



SAP on Oracle Development Update

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CUSTOMER



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Agenda

SAP on Oracle Database 11g

SAP on Oracle Database 12c

SAP on Oracle Database 12c
Oracle Multitenant

SAP NW Business Intelligence
Flat InfoCubes

Engineered Systems Update

Infrastructure as a Service
IaaS Update

Miscellaneous Topics

SAP on Oracle Database 11g



SAP on Oracle Database 11g **Extended Support**

Oracle Database 11g Extended Support Support Dates:

Start	February 1, 2015
Add' fees waived until ¹	December 31, 2018
End	December 31, 2020

¹ Order information for remaining charged period in upcoming note 2205728
(expected to be released in early Q4/2018)

For details see

- SAP Note 2098258

Oracle 11g ES Fees Waived for 3+ Years No extra charges until 31 December 2018

- Automatic participation
- Supported releases: 11.2.0.4¹
May 2017 SBP is most recent and contains PSU 170418 for 11.2.0.4

¹ CAUTION: Oracle 11.2.0.3 left Oracle support end of August 2015

SAP on Oracle Database 12c



SAP on Oracle Database 12c

Certification

Oracle Database 12c Release 1 (12.1)

Certified for Business Suite based on SAP NetWeaver starting 31 March 2015

- Including:
 - Oracle Database 12c
 - Oracle Grid Infrastructure 12c¹
 - Oracle Real Application Clusters (RAC) 12c

Minimum Requirements

- Oracle Database 12c Release 12.1.0.2 with initial SAP Bundle Patch (12.1.0.2.2)
- SAP Kernels 7.21_EXT or 7.4

For details see

- SAP Notes 2133079 and 1914631

¹ Support for both RDBMS 11.2.0.4 and 12.1.0.2, see SAP Note 1677978

SAP on Oracle Database 12c Supported Releases | Timeline

Releases

Support for Oracle Database 12.1.0.2

- 1st and final patch set for Oracle 12.1
- May 2017 SBP is most recent
 - contains PSU 170418 for 12.1.0.2¹

For details see

- SAP Note 1915313

Timeline

Oracle Database 12.1

Premier Support

Start	March 31, 2015
End	July 31, 2018

Extended Support

Start	August 1, 2018
Add' fees waived until	July 31, 2019
End	July 31, 2021

¹ cmp. SAP Note 2275604 for the recent changes in Oracle patch numbering

SAP on Oracle Database 12c

Products Support

The following SAP products are certified with Oracle Database 12.1:¹

See the SAP Product Availability Matrix (PAM) for product versions released with Oracle 12c

SAP NetWeaver 7.0, 7.1, 7.3, 7.4, 7.5

SAP BW 7.0/7.0X, 7.1X, 7.20, 7.3X, 7.4, 7.5

SAP ERP 6.0

SAP CRM 7.0

SAP SCM 7.0

SAP SRM 7.0

Banking Services from SAP 6.0, 7.0, 8.0, 9.0

SAP Solution Manager 7.1, 7.2

SAP NW CE 7.1, 7.20

SAP NW PI 7.1

SAP LVM 2.1 and higher

SAP MDM 7.1 SP15

¹ including all corresponding EhPs

SAP on Oracle Database 12c

BR*Tools 7.40

Oracle 12c Option/Feature	Supported from BR*Tools 7.40 PL	SAP Note
Move Data File Online	14	2087004
Online Move Partition	“	“
Support for Advanced Index Compression	“	“
Compression of tables with > 255 columns	“	“
Reorganization of tables with long names	“	“
Oracle Wallet in ASM	“	“
Oracle Database In-Memory	17	2213142
Oracle ILM/ADO	19	2254836
Oracle Multitenant	30	2471317

Oracle 12.2



SAP on Oracle Database 12c

SAP on Oracle 12.2.0.1

Oracle 12.2.0.1 released on all OS platforms

Released by Oracle since April 2017

SAP certification to be based on October 2017 PSU

Planned for end Q4/2017

- SAP NetWeaver 7.X based product scope

SAP on Oracle Database

New Oracle Release Strategy

Oracle is switching to yearly release cycle

One major database release per year

- Feature Releases
- Version naming based on release year (detailed naming yet unknown)
- Oracle 12.2.0.1 is last conventionally named release

Database Bundle Patches to become “Release Updates”

Patch Delivery in “Release Updates (RUs)” and “Release Update Revisions (RURs)”

- For fixes only
- All new features to ship in major releases

Cloud First

On-Premise release some months later

SAP on Oracle Database 12c

Notes & Documentation

Entry Notes

- 2133079 Oracle Database 12c: Integration in SAP Environment
- 1914631 Central Technical Note for Oracle Database 12c Release 1 (12.1)
- 1915313 Current Patch Set for Oracle Database 12c Release 1 (12.1)

Quarterly Updated

Check out regularly

- 1915316 Database Patches for Oracle 12.1.0.2
- 1888485 Database Parameter for Oracle 12.1.0.2

Features

- 2138262 Oracle Database 12c Advanced Compression for SAP Systems
- 2178980 Using Oracle Database In-Memory with SAP NetWeaver based Products
- 2254866 Using Oracle Database 12c Advanced Data Optimization with SAP NetWeaver
- 2336881 Using Oracle Multitenant with SAP NetWeaver based Products

Tools

- 2087004 BR*Tools Support for Oracle 12c
- 2213142 Corrections in BR*Tools 7.40 Patch 17¹
- 2254836 BR*Tools Support for Oracle ADO/ILM
- 2333995 BR*Tools Support for Oracle Multitenant Database

¹ Introducing Oracle In-Memory support

SAP on Oracle Database 12c

Notes & Documentation

Installation and Upgrade

- 1915302 Database Software 12.1.0.2 Installation on Windows
- 1915301 Database Software 12.1.0.2 Installation on Unix
- 1915299 Troubleshooting Software Installation for 12.1.0.2

Upgrade Guides

Oracle 12.1 Database Upgrade:

service.sap.com/instguides

- Database Upgrades
 - Oracle

White Papers

- Real Application Clusters (RAC)
 - Upgrade of SAP NetWeaver Installation to Oracle Grid Infrastructure 12.1.0.2 with Oracle Real Application Clusters 12c Release 1
 - Providing High Availability for SAP Resources with Oracle Clusterware 11g Release 2 and Clusterware 12c Release 1
- Exadata
 - Using SAP NetWeaver with Oracle Database 12c on Oracle Exadata
- In-Memory
 - Using SAP NetWeaver with Oracle Database In-Memory
- Advanced Data Optimization
 - Using SAP NetWeaver with Oracle Database 12c Automatic Data Optimization and Information Lifecycle Management

SAP on Oracle Database 12c

Oracle **Multitenant**



Oracle Multitenant Prerequisites

Oracle Multitenant

Certified for SAP since February 2017

Minimum Requirements:

- Oracle Database 12c Release 12.1.0.2¹
- SAP NetWeaver 7.40 with kernel 7.45² patch 210
- SWPM 1.0 SP19, SUM 1.0 SP19³
- BR*Tools 7.40 Patch 30
- SAP notes to apply

For details see

- SAP Note 2336881

Required licenses:

- Oracle Multitenant comes at a cost for both Oracle direct and SAP ASFU customers
- Oracle Full Use customers need to purchase:
 - Oracle Multitenant Option
- SAP ASFU customers need to purchase:
 - SAP “Oracle Multitenant License Package”

¹ plus specific SAP Database Bundle Patch ² Unicode only ³ Contained in Software Logistics (SL) Tool Set 1.0 SP19

Oracle Multitenant Restrictions

Oracle Multitenant with SAP

is subject to the following restrictions:

- Unix: User concept “Oracle Standard” only
- No mix of OLTP and OLAP PDBs in same CDB

For details see

- SAP Note 2336881

Restrictions planned to be lifted in H2/2017:

- No RAC support. SI/FS and SI/ASM only
- Limited support for Engineered Systems:
 - SI/ASM only
- No support for
 - Windows Cluster
 - Transparent Data Encryption (TDE)
- Limitations regarding SAP Host Agent

SAP NW Business Intelligence

Flat InfoCubes



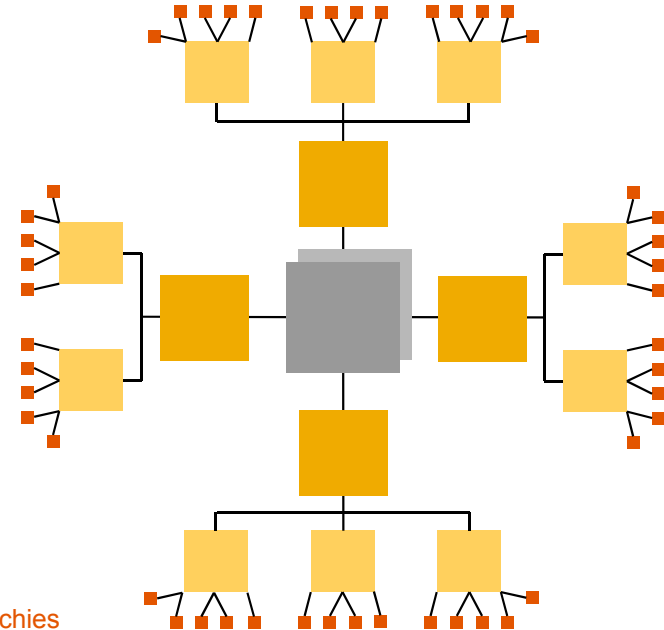
SAP NW Business Intelligence

Classic InfoCubes

Classic InfoCubes follow SAP proprietary, extended Star schema
Optimized for row-based, classic RDBMS

- 2 fact tables
 - E fact table: Read-optimized partitioning
 - F fact table: Write/Delete-optimized partitioning
- Dimension tables
 - as grouping sets of characteristics
- Shared master tables

facts
dimensions
characteristics
attributes + hierarchies

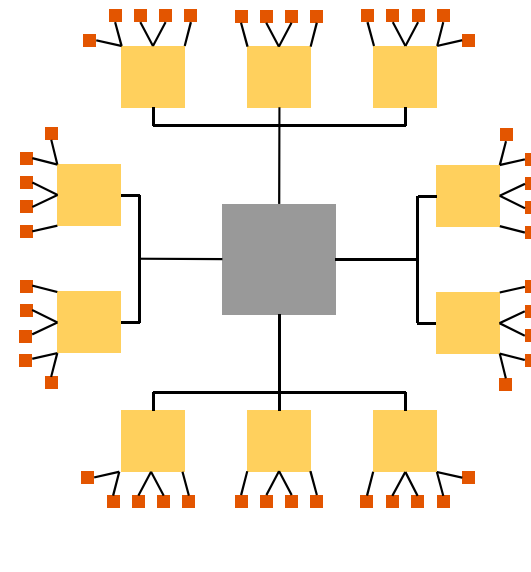


SAP NW Business Intelligence

Flat InfoCubes

Flat InfoCubes are simplification of classic schema
Optimized for columnar and hybrid RDBMS

- 1 fact table
 - Write/Delete no longer harms read performance
 - No separation into E and F fact tables
 - Two-dimensionally partitioned using sub-partitioning
- No dimension tables¹
 - Dimensions become pure meta data
 - Obsolete need to look-up/create DIMIDs strongly boosts update performance
- Much higher query and load performance
 - Due to In-Memory technology
 - Less joins; no indices on fact table



¹ SAP package dimension remains

SAP NW Business Intelligence

Flat InfoCubes with SAP on Oracle

Available from SAP NW Business Intelligence 7.40

Relies on Oracle Database In-Memory technology

- Released 30 June 2016
- Supported from:
 - SAP NW BI 7.40 SP15
 - SAP NW BI 7.50 SP04
- Oracle Database 12c Release 1 (12.1.0.2)¹ and higher
- Oracle Database In-Memory mandatory

For details see

- SAP Note 2335159

¹ requires May 2016 SAP Bundle Patch (SAP12102P_1605) for Oracle Database, or higher

Engineered Systems **Update**



Engineered Systems Update **Exadata & Exalogic**

CLUSTERED DATABASE AND STORAGE SERVER

Oracle Exadata Database Machine X2–X6

Support for X2-2|8 through X6-2|8

- Exadata license required

For details see

- SAP Note 1590515
- Oracle Exadata white paper in SAP Community

CLUSTERED APPLICATION SERVER

Oracle Exalogic X2–X5

Support for X2-2 through X5-2

- Virtual Exalogic (using Oracle VM)
- Only in combination with Exadata

For details see

- SAP Note 1617188

Engineered Systems Update **SPARC Clusters**

GENERAL PURPOSE ENGINEERED SYSTEM

Oracle SPARC SuperCluster

Support for T4-4, T5-8, M6-32 and M7

For details see

- SAP Note 1693680

SMALL-SCALE, GENERAL PURPOSE ENGINEERED SYSTEM

Oracle SPARC MiniCluster

Support for S7-2

- Requirements (excerpt):
 - Oracle Database 11.2.0.4 or 12.1.0.2
 - Oracle Client 11.2.0.4 or higher
 - MiniCluster Configuration Utility \geq 1.1.18.2

For details see

- SAP Note 2384855

Engineered Systems Update

ODA & PCA

TWO-NODE CLUSTERED DATABASE SERVER

Oracle Database Appliance

Support for V1, X3-2 through X6-2¹

For details see

- SAP Notes 1760737, 2290084 and 2388511
- Oracle ODA white papers in SAP Community

ENGINEERED SYSTEM DESIGNED FOR VIRTUALIZATION

Oracle Private Cloud Appliance X3–X6

Support for X3-2 through X6-2

- Based on Oracle VM

For details see

- SAP Note 2052912

¹ ODA X6-2 HA only. Single instance variants S through L pending.

Infrastructure as a Service **IaaS Update**



IaaS Update

Microsoft Azure

Certification

Supported with SAP as follows:

- Oracle Database 11.2.0.4 and 12.1.0.2
- Single Instance only (no RAC)
- Oracle Database In-Memory and Multitenant Option not supported

Supported Operating System versions:

- Windows Server 2012
- Windows Server 2012 R2
- Windows Server 2012 R2 Service Pack 1

For details see

- SAP Notes 1928533 and 2039619

IaaS Update

Amazon Web Services

Certification

Supported with SAP as follows:

- Oracle Database 11.2.0.4 and 12.1.0.2
- Oracle Linux 6.4 or higher¹
- Amazon Web Services (AWS) EC2 only
 - No support for AWS RDS
- Single Instance only (no RAC)
- Oracle Database In-Memory and Multitenant Option not supported

For details see

- SAP Notes 2358420 and 1656099

¹ Amazon Machine Image (AMI) must be based on Oracle Linux 6.4 or later

Miscellaneous **Topics**



Operating Systems

SAP Kernel 7.49+ on RHEL 6, OL 6 and SLES 11

Additional OS Package required

SAP kernels 7.49 and higher on operating systems:

- Red Hat Enterprise Linux 6
- Oracle Linux 6
- SUSE Linux Enterprise Server 11

require addition operating system RPM package `libstdc++`¹

For details see

- SAP Note 2195019

`libstdc++` is contained in

Operating System	Library
RHEL 6	<code>compat-sap-c++</code> ²
OL 6	<code>compat-sap-c++</code> ³
SLES 11	contained in SLES 11 SP4 ⁴

² „RHEL 6 for SAP Applications“ required

³ Included as of Exadata 12.1.2.3.0 and ODA 12.1.2.7.0

⁴ Runtime environment update for SP2 and SP3 available from SUSE

¹ The same holds for SWPM 1.0 SP19 (SAPinst 7.49) and higher

Release Strategy

Heads Up!

New ERP Enhancement Package introduces NetWeaver 7.50

SAP ERP 6 EhP 8 is based on NetWeaver 7.50 instead of 7.40

→ New DB/OS requirements

Downwards-compatible Kernel (DCK) 7.45 and NetWeaver 7.50

NetWeaver version defines supported Oracle versions:

- Kernel 7.45 with NetWeaver 7.4X: Oracle 11 and 12
- Kernel 7.45 with NetWeaver 7.50: Oracle 12 only

→ Same kernel version but different Oracle support!

Social Media

SAP on Oracle Community

SAP on Oracle Community Page

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

go.sap.com/community/topic/oracle.html¹

NAVIGATION FROM SAP CORPORATE HOMEPAGE

go.sap.com

→ Community

→ Browse the Community

→ Search for *SAP on Oracle*

The screenshot shows the SAP on Oracle Community page. The navigation bar at the top includes links for Solutions, Support, Training, Community, Developer, Partner, and About. The main heading is 'SAP on Oracle Community', followed by a sub-heading 'Find resources – including blogs, questions and answers, and resources for administering your Oracle database with an SAP system.' Below this is a 'Featured Content' section with three articles:

- New BR*Tools Patch Now Available (with support for Oracle 12c Multitenant Database)**: The new BR*Tools patch (7.40 patch 24) is now available on SAP Service Marketplace. It introduces the support for Oracle 12c Multitenant Database. [SAP Note 2333360](#) and [SAP Note 2333995](#).
- Oracle Multitenant Option Now in Early Customer Shipment Status**: The Oracle Multitenant option is now in early customer shipment status. If you are interested in using this feature for SAP Netweaver-based systems and want more information, please contact Christian Graf, including your customer number in the mail.
- SAP BW Flat Cubes Released for Oracle Database 12c**: Customers can now use the new Flat Cube architecture for BW InfoCubes with Oracle Database 12c Release 1 and Oracle Database In-Memory. This new optimized InfoCube design is now generally available as of SAP BW 7.40 SP15. [SAP Note 2335159](#).

¹ Former *SAP Community Network (SCN)* was discontinued in fall 2016

Social Media

SAP on Oracle – Twitter

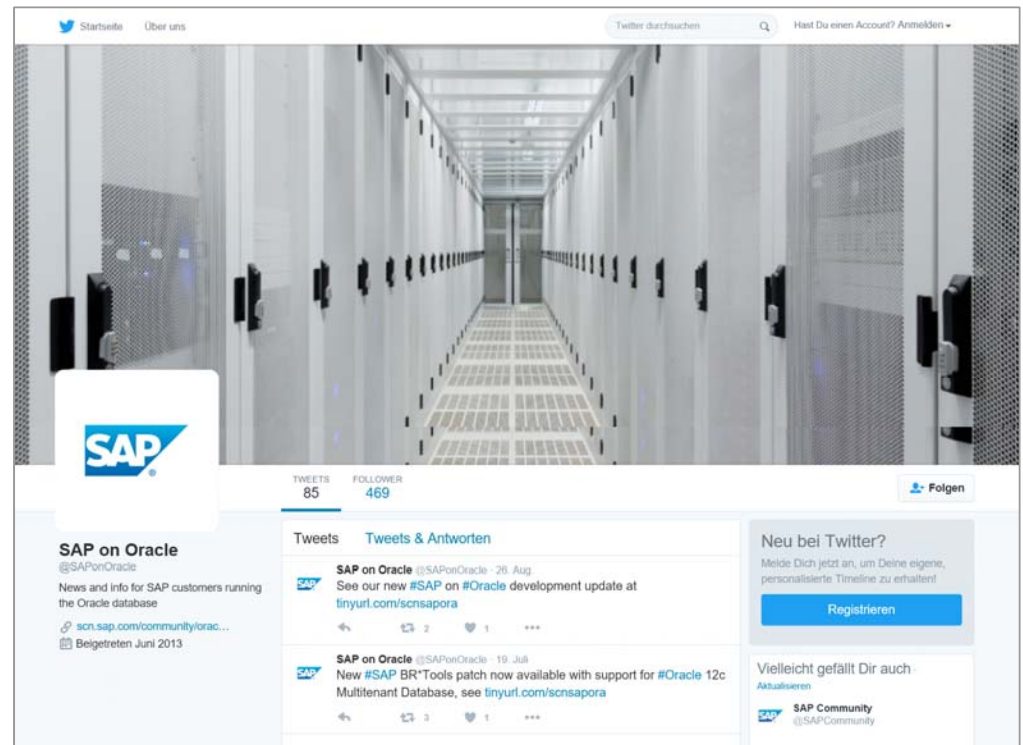
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