

SAP on Oracle

Development Update

October 2014



SAP



ORACLE

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SAP on Oracle Database 10g



SAP on Oracle Database 10g

Restricted Extended Support



Regular Extended Support expired 31 July, 2013

Restricted Extended Support

August 2013 through July 2015

- **Except:** Itanium platforms until December 2015:
Windows IA64, Linux IA64,
HP-UX IA64

Terms and Conditions

'Severity 1' fixes only

- No more Critical Patch Updates (CPUs)
- based on Oracle 10.2.0.5
- For the time being, pricing for SAP ASFU customers remains the same as previous Extended Support offering

For details see

- SAP Note [1110995](#)



SAP on Oracle Database 11g



Certification

Oracle Database 11g Release 2 (11.2) only
SAP products based on 640_EX2 kernel
and later only

- Restricted to products which are in SAP Extended Maintenance at least until end of 2010

Certification available on all OS platforms

- **Except:** Windows IA64, Linux IA64,
Linux on Power

For details see

- SAP Note [1398634](#)

Oracle 11.2 Instant Client

SAP-certified since February 2011

Don't forget:

Update the Oracle client from 10.2 to 11.2
to get out of Oracle 10.2 Extended Support
obligation!

SAP on Oracle Database 11g

Supported Releases

SUPPORT DATES
See SAP Note
1431799

ORACLE
DATABASE **11g**

Patch Set 11.2.0.2

1st Patch Set for Oracle 11.2
Released 10 November, 2010




- General Availability since mid January 2011
- Windows available since 10 May, 2011

November 2013 SBP was final and contains PSU 12 for 11.2.0.2 (11.2.0.2.12)

Patch Set 11.2.0.3

2nd Patch Set for Oracle 11.2
Released 12 December, 2011




- HP-UX PA-RISC available since June 2012
- Windows available since 14 February, 2012

August 2014 SBP is most recent and contains PSU 11 for 11.2.0.3 (11.2.0.3.11)

August 2015 SBP will be final

Patch Set 11.2.0.4

Final Patch Set for Oracle 11.2
Released 14 February, 2014



- General Availability since February 2014
- Windows Cluster available since May 2014

August 2014 SBP is most recent and contains PSU 3 for 11.2.0.4 (11.2.0.4.3)

New SAP projects should start on 11.2.0.4 or higher

Overview Compression Technologies in SAP Environments

Convert Tables to Compressed IOTs

- Improves query and DML performance and saves disk space
- Only convert the largest tables
- For details, see SAP Note [1856270](#)

Implement Index Compression

- Improves R/3 performance the most as all database access in R/3 environments is index-based, especially index range scans
- Up to 20% disk space reduction for complete database

Implement OLTP Table Compression

- No real query performance benefit in R/3 environments
- Provides very good disk space savings
- Only compress the largest tables

Implement SecureFiles Compression

- Very important for SAP applications like CRM or XI/PI that store large (uncompressed) amounts of data

Overview Space Savings with ACO on customer databases

	Without Compression [GB]	With Compression ¹⁾ [GB]	Space Savings [Factor]
Database ²⁾			
ECC 6.0	4,782	1,976	2.4
BI 7.0	1,413	543	2.6
CRM 7.0	950	334	2.8
RMAN Backup ³⁾	2,817	667	4.2
Export Data Pump	973	156	6.2

1) incl. other space optimizations 2) fully reorganized 3) for compressed database

SAP on Oracle Database 11g

NEW! SAP BW Optimization

10x faster data loads

- No more drop/create indexes
- Use of unusable indexes
- Use of table factoring

For details see

- SAP Note [1842044](#)

	Without Optimization [sec]	NEW! With Optimization [sec]
1 Request	120	11
10 Requests	1,200	100

Encryption

Part of Oracle Advanced Security (ASO)

Comprising...

- Tablespace encryption
- SecureFile encryption
- RMAN backup encryption
- EXPDP encryption
- Data Guard Secure Redo Transport

Explicit ASO license mandatory

- SAP ASFU license includes ASO

Oracle Database Vault

Requirements:

- Oracle 11.2.0.2 and higher
- SAP 7.00 based kernels and higher
 - e.g. ECC 6.0, BI 7.0, CRM 5.0, ...

Different pricing models for SAP customers

- Depending on Oracle database licensing model (ASFU or Oracle Full License)

For details see

- SAP Note [1355140](#)
- Oracle Database Vault white paper on SCN

Oracle Real Application Clusters 11.2

Available on all Unix/Linux and Windows platforms

- for all SAP kernels 640_EX2 and up
- Option to put OCR and voting disks on ASM (new RAC 11.2 installations only)
- Upgrades from RAC 10.2 must still use shared file systems for OCR and voting disks

For details see

- SAP Note [527843](#)
- Oracle RAC white paper on SCN

SAP Control SAPCTL 6 and **NEW!** 7

To manage and control critical SAP resources through Oracle Clusterware

- Central Services and Replication (ASCS, SCS)
- Web Dispatcher

Integration certified with SAP NetWeaver 7.30

- via SAP Integration Scenario NW-HA-CLU 730

For details see

- SAP Note [1496927](#)

Clusterware 11.2

- Oracle Services based Clusterware configuration!
- Same supported technology stacks as hitherto stay in place

For details see

- SAP Note [527843](#)
- Oracle RAC white paper on SCN

ASM/ACFS

Requirements:

- Oracle 11.2.0.2, or higher
- Oracle Grid 11.2.0.2, or higher
- Kernel 640_EX2 or higher based SAP releases

Single Instance and RAC Support

- ACFS required for RAC installations with ASM¹⁾

For details see

- SAP Note [1550133](#)
- Oracle ASM white papers on SCN

1) not available on HP-UX

Installation & Administration

Full ASM Support provided in...

- BR*Tools 7.20 Patch [18](#)
 - see SAP Note [1627541](#)
- Software Provisioning Manager 1.0 SP1
 - for SAP product versions 7.0X and 7.3X
 - see SAP Note [1738053](#)

SAP NW Master Data Management

SAP MDM certified with ASM since June 2013

- Starting with MDM 7.1 SP[10](#)
- See SAP Note [1825328](#)

Entry Notes

- [1398634](#) Oracle Database 11g: Integration in SAP Environment
- [1434131](#) Release of Oracle 11.2 for older SAP Releases
- [1431800](#) Oracle 11.2.0: Central Technical Note
- [1431799](#) Oracle 11.2.0: Current Patch Set

Regularly Updated

on 10th of every month

- [1949250](#) Oracle 11.2.0: Patches/Patch Collections for 11.2.0.4
- [1631931](#) Oracle 11.2.0: Patches/Patch Collections for 11.2.0.3
- [1431798](#) Oracle 11.2.0: Database Parameter Settings

New Oracle 11.2 Features

- [1355140](#) Using Oracle Database Vault in an SAP Environment
- [1436352](#) Oracle 11g Advanced Compression for SAP Systems
- [1426979](#) Oracle 11g: SecureFiles – The New Way to Store LOB Data
- [1416773](#) Oracle Direct NFS
- [1550133](#) Oracle Automatic Storage Management (ASM)
- [1856270](#) Performance Improvements for Tables with Single Unique Index

Installation and Upgrade

- [1431797](#) Oracle 11.2.0: Troubleshooting the Database Upgrade
- [1431796](#) Oracle 11.2.0: Troubleshooting the Software Installation
- [1431794](#) Oracle 11.2.0: Instant Client
- [1431793](#) Oracle 11.2.0: Upgrade Scripts

Upgrade Guides

Oracle 11.2 Database Upgrade



<http://service.sap.com/instguides>

→ Database Upgrades

→ Oracle

Tools relevant for Oracle 11.2

- [1430669](#) BR*Tools Support for Oracle 11g
- [1027012](#) MOPatch – Install Multiple Oracle Patches in One Run



SAP on Oracle Database 12c Roadmap



Oracle Database 12c Release 1 (12.1)

NEW! 12.1.0.2 planned to be first release for SAP

- hereby breaking 'Terminal Release' custom valid to date
 - to ensure sufficient overlap with 11g
- No support of base release 12.1.0.1
- Starting from SAP NetWeaver 7.X based products
- Rollout planned for Q1/2015
 - Base certification w/o major 12c features
 - Staged rollout for major features later

New Features

Planned with initial certification:

- Windows: Support for standard user for services, database instances and Oracle Net services
- Advanced Index Compression¹⁾
 - Automatic prefix computation
 - Higher compression rate, ease of use
- Client-Server Network Compression¹⁾
 - Less network load between application servers and database instance(s)
- Concurrent Execution of UNION and UNION ALL branches
 - Improves BW performance

1) requires Advanced Compression

New Features

Planned with initial certification:

- ACFS Support on Exadata
 - For SAP shared file system support (/sapmnt, etc.)
- RAC: HA-NFS support with ACFS
 - Complete SAP HA solution for shared file system
- RMAN: Cross platform backup and restore
 - Faster and easier heterogeneous platform migration
- Storage Snapshot Optimization
 - No more begin/end backup for certain snapshot technologies
- Active Data Guard Far Sync¹⁾
 - High performance zero data loss across large distance WAN

1) requires Active Data Guard Option

New Features

Not available with initial certification, rollout in staged approach:

- Information Lifecycle Management (ILM)/ADO¹⁾
- Multitenant (aka. Pluggable Databases)²⁾
- In-Memory³⁾
- Hybrid Columnar Compression (HCC)^{1), 4)} for Exadata
- OCI/Database Interface: Array Row Count for Array DML Operations
- Online Move Partition
- Move a Datafile Online

1) requires Advanced Compression Option 2) requires new Multitenant Option 3) requires new Database In-Memory Option 4) Automatic Data Optimization (ADO) prerequisite



Engineered Systems Update



Engineered Systems Update

Exadata

Oracle Exadata Database Machine X2 | X3 | X4

Clustered database and storage server

Support for X2-2, X2-8, X3-2, X3-8, X4-2 and X4-8

Oracle Exadata License required

- x86-64 hardware only
- Oracle Linux 5 or Oracle Solaris 11
- Oracle 11.2.0.2 or later required

For details see

- SAP Note [1590515](#)
- Oracle Exadata white paper on SCN

SAP Products Support

- NW 7.0 or higher based SAP products
- **NEW!** BO Reporting Data Source 4.0 SP6, 4.1 and higher
- **NEW!** SAP NW MDM 7.1 SP10 and higher

Engineered Systems Update

Exalogic

Oracle Exalogic X2 | X3 | X4

Clustered application server

Support for X2-2, X3-2 and X4-2

- In combination with Exadata only!
 - Oracle 11.2.0.2 or later required on Exadata
- x86-64 hardware only
- Oracle Linux 5 or Oracle Solaris 11
- **NEW!** Virtual Exalogic (using Oracle VM) now supported
 - EECS¹⁾ 2.0.6.0.0 and up

For details see

- SAP Note [1617188](#)

SAP Products Support

- NW 7.0 or higher based SAP products
- Unicode only

1) Oracle Exalogic Elastic Cloud Software

Engineered Systems Update

SPARC SuperCluster

Oracle SPARC SuperCluster

General purpose engineered system

Supported for SAP since 2012

- T4-4, T5 and M6 SPARC hardware
- Oracle Solaris 11 required
- Oracle 11.2.0.3 or later required

For details see

- SAP Note [1693680](#)

SAP Products Support

- NW 6.40 or higher based SAP products
 - 640_EX2, 720_EXT kernels only
- **NEW!** SAP NW MDM 7.1 SP10 and higher

Engineered Systems Update

Database Appliance

Oracle Database Appliance (ODA)

Two-node clustered database server

Support for V1, X3-2 and X4-2

- Starting from ODA Version 2.4:
 - ODA Version 2.4 + ODA OAK Patch 2.4.1
 - ODA Version 2.6 through 2.10¹⁾
- Oracle Linux 5 only
- Oracle 11.2.0.3.4 or higher

For details see

- SAP Note [1760737](#)
- Oracle ODA white paper on SCN

1) Versions 2.6 through 2.10 on Bare Metal only

SAP Products Support

- NW 7.0 or higher based SAP products
- **NEW!** BO Reporting Data Source 4.0 SP6, 4.1 and higher
- **NEW!** SAP NW MDM 7.1 SP10 and higher

Engineered Systems Update

NEW! Virtual Compute Appliance

Oracle Virtual Compute Appliance (OVCA)

Engineered system designed for virtualization

Supported for SAP since September, 2014

- Starting from OVCA Version 1.1.3
- Based on Oracle VM

Guest Operating Systems Support

- Oracle Linux 5 and 6
- Oracle Solaris 10 and 11

For details see

- SAP Note [2052912](#)

SAP Products Support

- All SAP products and database versions certified for supported guest OS
- Check SAP Product Availability Matrix (PAM)



Virtualization Update



Virtualization Update

Oracle VM

Certification

Supported for SAP as follows:

- Oracle VM 3.2.1 or higher
- x86-64 platforms¹⁾
- See SAP Note [1808268](#)

Guest Operating Systems Support

- Oracle Linux 5 and 6
- Oracle Solaris 10 and 11
- Microsoft Windows currently not supported
- SUSE Linux Enterprise Server currently not supported
- No Red Hat Enterprise Linux support

1) not with ODA

SAP Products Support

- All SAP products certified for supported guest OS
- Check PAM for OS availability for SAP product

Oracle Database Support

- Single Instance
 - 10.2.0.5, 11.1 (non-NW, e.g. BO), 11.2
- Real Application Clusters (RAC)
 - minimum 11.2.0.3
 - Oracle Linux guests only

Virtualization Update

Microsoft Hyper-V

Certification

Supported for SAP since June, 2013

- Windows Server 2012 Hyper-V
- Private and Public Cloud
- See SAP Note [1329848](#)

Guest Operating Systems Support includes

- Windows Server 2012, and R2
- Windows Server 2008 R2 Service Pack 1

SAP Products Support

- All SAP products certified for supported guest OS
- Check PAM for OS availability for SAP product

Oracle Products Support

- All Oracle products certified for Windows Server, including
 - Oracle Database 11.2
 - Oracle Instant Client 11.2

Virtualization Update

NEW! Microsoft Azure

SAP Products can now be deployed using the Oracle Database in a Microsoft Azure environment.

Supported Oracle Database versions:

- Minimum:
Oracle Database 11g Release 2 Patch Set 3 (11.2.0.4)
- Single Instance only

Supported Operating System versions:

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

For details see:

- SAP Note [1928533](#) – List of supported SAP Products and Azure VM types
- SAP Note [2039619](#)



SAP Bundle Patches

New Structure

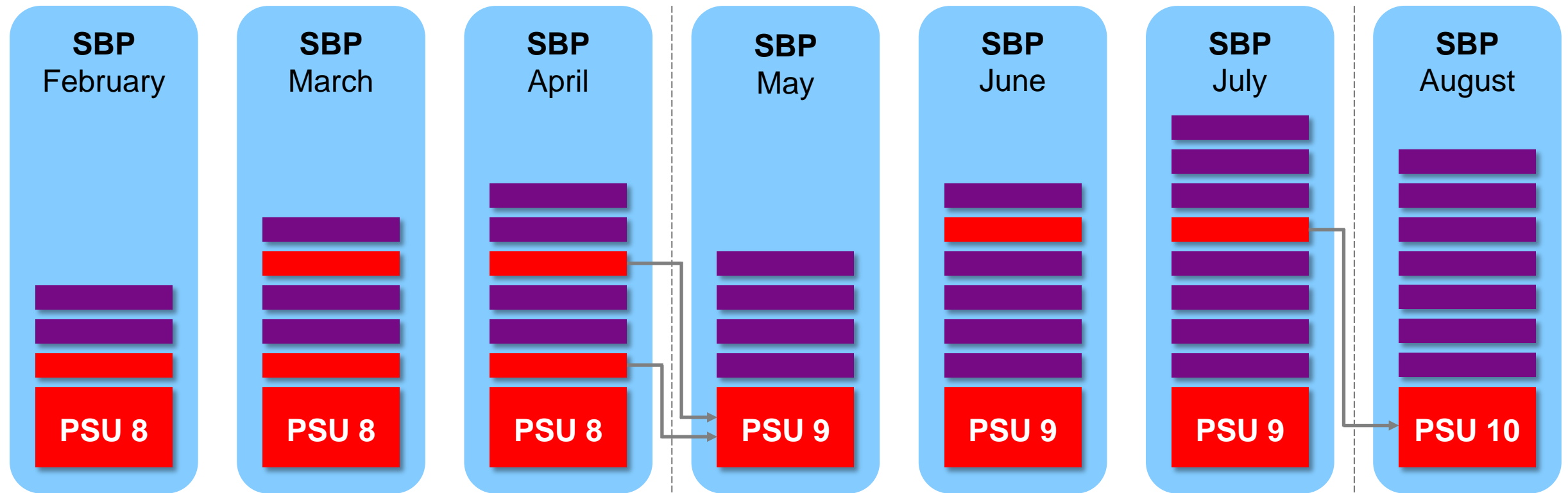


SAP Bundle Patches

New Structure

Previous SBP structure prone to patch pile-up

SAP overlay patches never fully incorporated in next Oracle PSU underlying the SBP



SAP Bundle Patches

New Structure

NEW! Starting June 2014, Oracle will provide new SBP Base Components:

SAP Database Bundle Patch

abbr. SAPDDBBP

- SAP-specific composite Oracle bundle for Oracle Database
- Comprises Oracle PSU/SPU plus additional patches necessary for SAP

→ Technical Basis of the following SBPs:



- RDBMS for Unix platforms
- Grid
- Database Appliance

SAP Exadata Database Bundle Patch

abbr. SAPEXADDBBP

- SAP-specific composite Oracle bundle for Oracle Exadata and SuperCluster
- Comprises Oracle Exadata BP plus additional patches necessary for SAP

→ Technical Basis of the following SBPs:



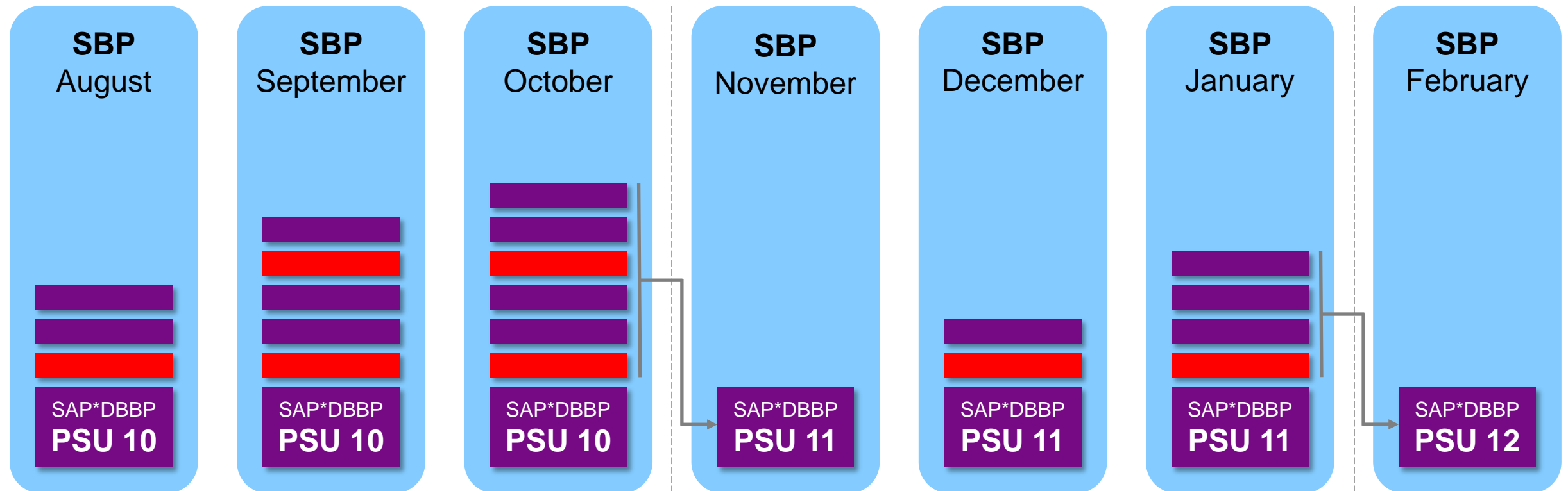
- Exadata
- SuperCluster

SAP Bundle Patches

New Structure

New SBP structure eliminates patch pile-up

SAP overlay patches fully incorporated in next SAP*DBBP underlying the SBP



SAP Bundle Patches

New Structure

One-time transition effort yields sustaining benefits:

Benefits

- 1 ▶ Better Patch Quality
 - Genuine Oracle PSU tests also get applied to SAP*DBBP bundles
- 2 ▶ Less On-Top Patches
 - More concise patch inventory
- 3 ▶ Less installation time for all subsequent SBPs

One-Time Challenges

- 1 ▶ May 2014 Patch Day needed to be skipped
 - Included April 2014 Oracle PSU
- 2 ▶ First-time installation more complex and time-consuming

SAP Bundle Patches

New Structure

Two options for first-time SBP installation:

Install in existing Oracle Home for Space Efficiency

- Downtime for patch rollback and SBP installation
- No additional disk space required
- Migration check script included
 - Full Oracle Home prerequisite checks
 - Checks for custom patches
(if detected: open CSS ticket)

Install in new Oracle Home for System Availability

- Downtime for Oracle Home switch only
- Additional disk space required
- Migration check script included
 - Checks for custom patches
(if detected: open CSS ticket)

For details see SAP Note [2011199](#)



Miscellaneous

Oracle Extended Support

Software Policy

The following Oracle software policy is effective:

For Oracle products in Extended Support, a valid Oracle Extended Support contract is required for

- downloading from SMP
- applying

any Oracle patches related to this product, e.g.

- SAP Bundle Patches (SBPs)
- ...

- Effective since 1 December, 2011

Caution!

SBPs etc. for Oracle are visible on SAP Marketplace for all customers. However:

Downloading or applying this software is prohibited without a valid Oracle Extended Support contract!

For details see

- SAP Hot News Note [1654734](#)

ABAP Secure Store

Motivation

OPSS connect vulnerable to attack

- For recommendations on how to secure OPSS mechanism against potential attack see SAP Note [157499](#)

ABAP Secure Store

To strengthen database security

- Database password encrypted in file system
- Makes OPSS/SAPUSER connect obsolete
- Allows `remote_os_authent=false`

Availability

Available for all 7.X kernel-based SAP versions

- Optional but recommended for Oracle 10 and 11, mandatory for upcoming Oracle 12
- SAP Kernel 7.20 Patch 100 required
- Available throughout 7.X via 7.20 downwards-compatible kernel (DCK) since Q4/2011

Notes

[1623922](#) Connect to Oracle Database

[1622837](#) New Connect Method of AS ABAP to Oracle via SSFS

[157499](#) OPSS Connect and Security Aspects

Secure Store Support

Changing the Database Password

`brconnect -f chpass` now handles both

- OPS\$ Connect (→ SAPUSER table)
- Secure Connect (→ Secure Store/SSFS)

mechanism and changes the password in the proper location.

- Supports both ABAP and Java Secure Store

Expert option `-s` | `-secstore`

To force or skip changes in a specific SSFS

```
-s | -secstore abap | abapshd |  
                java | javashd |  
                brtools | none
```

BR*Tools Secure Store

In combination with ABAP SSFS:

Fully eliminates need for OPS\$ user!

- Own BR*Tools Secure Store on database server
- Access through BRT\$ADM database user in BR*Tools SSFS instead of OPS\$ user
- Use `-u` | `-user` // option with BR*Tools

Availability

Secure Store Support is available as of BR*Tools 7.20 Patch 27.

See SAP Note [1764043](#)

Enhancements in BRARCHIVE

New Profile Parameters

*_arch parameters in `init<DBSID>.sap`

- Semantics like non-_arch parameters:
 - `rman_maxopenfiles_arch`
 - `rman_compress_arch`, etc.
- Allows BRARCHIVE to run differently from BRBACKUP

Parallel Disk Backup of Archive Log Files

May result in significant time savings

- Use new `init<DBSID>.sap` parameter
`exec_parallel_arch=<par_cnt>`

Backup of Standby Archive Log Files

Saving and deletion of archive log files generated on standby side

- Processing takes place on standby side
- Use new `init<DBSID>.sap` parameter:
`archive_type=standby`

Second Disk Copy of Archive Log Files

Disk backup of archive log files now credible alternative to backup on tape

- Also applies to remote disk (`stage`)

For details see SAP Note [1882182](#)

BR*Tools 7.20 and 7.40

Notes

SAP Notes

- 1430669** BR*Tools Support for Oracle 11g
- 1431296** LOB Conversion and Table Compression with BRSPACE 7.20
- 1428529** Corrections in BR*Tools Version 7.20
- 1598594** Configuration of BR*Tools for SAP Installations on User 'oracle'
- 1627541** BR*Tools Support for Oracle ASM
- 1764043** Support for Secure Storage in BR*Tools
- 1838850** Corrections in BR*Tools Version 7.40
- 1882182** Functional enhancements in BRARCHIVE 7.40

SAP on Oracle

SAP Community Network

Content Page

<http://scn.sap.com/community/oracle>

The screenshot shows the SAP Community Network interface. At the top, there's a navigation bar with 'SAP Community Network' and user options like 'Hi, Guest', 'Log On', and 'Join Us'. Below this is a search bar and a menu with categories like 'Products', 'Services & Support', 'About SCN', 'Downloads', 'Industries', 'Training & Education', 'Partnership', 'Developer Center', 'Lines of Business', 'University Alliances', 'Events & Webinars', and 'Innovation'. The main content area is titled 'SAP on Oracle' and has tabs for 'Overview', 'Content', 'People', and 'Subspaces'. The 'Overview' tab is active, showing a featured content section with a post titled 'Structural Changes in SAP Bundle Patches' dated May 28, 2014. Below this are sections for 'Key SAP Notes', 'Unanswered Questions', and 'Popular Tags'.

Forum

<http://scn.sap.com/community/oracle/content>

The screenshot shows the SAP Community Network forum interface. It features the same top navigation bar as the content page. The main content area is titled 'SAP on Oracle' and has tabs for 'Overview', 'Content', 'People', and 'Subspaces'. The 'Content' tab is active, displaying a list of forum posts. The first post is titled 'SAP system can not connect to Oracle stan...' and is dated May 28, 2014. The post content is partially visible, mentioning 'DR setup for our ECC (dual stack) system using Oracle Data Guard'. Below the post, there are user avatars and names like 'kiraang vira' and 'Aidan Constable'. The forum also includes a search bar, a filter by tag option, and a sort by latest activity (descending) dropdown. There are also sections for 'View the blog' and 'Sponsored Content'.

SAP on Oracle Twitter

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Get instant notification about...

- SAP Hot News
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- Best Practices
and a lot more...

The screenshot shows the Twitter profile page for @SAPonOracle. The profile banner features the SAP logo and the text "SAP on Oracle @SAPonOracle News and info for SAP customers running the Oracle database scn.sap.com/community/orac...". The profile statistics show 14 tweets, 0 following, and 25 followers. The "Tweets" section displays three recent tweets from @SAPonOracle, each with a date and a link to a resource. The left sidebar contains navigation links for Tweets, Following, Followers, Favorites, and Lists, as well as a "Follow SAP on Oracle" sign-up form with fields for Full name, Email, and Password, and a "Sign up" button. At the bottom of the sidebar, there are links for Worldwide Trends, SAP on Oracle, Oracle 11g Database, and SAP NetWeaver, along with a footer containing copyright information and various links.

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