



SAP Kernel in On Premise Landscapes

Update 2021

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PUBLIC

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Agenda

Kernel of the Application Server ABAP

- Release Strategy
- Delivery

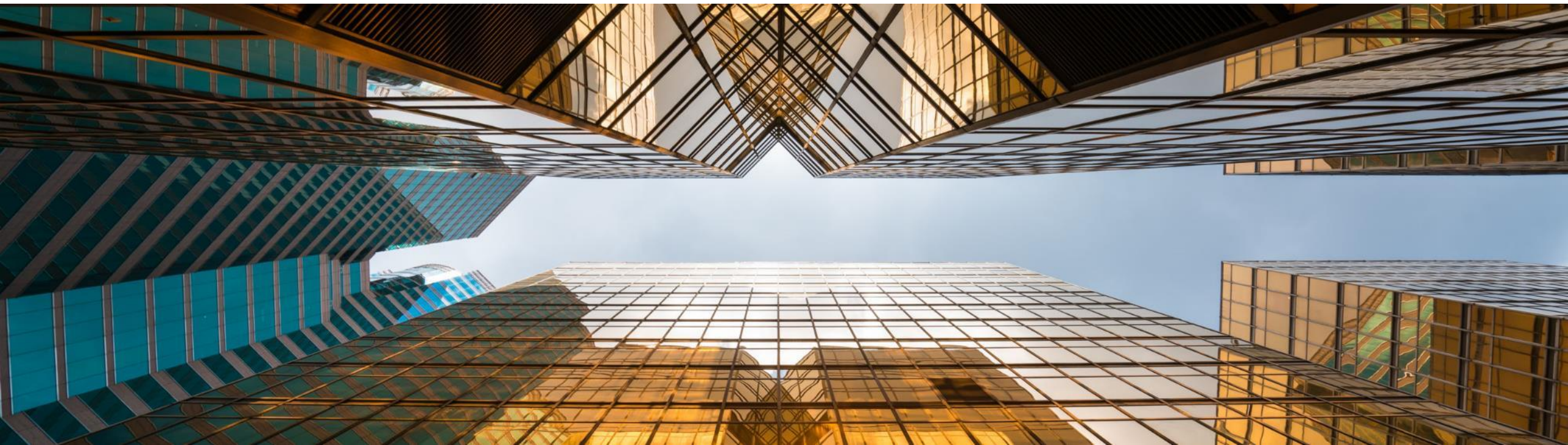
Maintenance Strategy

- Kernel Patch Types
- Recommendations
- Documentation

Questions and Answers

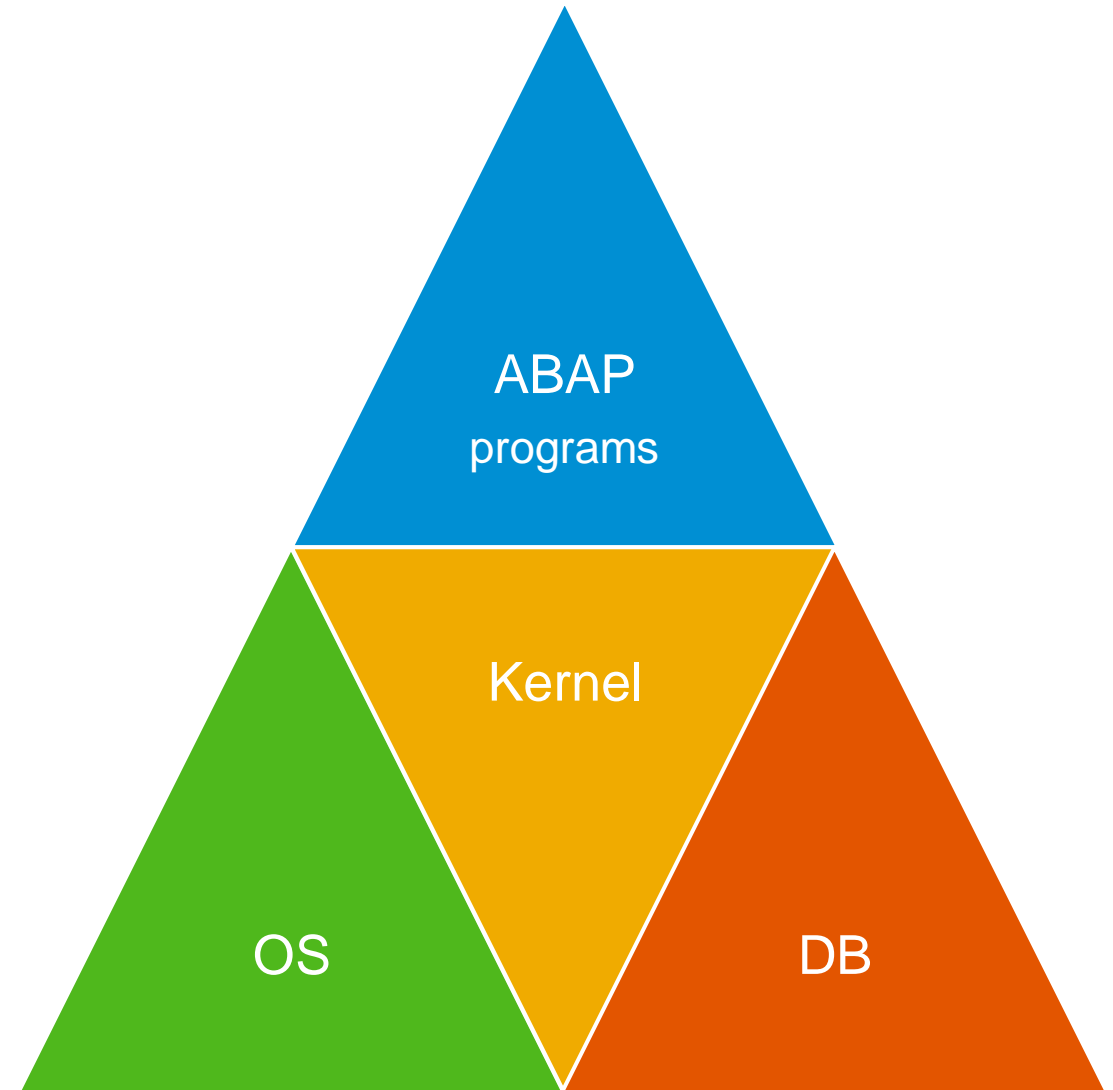
Kernel of the Application Server ABAP

SAP Kernel

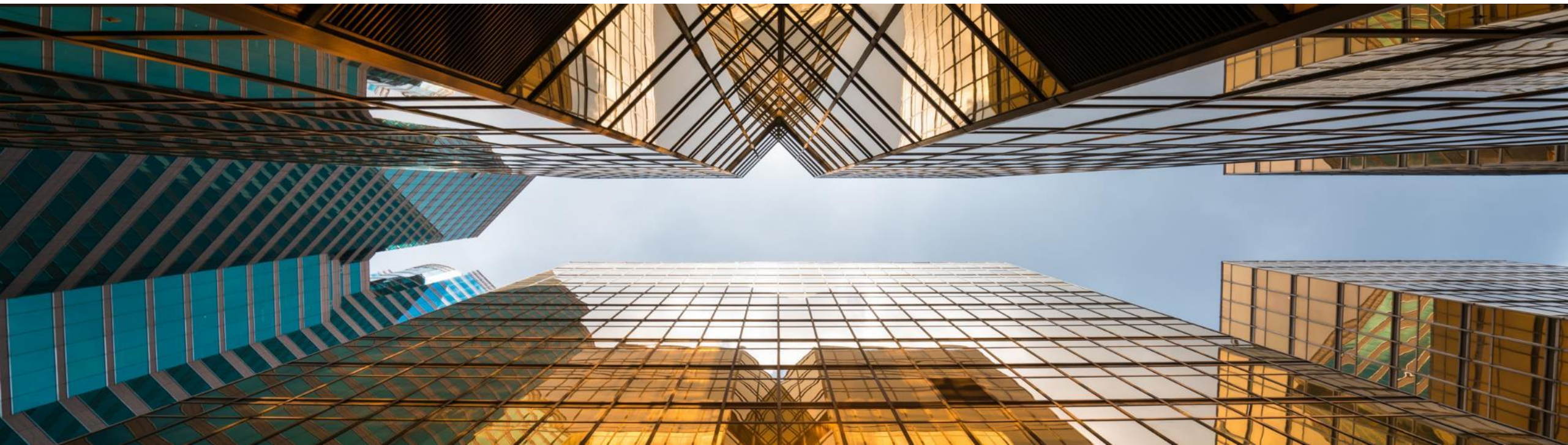


Kernel of the Application Server ABAP

- separate layer
- interface between **ABAP programs** and operating system/database
- operates system processes of the ABAP instance
- implemented in C/C++



SAP Kernel Release Strategy



SAP Products in Maintenance

SAP Business Suite 6.0

- EhP ≤ 6
- EhP 7-8

SAP S/4HANA

- 1511-1710 (NW)
- 1809+ (AP)

Kernel Code Lines

SAP Business Suite 6.0 EhP ≤ 6

Kernel 72x

SAP Business Suite 6.0			
(EhP ≤ 6)			
NW 7.0	NW 7.01	NW 7.02	NW 7.31
Kernel 722 (Standard, EXT, EX2)			
Kernel 721 out of maintenance supports 32-bit systems			

- No new features, corrections only
- **EX2 (ABAP stack only), EXT:** kernel versions supporting more recent OS and DB platforms, newer compilers and runtime environments
- Unicode / non-Unicode
- **Roadmap:** [SAP Note 1744209](#) (SAP Kernel 720, 721 and 722: Versions and Kernel Patch Levels)

SAP Business Suite 6.0 EhP 7-8, SAP S/4HANA 1511-1710

Kernel 74x-75x

SAP Business Suite 6.0		SAP S/4HANA		
EhP 7	EhP 8	1511	1610	1710
NW 7.4	NW 7.5		7.51	7.52
Kernel 753 (Innovation)				
Kernel 749 (Standard)				—

- Innovation:
corrections and new features
- Standard:
no new features, corrections only
- Unicode / non-Unicode
- **Roadmap:** [SAP Note 1969546](#)
(Release Roadmap for Kernel 74x and 75x)

SAP S/4HANA 1809-1909

Kernel 77x

SAP S/4HANA	
1809	1909
ABAP Platform 1809	ABAP Platform 1909
SAP BASIS 7.53	SAP BASIS 7.54
Kernel 777	
Kernel 773 out of maintenance	—

- Unicode only
- Supported platforms:
Windows, Linux, AIX, Linux on Power
- **Roadmap:** [SAP Note 2907361](#)
(Release Roadmap for Kernel 77x
and 78x)

SAP S/4HANA 2020+

Kernel 78x

SAP S/4HANA	
2020	2021
ABAP Platform 2020	ABAP Platform 2021
SAP BASIS 7.55	SAP BASIS 7.56
<i>New:</i> Kernel 785	
Kernel 781	

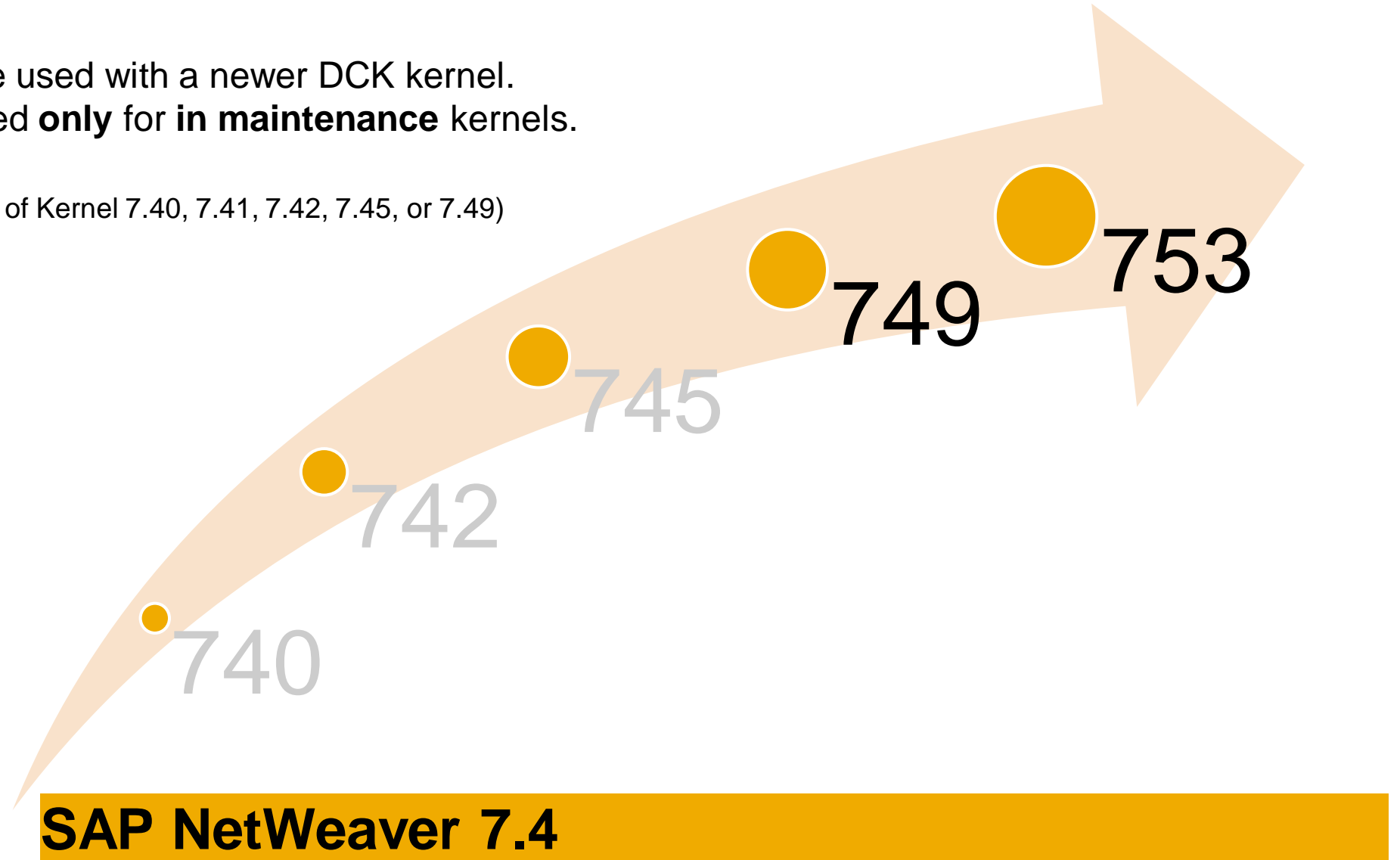
- Unicode only
- Supported platforms:
Windows, Linux, AIX, Linux on Power
- **Roadmap:** [SAP Note 2907361](#)
(Release Roadmap for Kernel 77x and 78x)
- **SAP S/4HANA 2021** next planned on premise version, RtC: Q4 2021

Downward Compatible Kernel (DCK)

SAP products can be used with a newer DCK kernel.
Patches are produced **only** for **in maintenance** kernels.

DCK Note [2556153](#)

(Using Kernel 7.53 instead of Kernel 7.40, 7.41, 7.42, 7.45, or 7.49)



News 2021

SAP Business Suite 6.0 EhP ≤ 6



Kernel 722 – DCK



Kernel 721
OOM since June 2021

SAP S/4HANA 1809



Kernel 777 – DCK



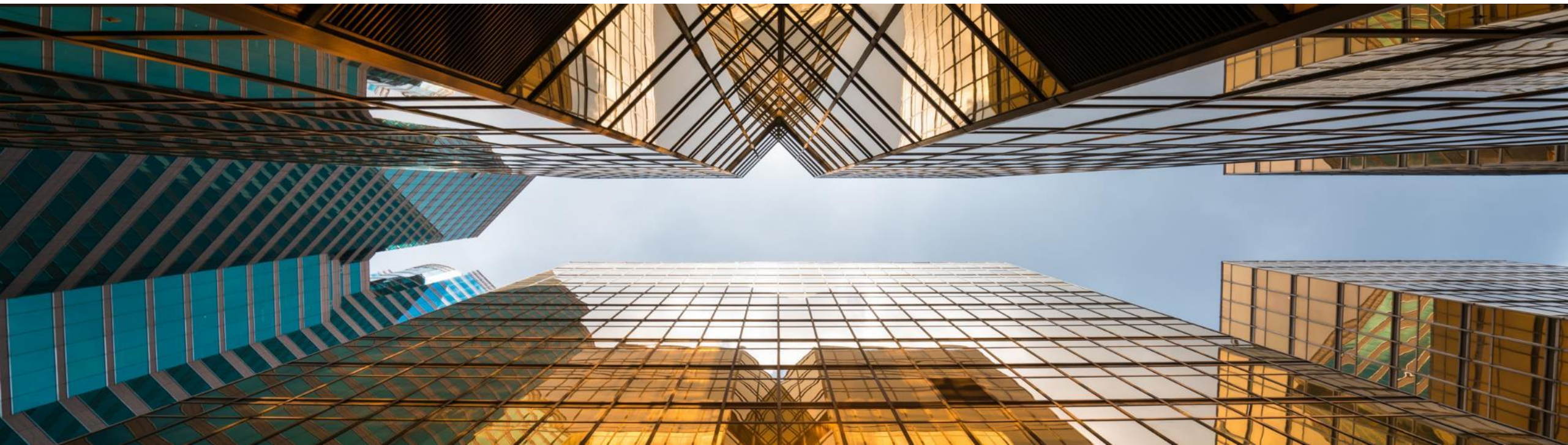
Kernel 773
OOM since April 2021



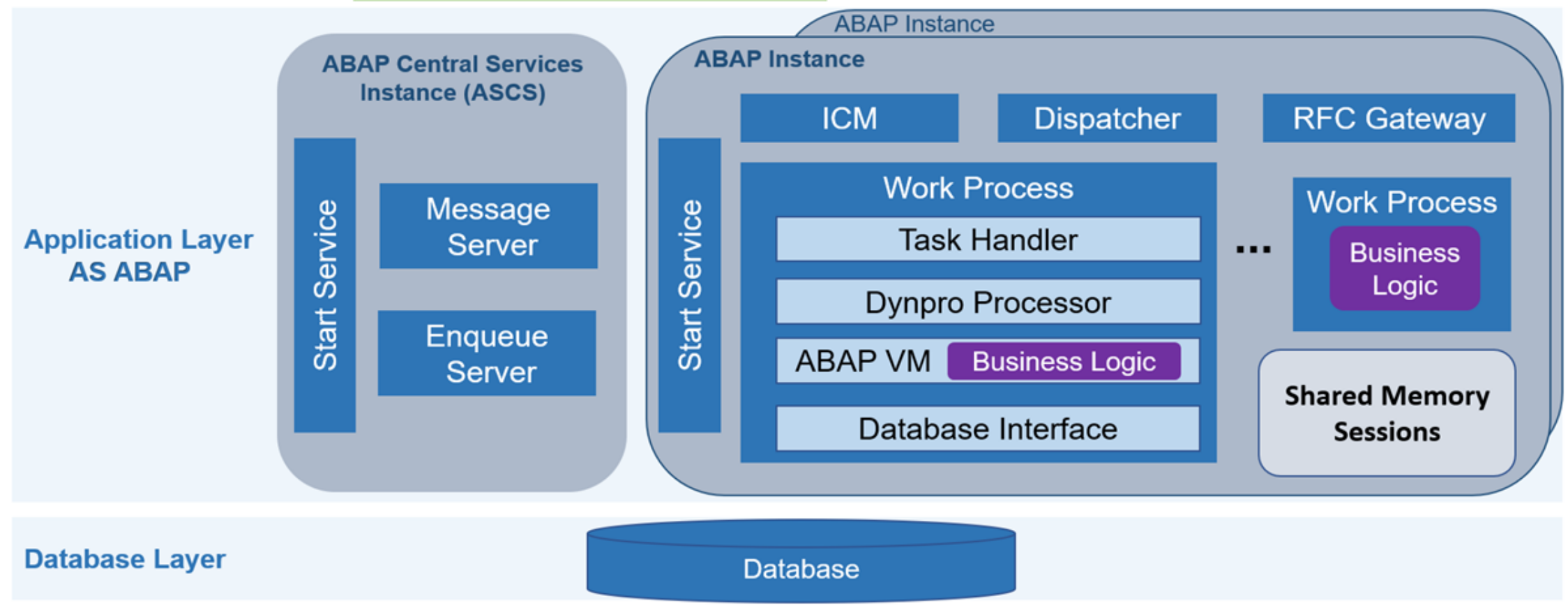
Kernel 781, 785 cannot be used as a DCK kernel with SAP S/4HANA 1809-1909

SAP Note [2083594](#) (SAP Kernel Versions and SAP Kernel Patch Levels)

SAP Kernel **Delivery**



Kernel of the Application Server ABAP



Operating System

SAP Kernel in the **File System**

SAPEXE.SAR

- **disp + work**
 - dw_xml
 -
 - gwr
 - icman
-
- Message Server
 - Enqueue Server
 - Web Dispatcher
 - SAP GUI for HTML
 -
-
- Kernel Utilities
 - Transport Control Program
 - Unicode Libraries
 - SAPFTP
 -

SAPEXEDB.SAR

- R3load
- dbsdbslib
- instancedb
- sapdbmrfc
-

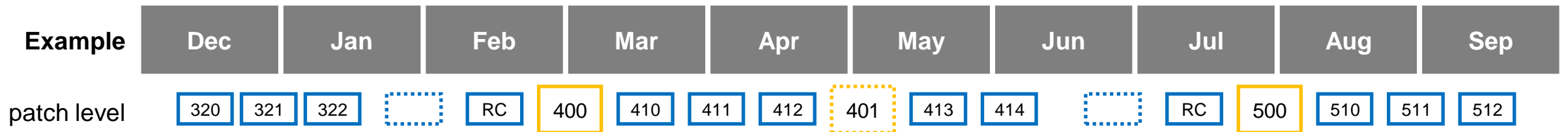
Delivery of Kernel Software

SP Stack Kernel

- SAPEXE.SAR and SAPEXEDB.SAR
- 1-2 times a year
- patch level 100, 200, 300, ...
- on demand:
SP Stack Kernel patches x01, x02,...

Hotfixes

- disp+work: weekly
- further archives on demand:
lib_dbsl.SAR, dw_utils.SAR, ...
- patch level 1, 2, 3 ... 110, 111, 112 ... 210, 211, 212 ...



Kernel Patches are **cumulative**

The latest available patch contains **all** previously released corrections.

... 710 711 **712**

You can download:

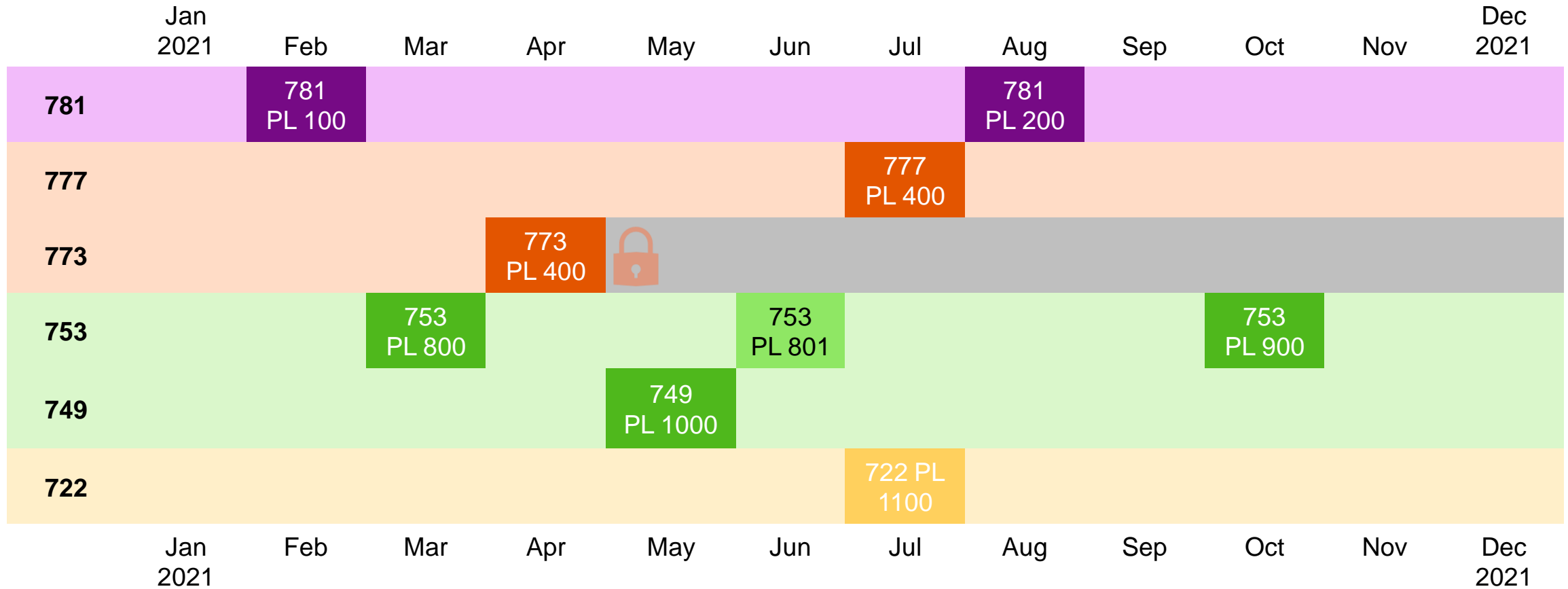
- (only) the latest hotfix archives
- (all) previously released SP Stack Kernels
 - earlier versions for maintenance purposes only

SAP Note [19466](#)

(Downloading SAP kernel patches)

SP Stack Kernel Plan 2021

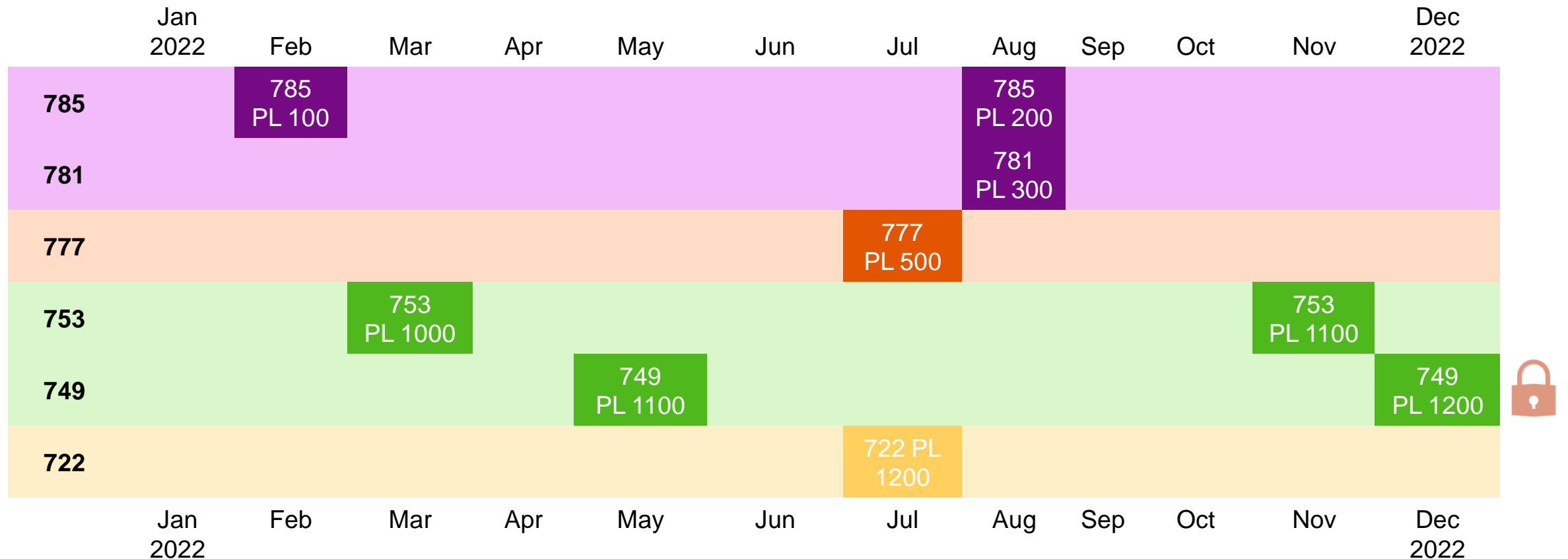
Disclaimer: approximate dates, adjustments possible



SAP Note [2083594](#) (SAP Kernel Versions and SAP Kernel Patch Levels)

SP Stack Kernel 2022

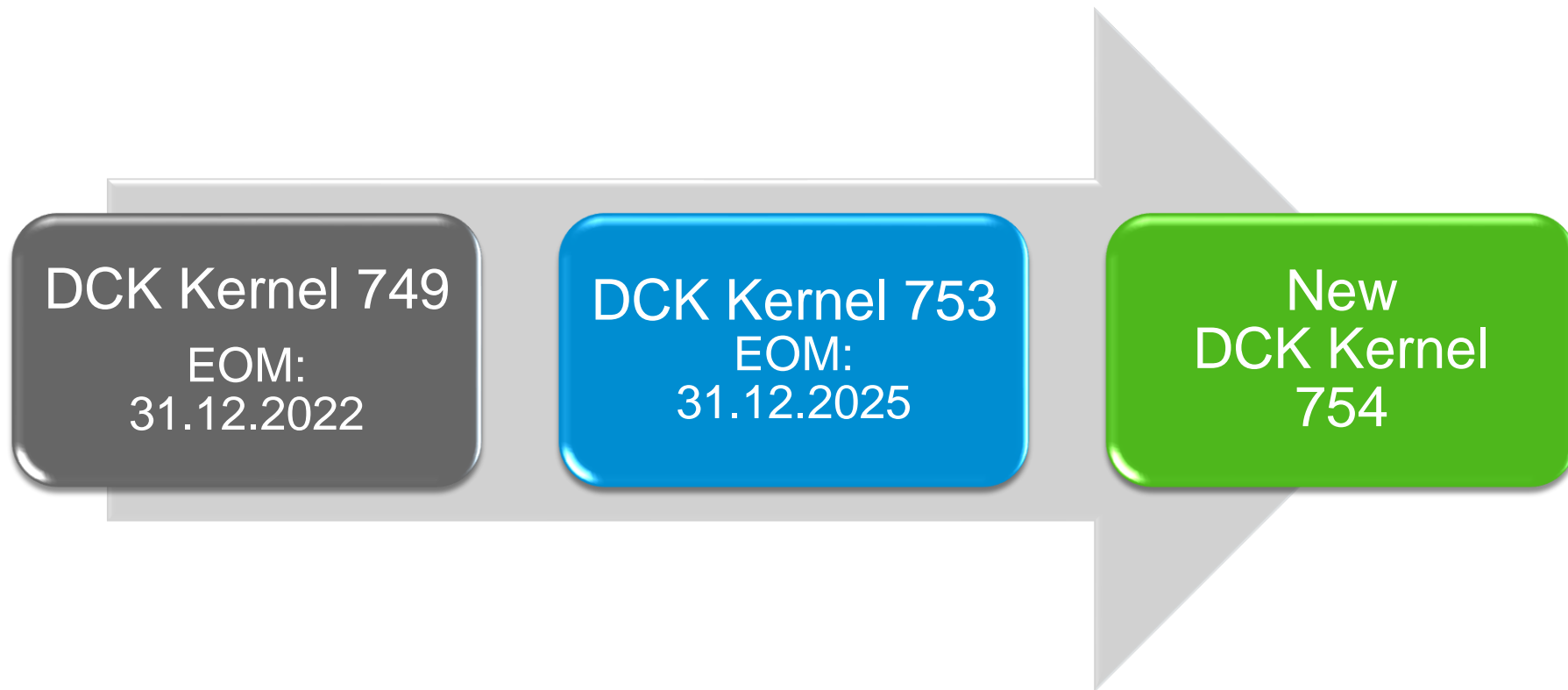
Disclaimer: approximate dates, adjustments possible



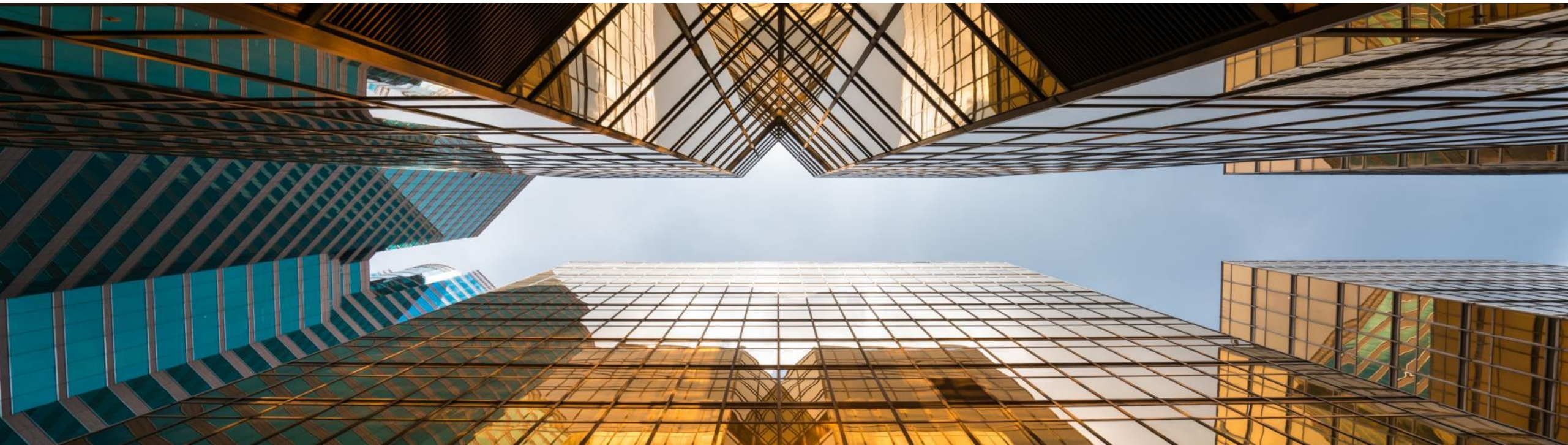
Outlook

Disclaimer: tentative information, adjustments possible

SAP Business Suite 6.0 EhP 7-8, SAP S/4HANA 1511-1710:



SAP Kernel **Maintenance Strategy**



Recommendation for Your SAP Application

SAP kernel maintenance strategy follows general recommendations for SAP applications.

Follow the link:

[SAP Support Package Stack Strategy](#)

See also

[SAP NetWeaver 7.5 Maintenance Strategy](#)

Most customers perform a planned maintenance for each productively used SAP application between **once** and four times **a year**. This usually affects **all components** of the given SAP application.

White Paper – Updated in 2021

SAP Kernel Maintenance Strategy in On Premise Landscapes

SAP kernel: function, releases, components, maintenance strategy, ...

20 pages

(basis for many parts of today's talk)

Follow the link:

<https://support.sap.com/deployment-strategies-kernel-abap.pdf>

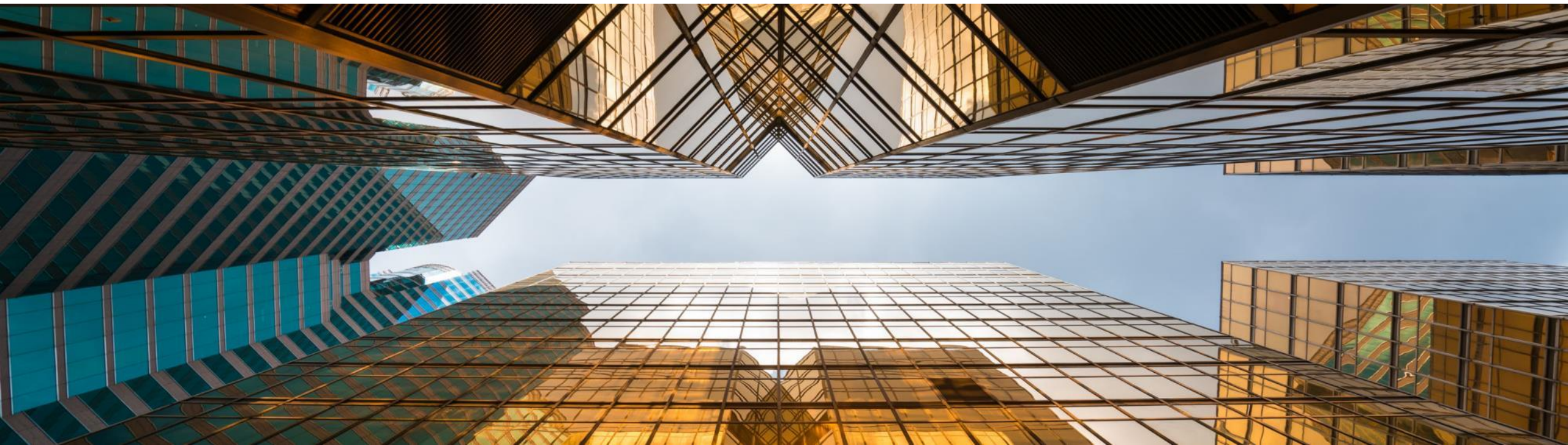


Update Strategy for the Kernel of the Application Server ABAP in On Premise Landscapes

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Kernel Patch Types



Kernel Patch Types and Their Purpose



Kernel Patch Type	Recommended Use	Focus of Production	Kernel Update Scope	README Notes
SP Stack Kernel	all customer installations <i>"large-scale"</i>	kernel stability	whole kernel	release note regression note
Hotfix	troubleshooting <i>„sporadically“</i>	fast delivery	affected components only	regression note
Emergency SP Stack Kernel	troubleshooting in SP Stack Kernel <i>„sporadically“</i>	kernel stability	whole kernel	release note regression note

Kernel Patch Types – Further Delivery Aspects

SP Stack Kernels

Installation during automated upgrades/updates
(SUM, Maintenance Planer)

Hotfixes – Delivery Frequency

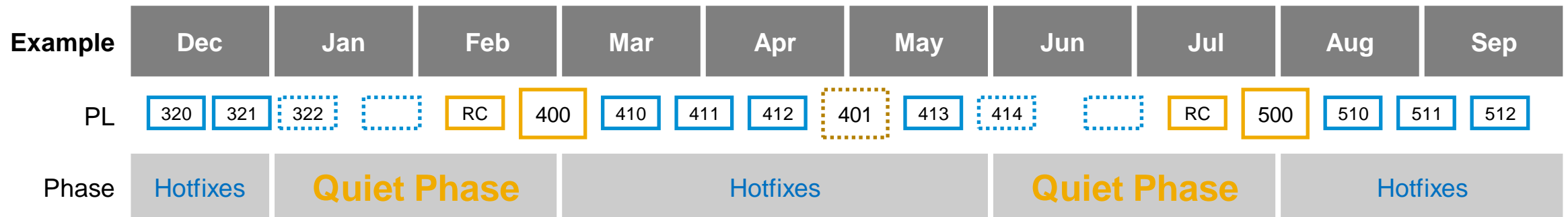
- DW.SAR
Kernel 722: 1x month
Other Kernels: 1x week (Friday)
- Further archives on demand
- Restricted delivery in Quiet Phases

Quality First! Quiet Phases

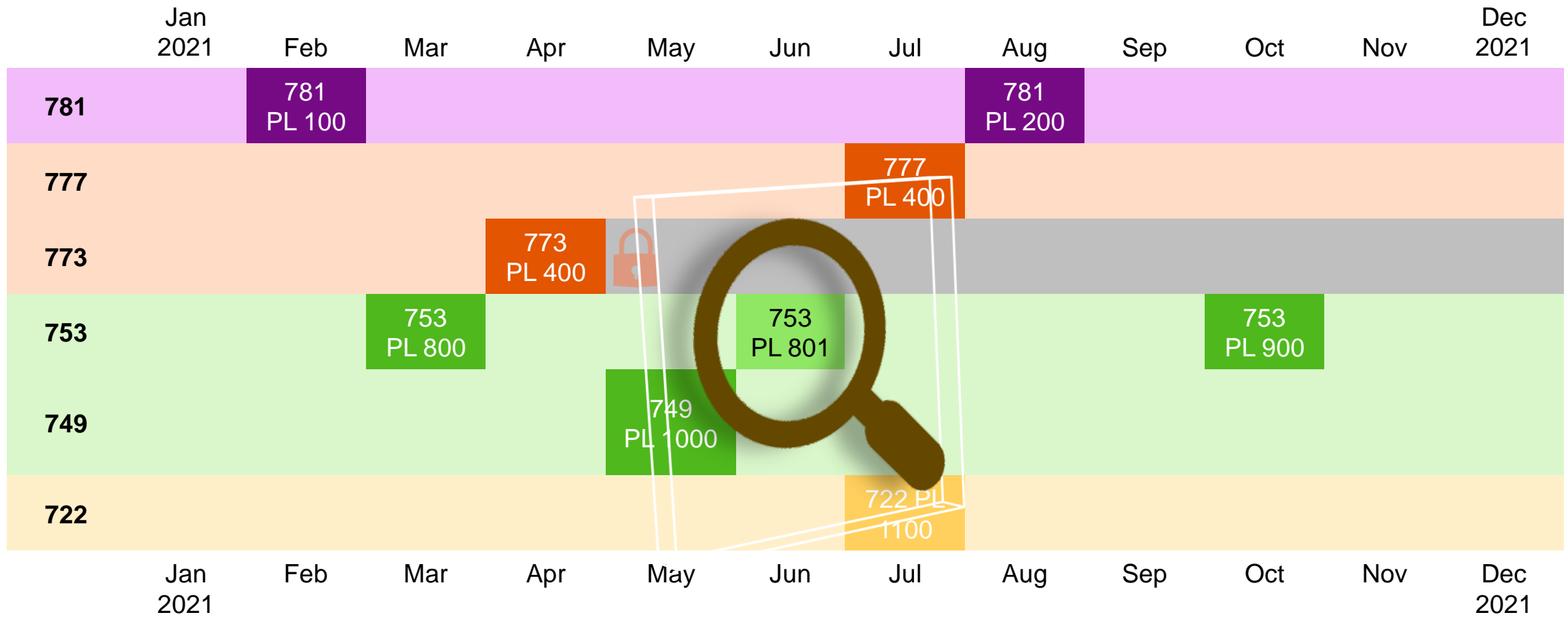
SP Stack Kernel

- 8-week-long **Quiet Phase** before delivery
 - Stabilization
 - Increased testing effort
 - Productive use in SAP's internal systems before delivery

☹️ Longer wait for a fix that does not qualify for SP Stack Kernel



Emergency SP Stack Kernel 753 PL 801



Emergency SP Stack Kernel

- Trigger: Critical „emergency“ issue in the SP Stack Kernel
- Aimed at customers *only*:
 - who have *not yet* installed the original SP Stack Kernel
 - or who are *directly affected* by the "emergency" issue
(To assess relevance, check [release notes](#) of the original and the emergency kernels.)
- For most kernel installations, **no action is required**.

600
601, ..., 609

Example: Emergency SP Stack Kernel 753 PL 602

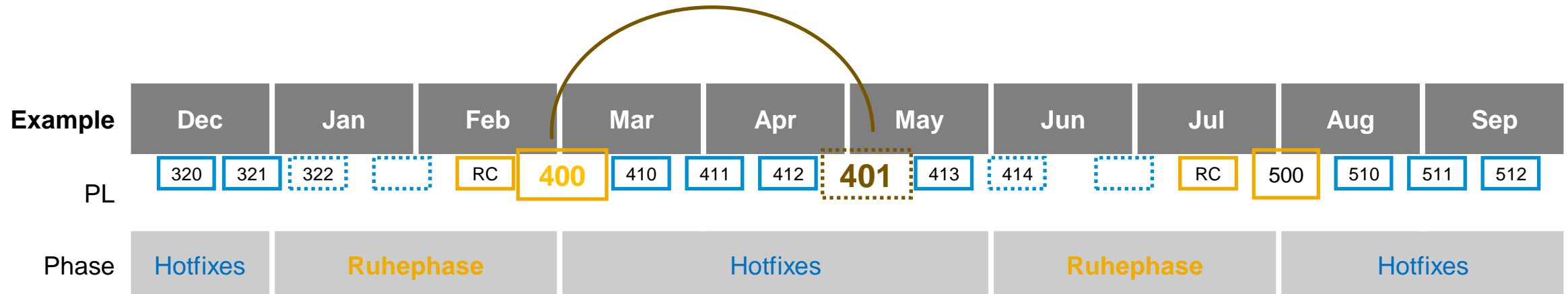
- Trigger: Problem in *MS JDBC Driver, SAP Enterprise Portal on Windows only*
- Only necessary for customers with *MS SQLServer & SAP Enterprise Portal on Windows*

Emergency SP Stack Kernel – Corrects the Original SP Stack Kernel

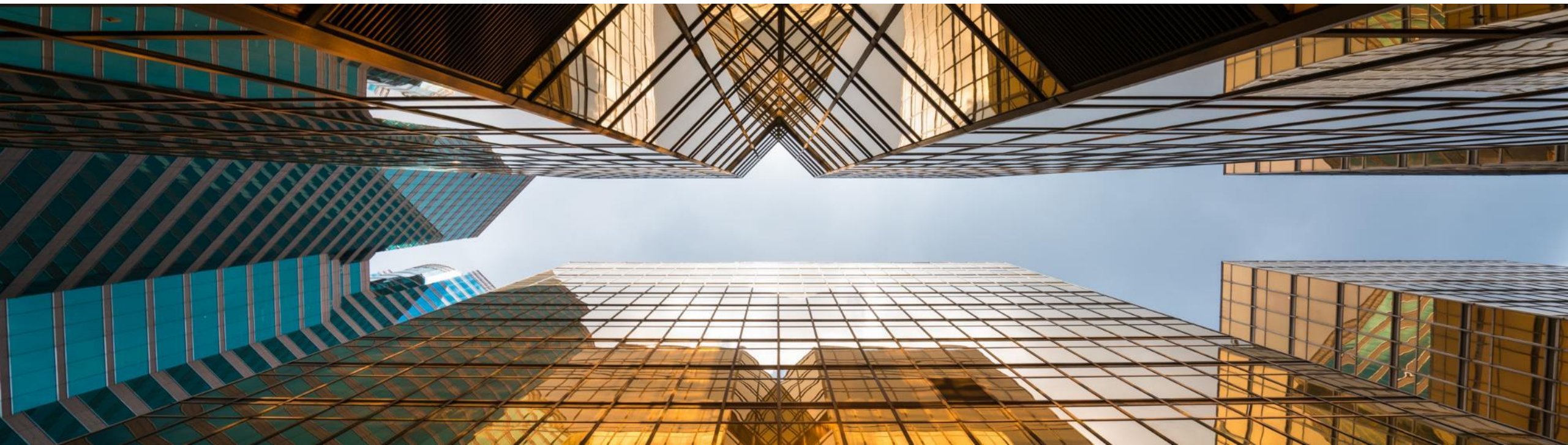
- Emergency SP Stack Kernel **does not** contain accumulated **hotfix** corrections.
- SAP update/upgrade tools use **Emergency SP Stack Kernel** instead of the original **SP Stack Kernel**
- „Emergency“ correction is usually delivered in advance as a **regular hotfix**.

Example: Emergency SP Stack Kernel 753 PL 602

- „Emergency“ correction was delivered as a hotfix in PL 612.



Recommendations



Support Package Stack Strategy → SP Stack Kernel

If you follow the [SAP Support Package Stack Strategy](#), the *latest SP Stack Kernel* is installed automatically.

Hence the name: **SP Stack Kernel**

SP Stack Kernel – “README” Notes

Check the documentation of your SP Stack Kernel:

- release note
- DCK note (in DCK case)
- regression note

2556153 - Using Kernel 7.53 instead of Kernel 7.40, 7.41, 7.42, 7.45, or 7.49 ▼ Show Changes ↓ ⋮

Version 16 from 09.10.2020 in English

[Description](#) [Software Components](#) [References](#) ▼ [Attachments](#) [Attributes](#) [Languages](#)

You want to use Kernel 7.53 instead of Kernel 7.40, 7.41, 7.42, 7.45, or 7.49.

Make sure that all platform-specific, database-specific, and other system requirements for Kernel 7.53 are met. See SAP Note [1969546](#) for more information. If you want to use Kernel 7.53 on HP-UX, refer to SAP Note [2293782](#) as well. For Linux Release SLES 11, RHEL 6, and OL 6, note the requirements specified in SAP Note [2195019](#) for the runtime environment of the operating system.

3066437 - SAP Support Package Stack Kernel 7.53 Patch Level 801 ▼ Show Changes ↓ ⋮

Version 4 from 20.07.2021 in English

[Description](#) [Software Components](#) [This document is referenced by](#) [Attributes](#) [Languages](#)

The SP Stack Kernel 753 PL 801 replaces the SP Stack Kernel 753 PL 800 in order to enable the customers to apply the priority very high SAP Security Note [3007182](#) (announced on [Patch Day June 8th](#)) with an SP Stack Kernel.

Customers that do not require the security update mentioned above can keep using SP Stack Kernel 753 PL 800.

Rolling kernel switch is not supported during kernel update to SP Stack Kernel 753 PL 801. For details see SAP Note [3026990](#).

3070652 - Known regressions in kernel 7.53 patch level 801 ▼ ↓ 📄 ★

Version 1 from 01.07.2021 in English

[Description](#) [Software Components](#) [This document refers to](#) [Attributes](#) [Languages](#)

Review this regression note before installing this kernel patch. Examine the individual SAP Notes listed in the "References" section, in order to determine:

- What regression errors are currently known for kernel 753 PL 801.
- Whether a workaround exists to avoid the specific regression at the currently used PL level.
- Whether a new kernel PL is available to fix the specific regression.

Additional Kernel Patches – Targeted Troubleshooting Only

“never change a **running system**”

Apply additional kernel patches only to solve specific issues.
This includes security kernel patches.

First Choice: Latest SP Stack Kernel, Second Choice: Hotfix

825 ... 830 ... **900** 910 ... 915

“safe harbor”

In the event of an error, use the **latest SP Stack Kernel** if it contains the correction.

Install a **hotfix** only if the error is not yet fixed in the SP Stack Kernel.

New: Template for Kernel Correction Notes

(as of June 2021)

Kernel correction notes:

The text block explains how to determine the appropriate

patch archive and **patch level**

to install the correction.

3092870 - ABAP Push Channels (APC): Large incoming APC messages fails with an MPI error

Version 1 from 01.09.2021 in English

Description Software Components Support Package Patches This document solves side effects Attributes L >

Solution

This correction is initially delivered with the kernel patch level listed in the "**Support Package Patches**" section of this SAP Note. If there is no entry, the patch is not yet available. You can **subscribe** to this SAP Note to be notified when new patch level entries are added. All higher patch levels also contain the correction.

This correction is delivered with the following kernel archives:

- hotfix - file dw.sar
- SP Stack Kernel - files SAPEXE.SAR and SAPEXEDB.SAR

Follow the SAP recommendations on how to select and install the kernel patch:

1. Apply the latest **SP Stack Kernel** if it contains the correction. For the list of current SP Stack Kernels, see SAP Note [2083594](#) (SAP Kernel Versions and SAP Kernel Patch Levels).
2. Otherwise, the next SP Stack Kernel will deliver the correction. Apply the **hotfix** only if you require the correction on short notice.
3. The correction may not be available for kernel releases that are out of maintenance. Please upgrade to the corresponding downward compatible kernel (**DCK**), see SAP Note [2083594](#) (SAP Kernel Versions and SAP Kernel Patch Levels).
4. Review the **regression note** for the target patch level before installing the patch. For details, see SAP Note [1802333](#) (Finding information about regressions in the SAP kernel).
5. For instructions on how to download and install kernel patches, see SAP Note [19466](#) (Downloading SAP kernel patches).

Find Out about Known Kernel Issues in Advance

“Check regression note”

Before applying a kernel patch:

Find out about known kernel errors in the associated [regression note](#).

Check the regression note regularly (subscribe!)

How Do I Find the Associated Regression Note?

See [SAP Note 1802333](#)
(Finding information about regressions in the SAP kernel)

To find the **regression note** use the search term

"KRNL<xxx>PL<yyy>"

Example: "KRNL753PL816"

3054313 - Known regressions in kernel 7.53 patch level 816
Version 1 from 07.05.2021 in English

on [Software Components](#) This document refers to Attributes Lang >

Number	Component	Title
3046030	BC-CST-DP	AS ABAP: Abortion of stateful HTTP sessions while processing multiple large HTTP requests.
3026990	BC-MID-RFC	RFC Logon - New Internal Logon Ticket - Increased Compatibility Level
3016480	BC-SEC-LGN	Logon with SNC credential from external RFC client works despite having SNCSYSACL entry configured
3016233	BC-SEC-DIR	LDAP Connector: "Could not convert from 410<n> codepage to <mmmm> codepage, rc = 2048"

“README” Notes – Important Part of Kernel Maintenance Strategy

SAP note [2083594](#) (SAP Kernel Versions and SAP Kernel Patch Levels)

Release roadmap notes for each kernel code line

DCK note for each kernel code line

Release note (SP Stack Kernel)

SAP note [1802333](#) (Finding information about regressions in the SAP kernel)

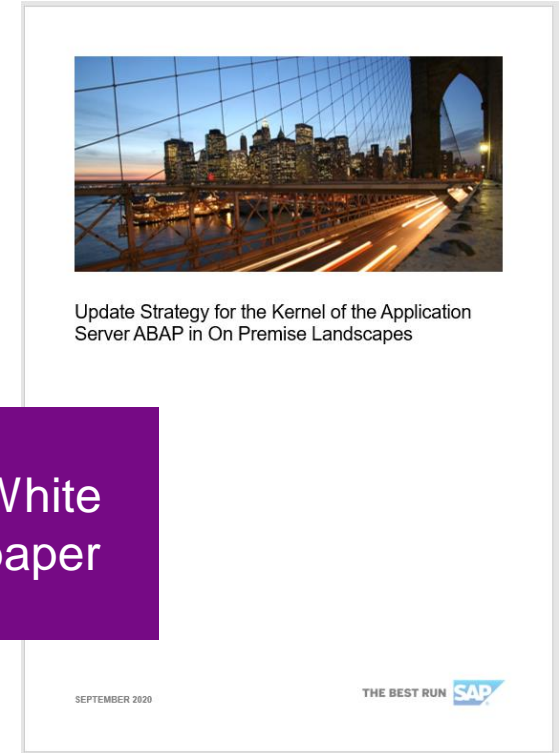
Regression note (SP Stack Kernel und Hotfixes)

[SAP Kernel Important News](#) (SAP Community Wiki)

[SAP HotNews](#) (prio 1 corrections)

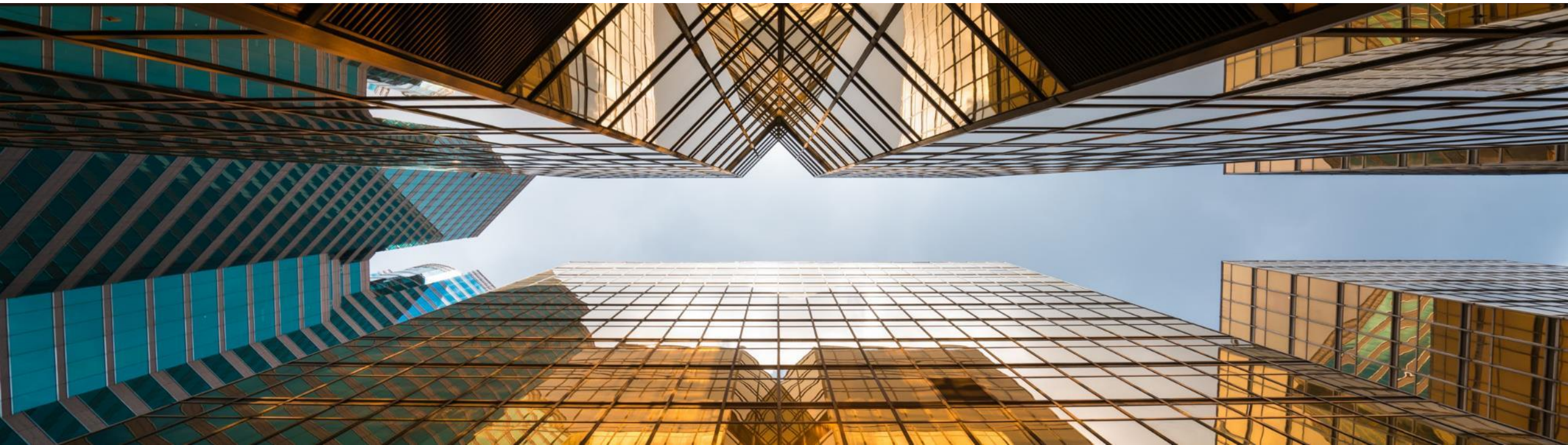
SAP note [19466](#) (Downloading SAP kernel patches)

New: SAP note [2966761](#) (Overview of SAP Kernel Correction Archives)



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Questions and Answers



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