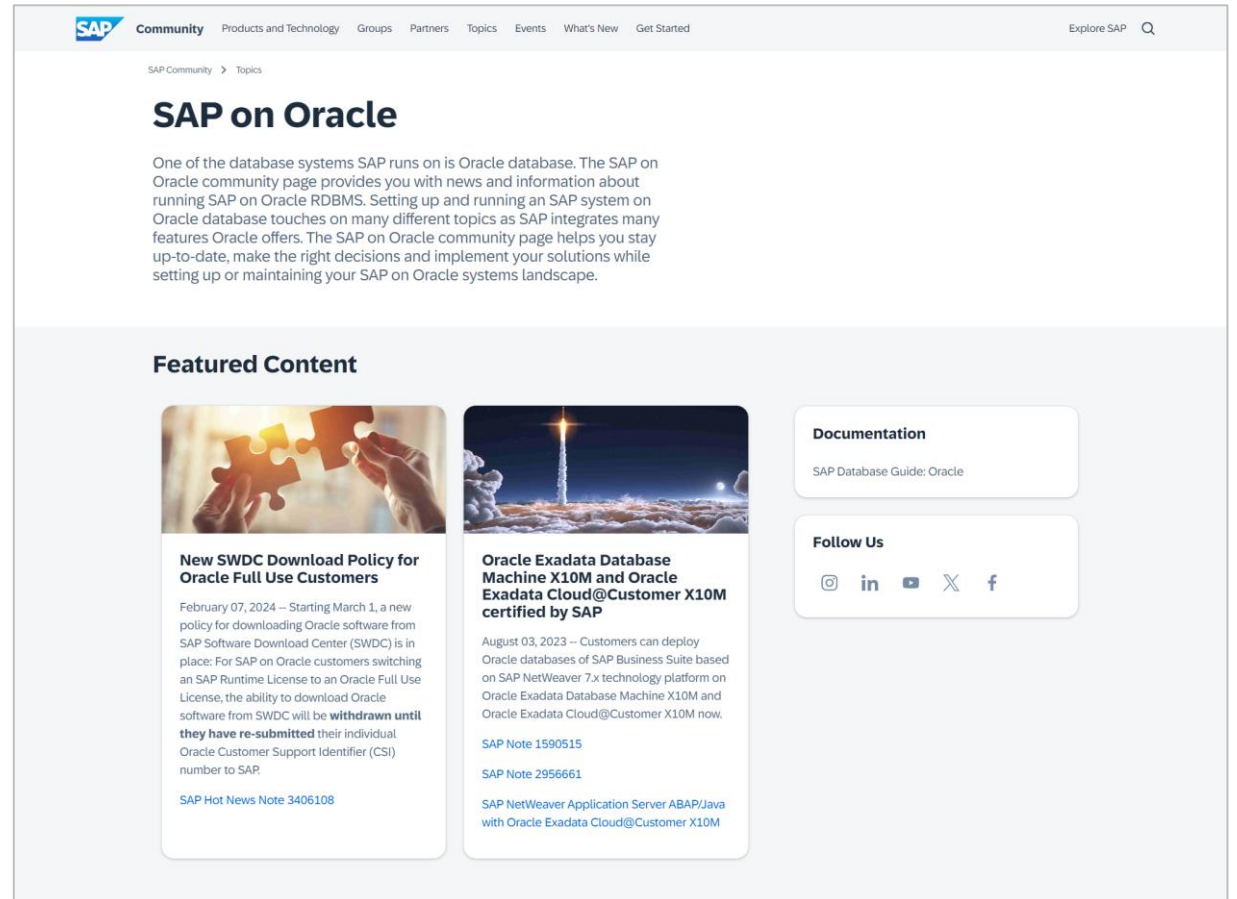
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Thank you.

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