Technical Considerations for Your Move to SAP S/4HANA

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In This Session

Deployment models including Greenfield, Brownfield, and Selective data migration

SAP S/4HANA's application architecture

Data, integration, and conversion considerations

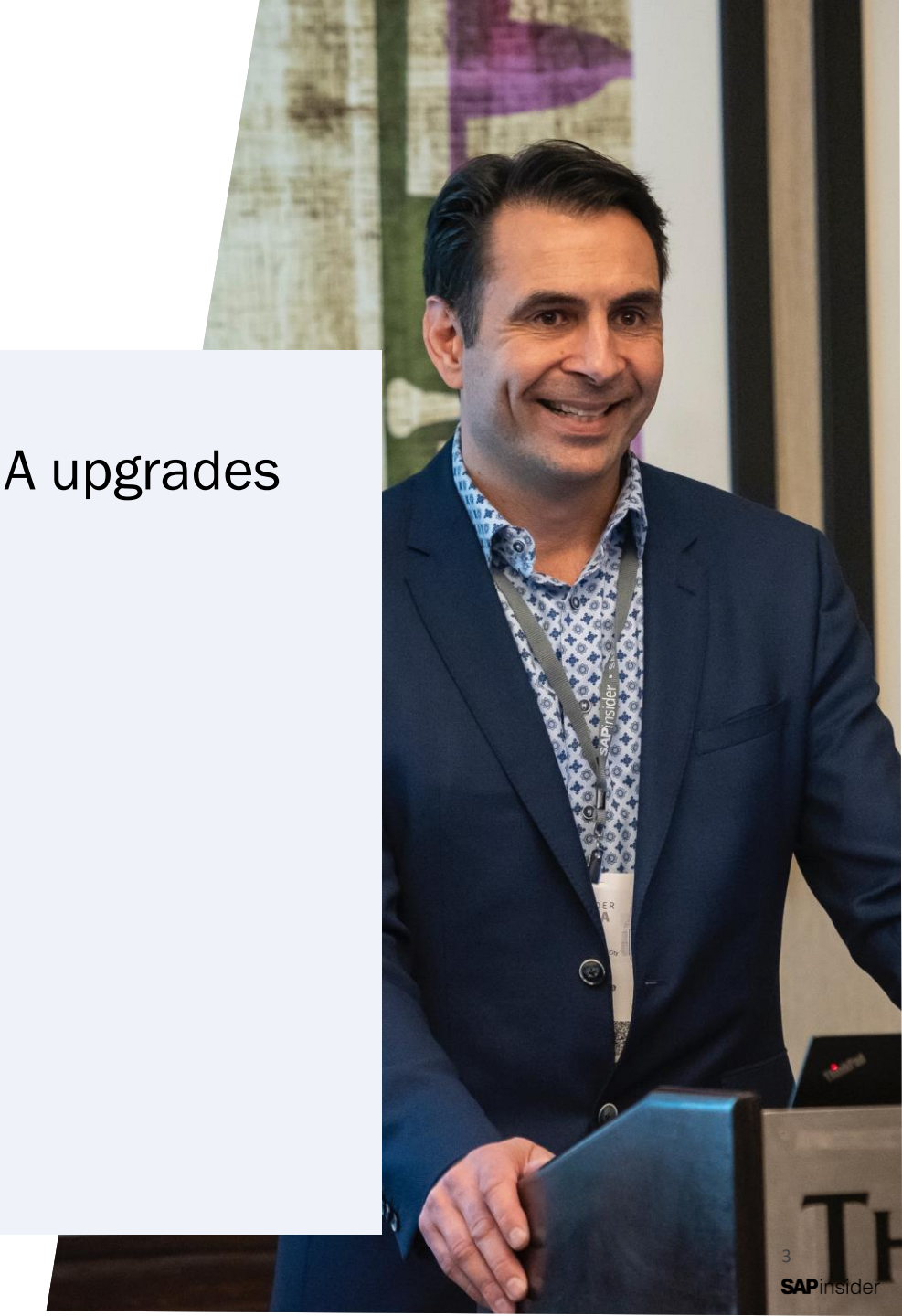
Archiving with SAP S/4HANA

Integration options related to both cloud and on-premise environments

Fiori UI and Single Sign-on

What We'll Cover

- Deployment models for S/4HANA upgrades
- Architecture
- Conversions Required
- Tools for S/4HANA
- Migration Challenges
- Fiori and SSO
- Wrap-Up



Topic 1

Deployment models for S/4HANA upgrades

Why move to S/4HANA from SAP ERP 6.0?

Why move to S/4HANA from SAP ECC?

- Support ending for SAP ECC in 2027, strategic direction
- S/4HANA is designed to make ERP more modern
- Faster and easier to use through a simplified data model
- Lean architecture and a new user experience built on the tile-based SAP Fiori user interface (Web based)
- Integrated with advanced technologies including AI, machine learning, IoT and advanced analytics
- Integration with SAP HANA

Support for SAP S/4HANA until the end of 2040

SAP will also provide mainstream maintenance for core applications of SAP Business Suite (ERP 6.0/ECC) software until the end of 2027 followed by optional extended maintenance until the end of 2030

Choices for S/4HANA – On-Premise, Cloud, SAP Rise

SAP S/4HANA Cloud: previously called essentials edition (ES). This is SaaS public cloud which means that the software is licensed on a subscription basis and is accessed via the Internet.

SAP S/4HANA Cloud extended edition (no longer positioned for new customers)

SAP S/4HANA Cloud, private edition

SAP S/4HANA On-Premise managed by SAP (HEC)

SAP S/4HANA On-Premise: On-Premise or managed by cloud provider Hyperscalers

SAP S/4HANA is available for on-premise or Cloud editions

SAP Rise:

- Runs the on-premise edition or SAP Cloud edition. SAP Rise takes care of many tasks including installation and upgrades.
- SAP Rise is basically the SAP systems running on Azure/AWS/GCP/SAP datacenter with server management supported by SAP internal personnel.
- It frees customers from the difficulties of maintaining a dedicated infrastructure and server management team.

https://help.sap.com/docs/SAP_S4HANA_ON-PREMISE
https://help.sap.com/docs/SAP_S4HANA_CLOUD

S/4HANA Versions and Release Dates

On-Premise or Cloud Versions

- Versioning is different - Example SAP S/4HANA Cloud 2208.1 where on-premise version is 2022 with FPS01 or FPS02

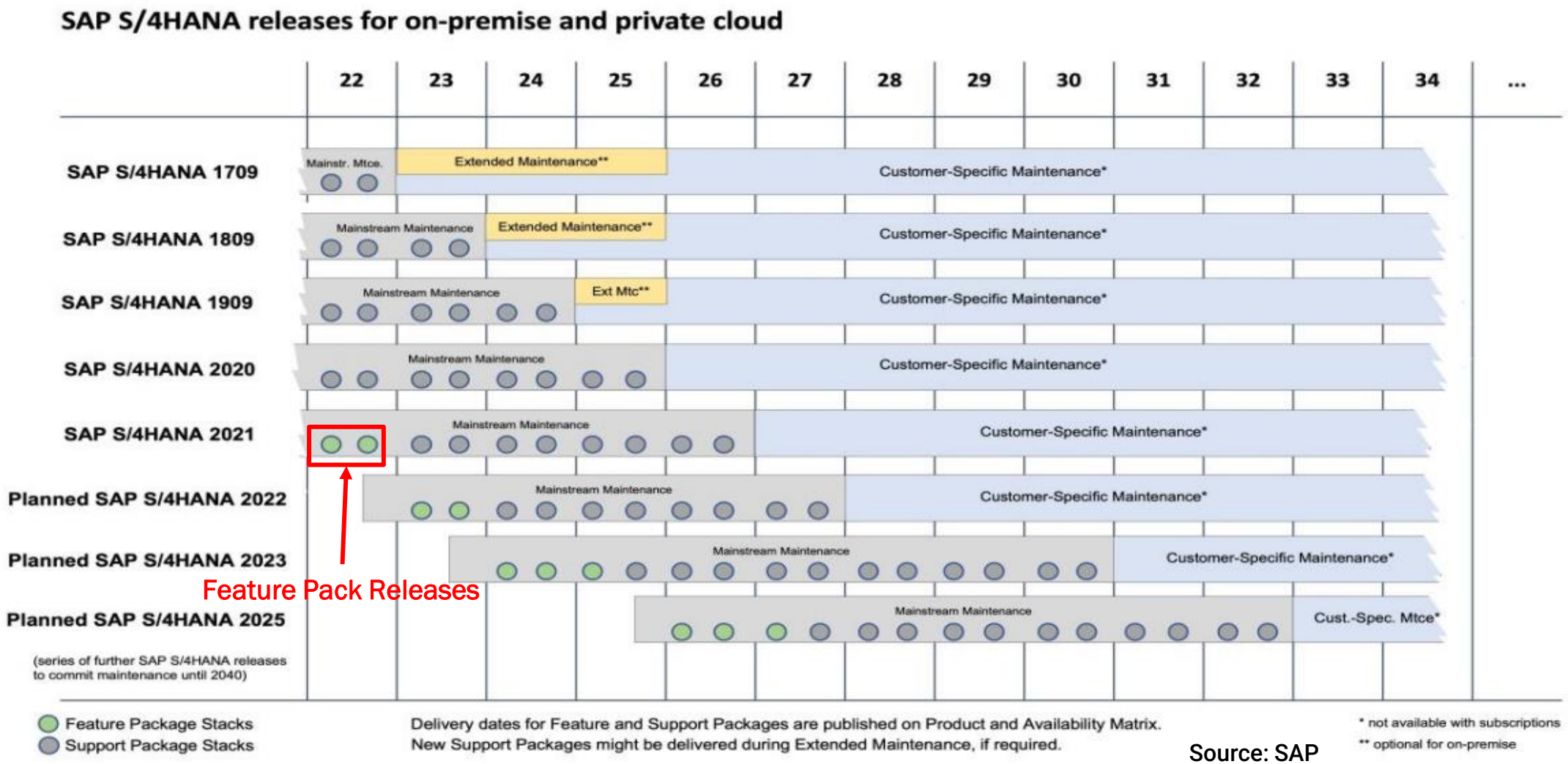
S/4HANA CLOUD Versions

- In 2022 it will have two major releases
- Monthly releases like 2208.1 in September 2022 with new features
- Year major releases

S/4HANA On-Premise Versions

- SAP statement → "No customer left behind"
- The 2023 release of SAP S/4HANA will mark a new chapter with next-generation technology and many alternative SAP S/4HANA capabilities for legacy compatibility scope items for SAP's legacy software.
- Moving to a two-year release cycle starting with SAP S/4HANA 2023 (prior was every year)

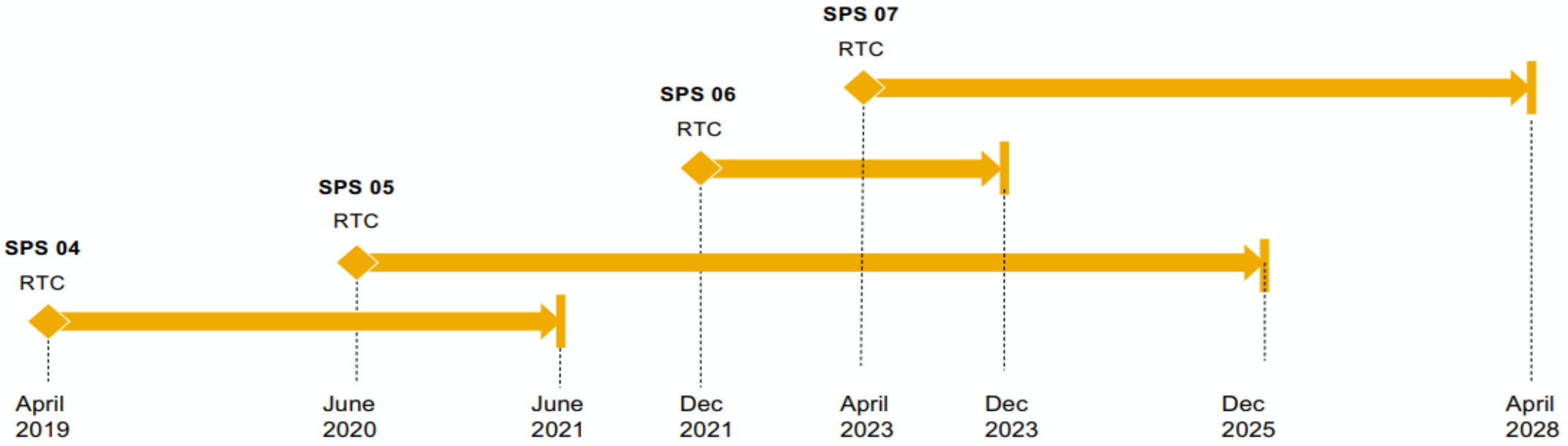
SAP S/4HANA Release Schedule



Source: SAP

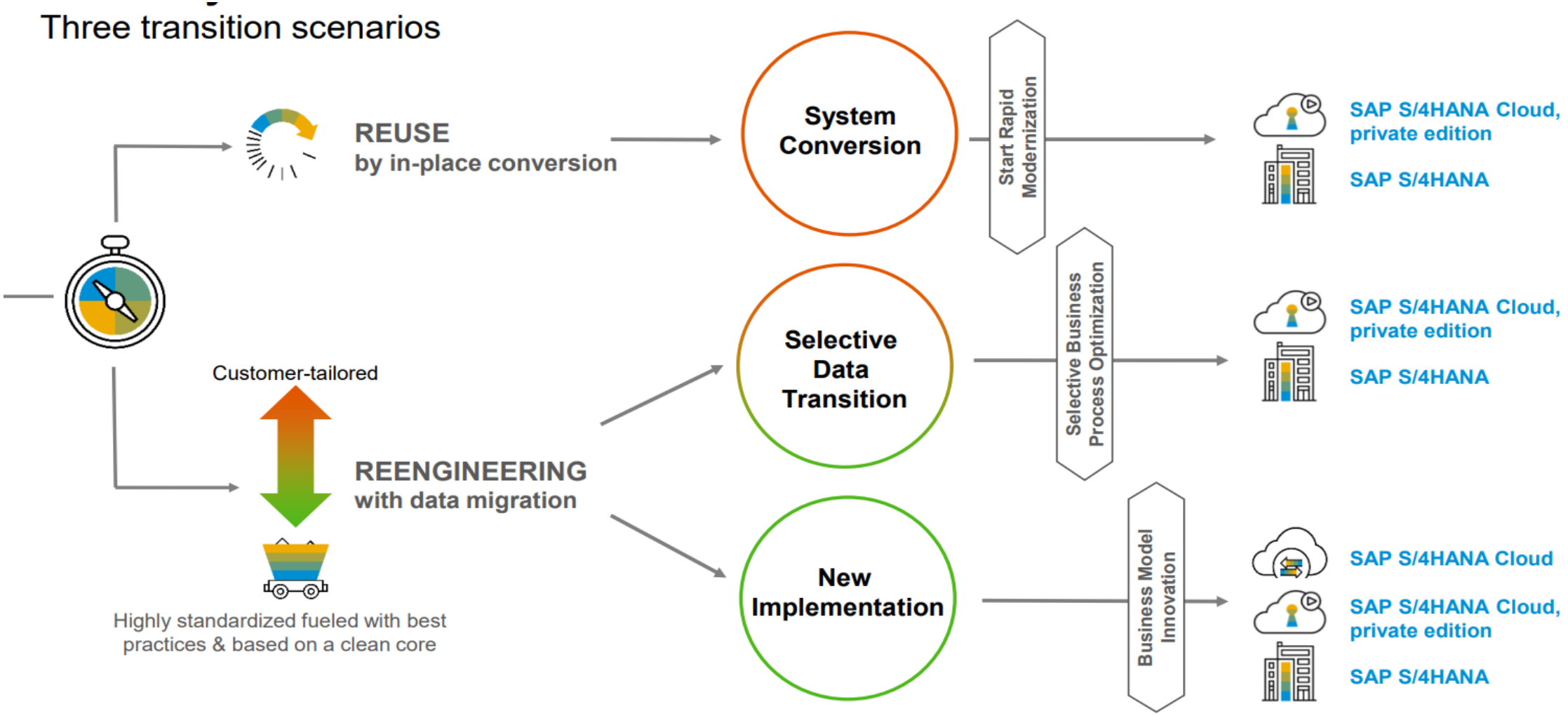
SAP HANA Release Schedule and Support

- S/4HANA runs on SAP HANA exclusively.
- SAP is providing bug fixes and security patches for regular SPS for 2 years after RTC
- SAP will provide Maintenance Revisions for SAP HANA 2.0 SPS05 for a period of 5.5 years after RTC. SPS06 for 2 years and SPS07 for a period of 5 years after RTC.



Source: SAP

Moving to S/4HANA - Transition Scenarios

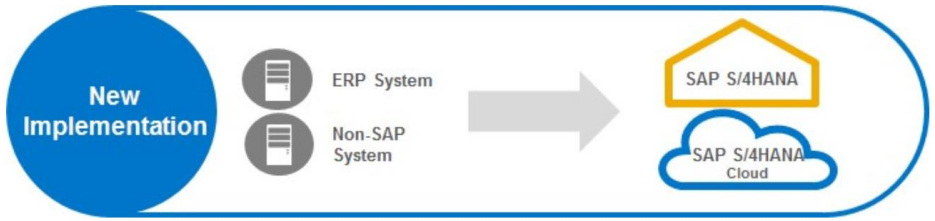


Three Methods to use for Moving to S/4HANA

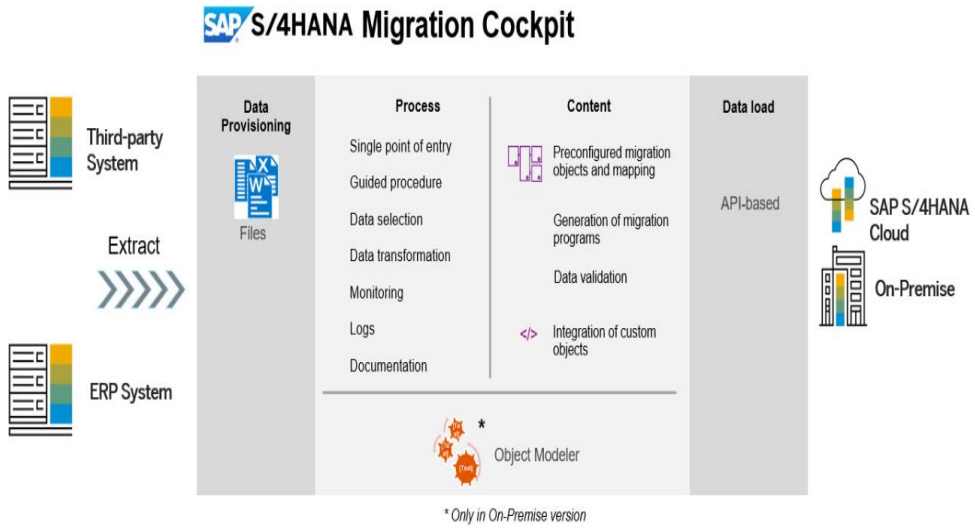
Greenfield (new build or implementation)

- Used for new installations of SAP (not upgrading)
- It can also be used for a complete rebuild and configuration for many reasons such as:
  - Current systems have incompatible or not supported add-ons for moving to S/4HANA so new installation is required. Selective Migration is another alternative method.
  - Opportunity to completely clean up the system and start from scratch and fully leverage the new capabilities of S/4HANA.
  - Migrate in one step to a leaner and company-wide uniform system that is close to the SAP standard. Increases flexibility to move to new releases and help lower operating costs.
  - Major changes like mergers, acquisitions, system consolidations, global support reasons.

Scenario 1 – New Implementation (Greenfield)



- Key Considerations
  - Necessary and Quality of Data to be migrated from source system to S/4 HANA
- Use of Tools
  - SAP Data Services
  - SAP Information Steward
  - SAP S/4 HANA Migration Cockpit (MC)



Phases of MC

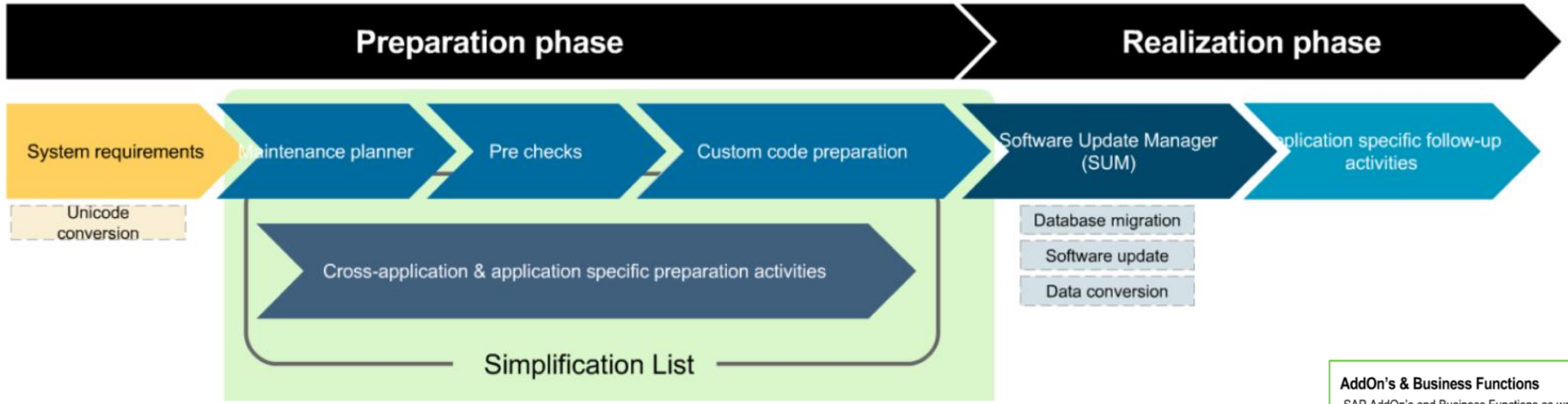
1. Download Template
2. Upload File
3. View and Edit (On-premise only)
4. Activate or Deactivate File
5. Start the Transfer – Data Validation, Value Conversion, Import Simulation, Import Execution

Three Methods to use for Moving to S/4HANA

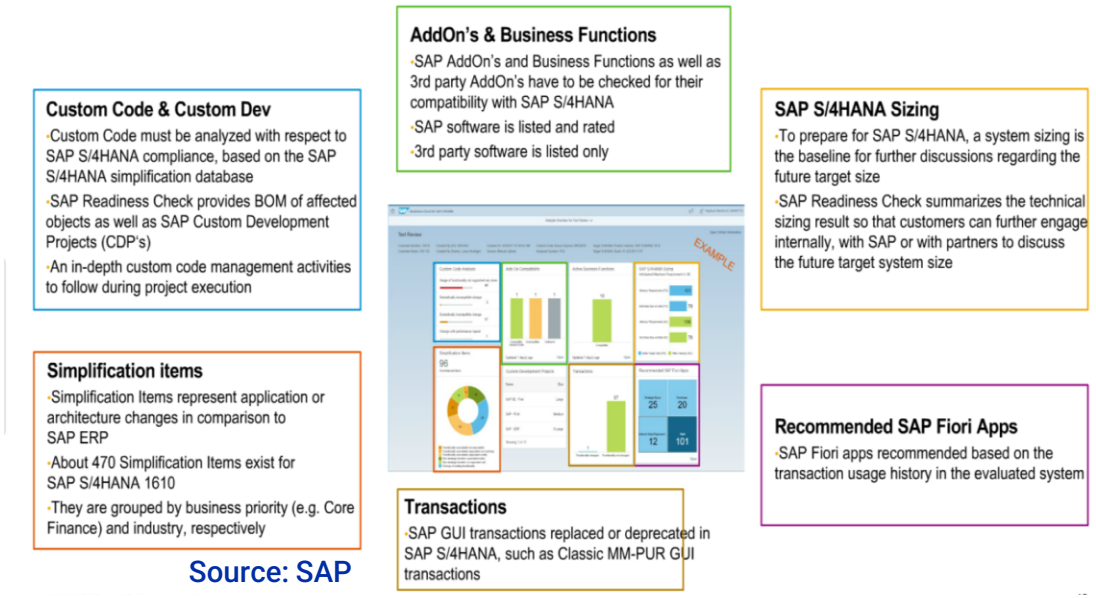
Brownfield (traditional upgrade)

- Convert, upgrade, and migrate from existing ERP 6.0 system (ECC) to SAP S/4HANA bringing over all existing configuration and data
- Reduced effort and duration as compared to selective transformation approach
- Reduction in complexity as there is no need to perform process redesign or transformation
- All data, including historical transaction data, is accessible in the new S/4HANA system

Scenario 2 - System Conversion (Brownfield)



- Simplification List is S/4 version dependent. Describes what happens in S/4 HANA to individual transactions and solution capabilities.
- Custom Code Check is needed against the Simplification Database to understand the compatibility of the custom code in S/4 and if it is required in S/4 HANA version.



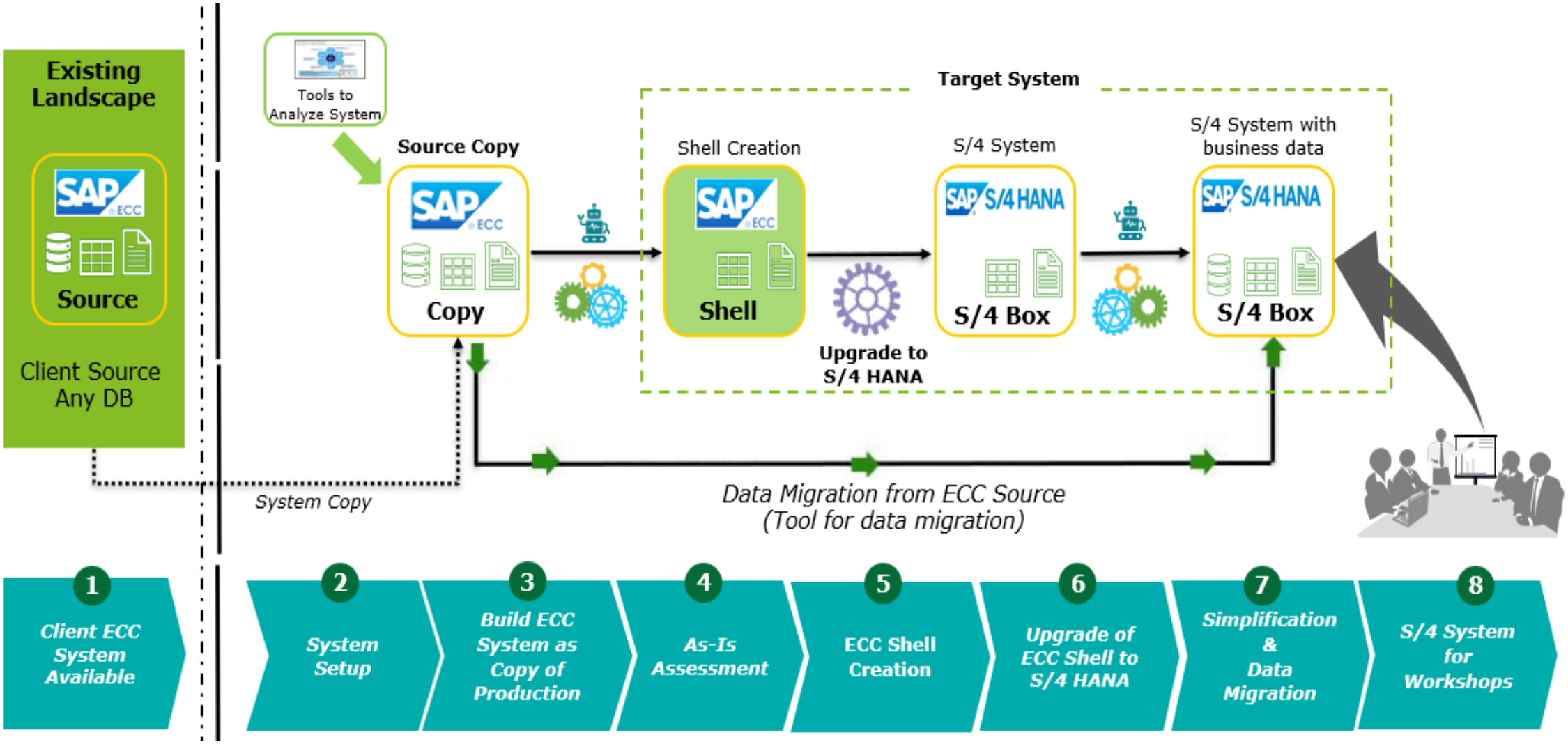
Source: SAP

Three Methods to use for Moving to S/4HANA

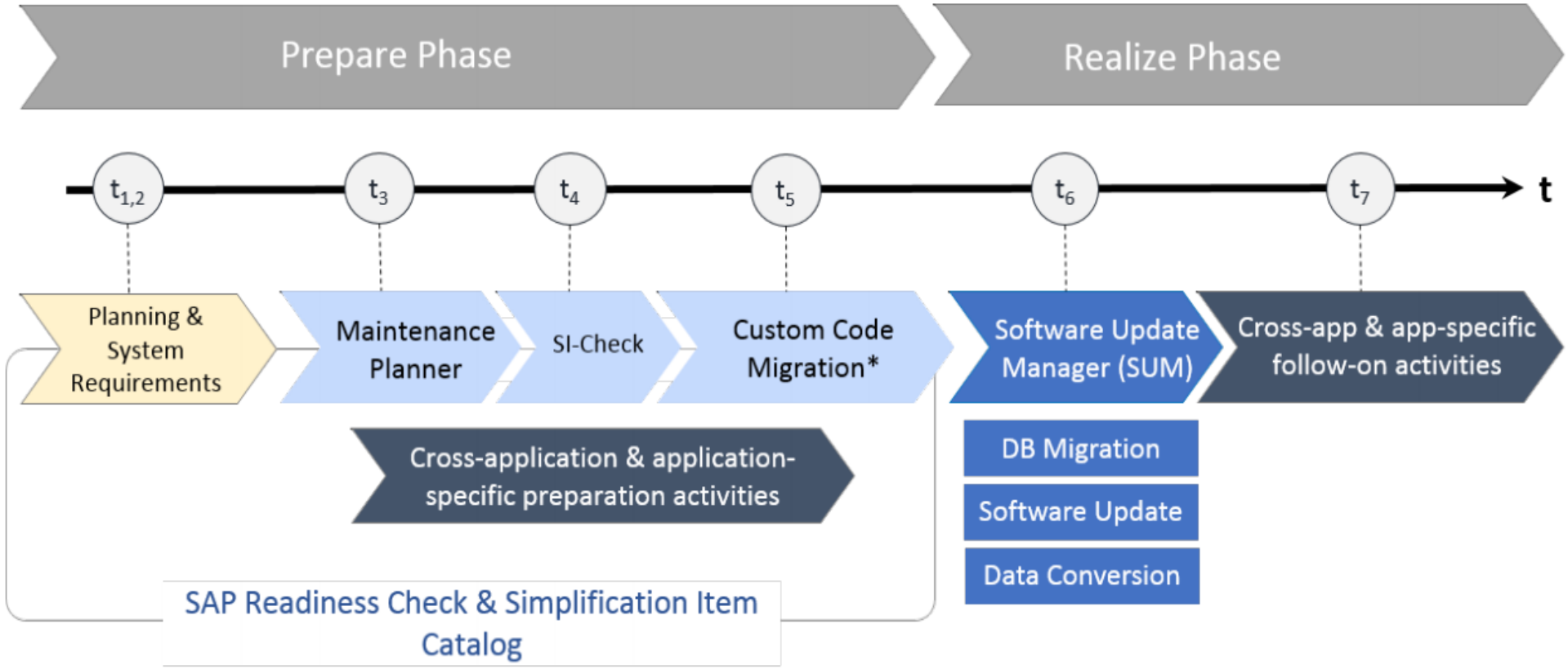
Selective Migration (Data is migrated selectively using tools)

- Opportunity to "carve out" data from existing system and migrate both data and application selectively to the new S/4HANA system
- Great opportunity to redesign in the new system utilizing the full capabilities of S/4HANA
- Similar to a new system implementation with master data load (must use tools to load the data)
- Existing configuration is brought over to help minimize rework of the configuration

Scenario 3 - Selective Migration



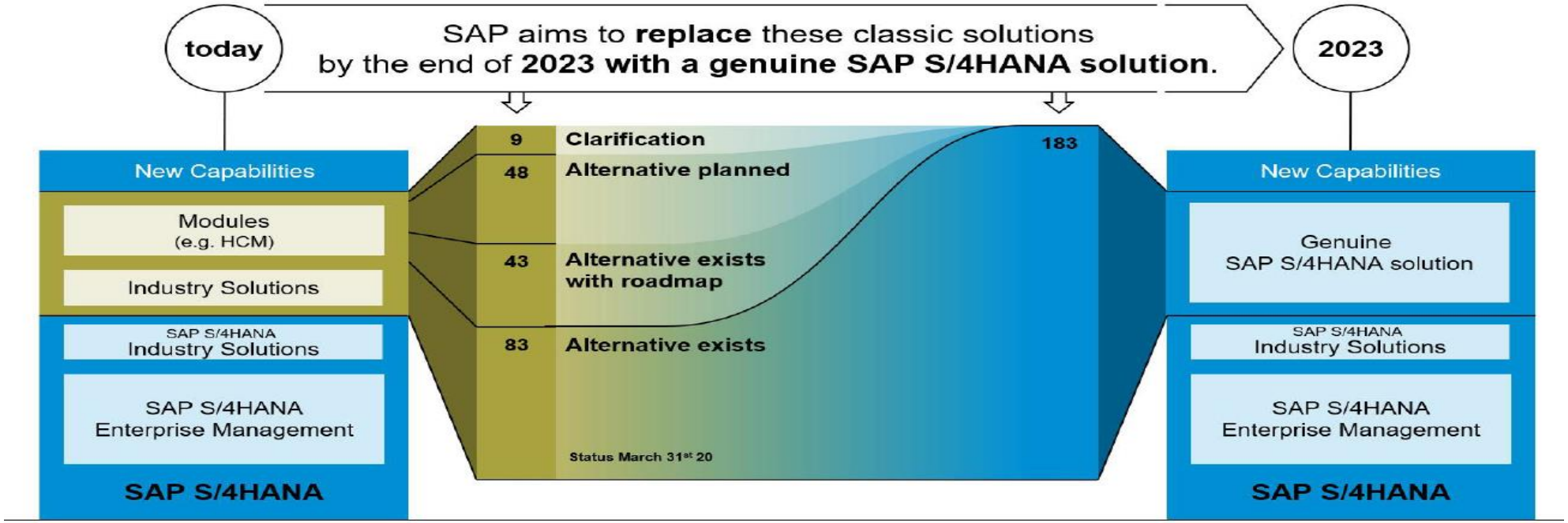
System Conversion Phases - Brownfield



*Consists of preparatory analysis and post-SUM adaptation of custom code.

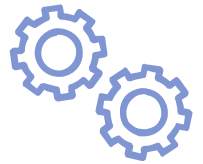
New Capabilities in S/4HANA 2023

- More Compatibility packs are transformed into S/4HANA solutions as of 2023 version.
- HCM is now available as standard in S/4HANA 2022 edition
- Add-ins may be available with SAP Cloud solutions and S/4HANA on-premise or Cloud Editions
- Support stops for Compatibility Scope items after December 31, 2025, use relevance check via the report /SDF/RC_START_CHECK



https://help.sap.com/doc/e2048712f0ab45e791e6d15ba5e20c68/2022/en-US/FSD_OP2022_latest.pdf

Ask Yourself before you Upgrade/Migrate



Check List

Understand where you are and what you want

Is a Unicode Conversion Required?

Is your hardware appropriate for S/4 HANA?

Is initial SP upgrade of your current system required before you plan to move to S/4 HANA?

Have you completed the S/4 HANA readiness check?

Do you want an On-premise or Cloud Deployment?

Do you want to retain historical data?

Have you considered third party integration compatibility with S/4 HANA?

Have you taken into account the effort for training your employees once you move to S/4 HANA?

Recommendations

See if archiving can be done to reduce data volume to be converted

Check the compatibility of the 3rd party products and SAP Add-on's as soon as possible and allocate time for preparations and extensive testing

Plan time for testing of roles and changes in authorizations (SAP security)

Use the opportunity to replace Custom Code with standard functionality where possible (refer to the custom code guides)

Consider migrating from SAPscript forms to Adobe Document Services

Deletion of obsolete data after successful validation of the completed conversion

Make a detailed project plan.

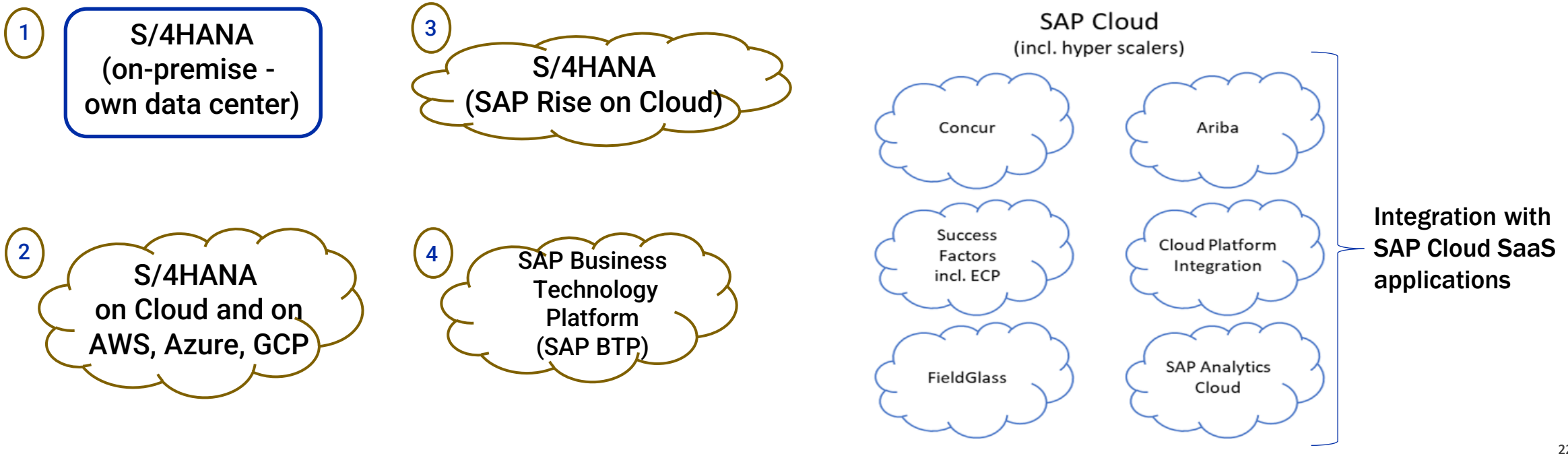
Utilize "runbooks" to document the processes end-to-end

Topic 2

Architecture

Hybrid Architecture - Choices for Running S/4HANA:

1. S/4HANA On-premise edition
2. S/4HANA Cloud or Cloud Private Edition
3. Managed Systems – SAP Rise, SAP HEC, Other services providers
4. SAP Business Technology Platform (SAP BTP) brings together data and analytics, artificial intelligence, application development, automation, and integration



SAP “BTP” Business Technology Platform

BTP is useful for application development, data and analytics, integration, automation, and AI capabilities in one unified environment.

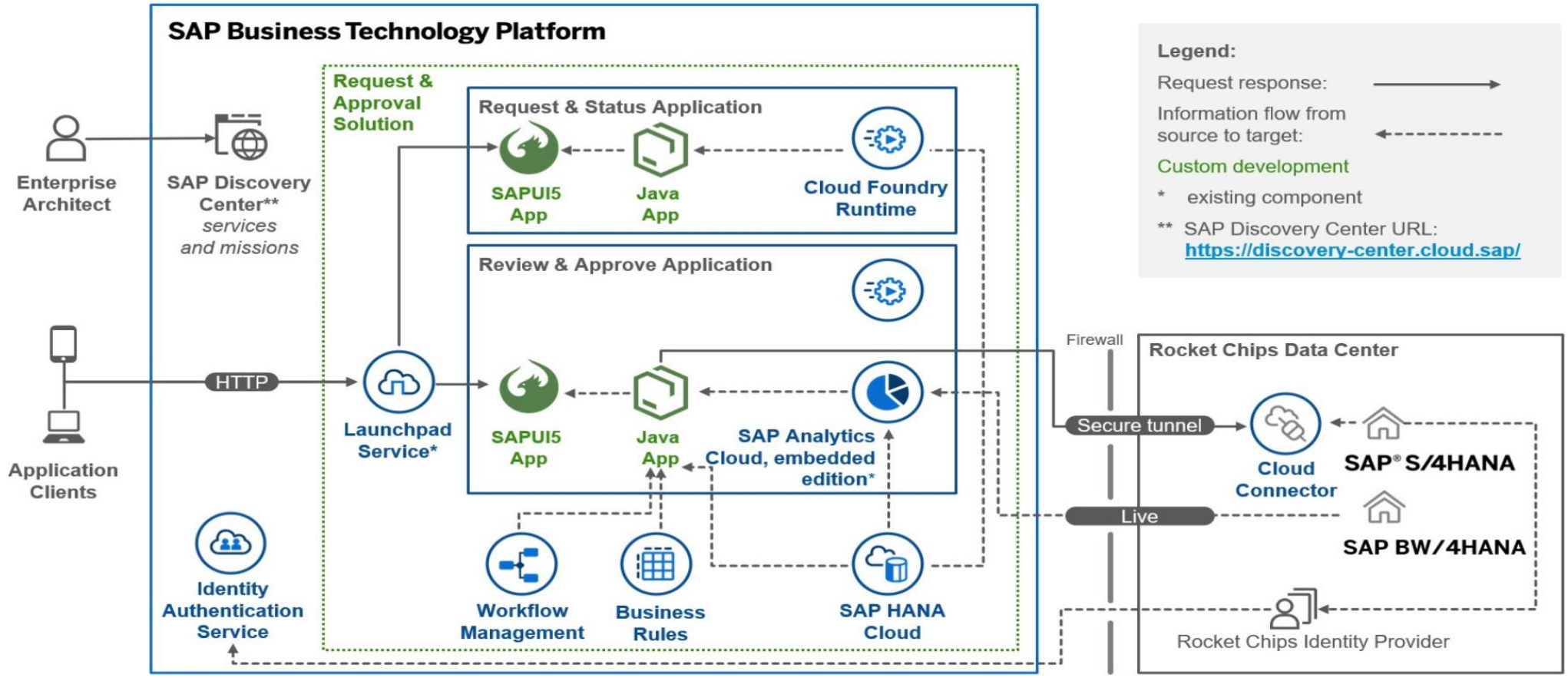
- User Experience: SAP Fiori common look and feel of many SAP solutions
- Security and Identity Management: SAP Cloud Identity services on SAP BTP and provides SSO
- SAP Cloud Identity Services on SAP BTP
- Aligned Domain Models, APIs, and Events: Master Data Integration across a hybrid landscape
- Embedded Analytics across Solutions: Analytical insights and Embedded analytics from SAP Analytics Cloud
- One Workflow Inbox: Unified view tasks across SAP solutions in both mobile and desktop environments
- Coordinated Lifecycle Management: Harmonized provisioning, setup and operations, and monitoring solutions
- End-to-End Process Blueprints: Process blueprints that follow the Industry Reference Architecture standard

Steps for Setup:

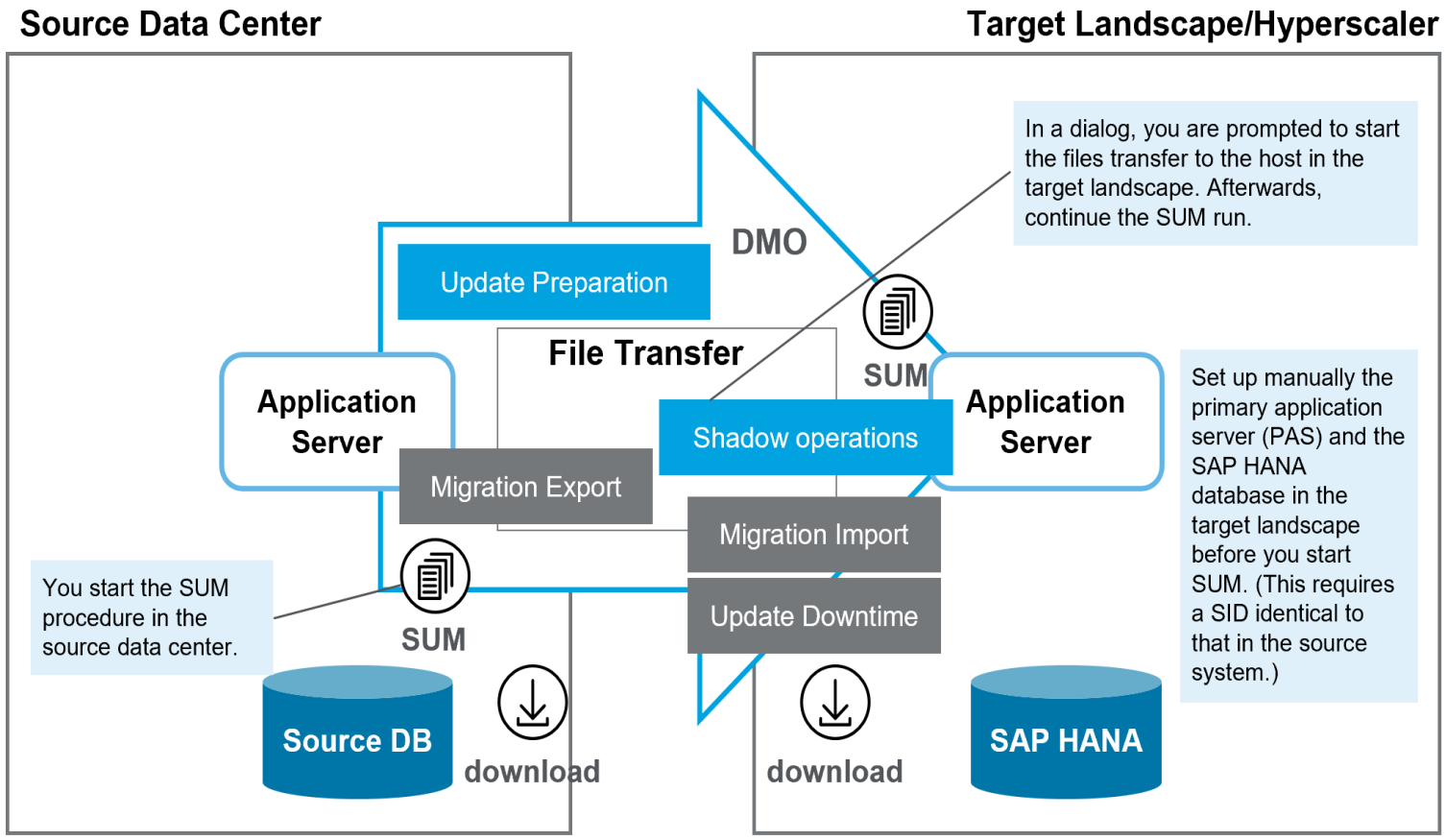
1. Setup SAP Cloud Connector to Connect to the “BTP” platform
2. Configure the connection to get access to the “BTP” capabilities.
3. Users access the platform using defined “subaccounts” and launch the services.

SAP “BTP” Business Technology Platform Diagram

Create business processes, build applications, analytics, and integrations faster, and run mission-critical innovation on major cloud provider infrastructure fully managed by SAP



S/4HANA Upgrade for Brownfield - SUM/DMO with Move Option

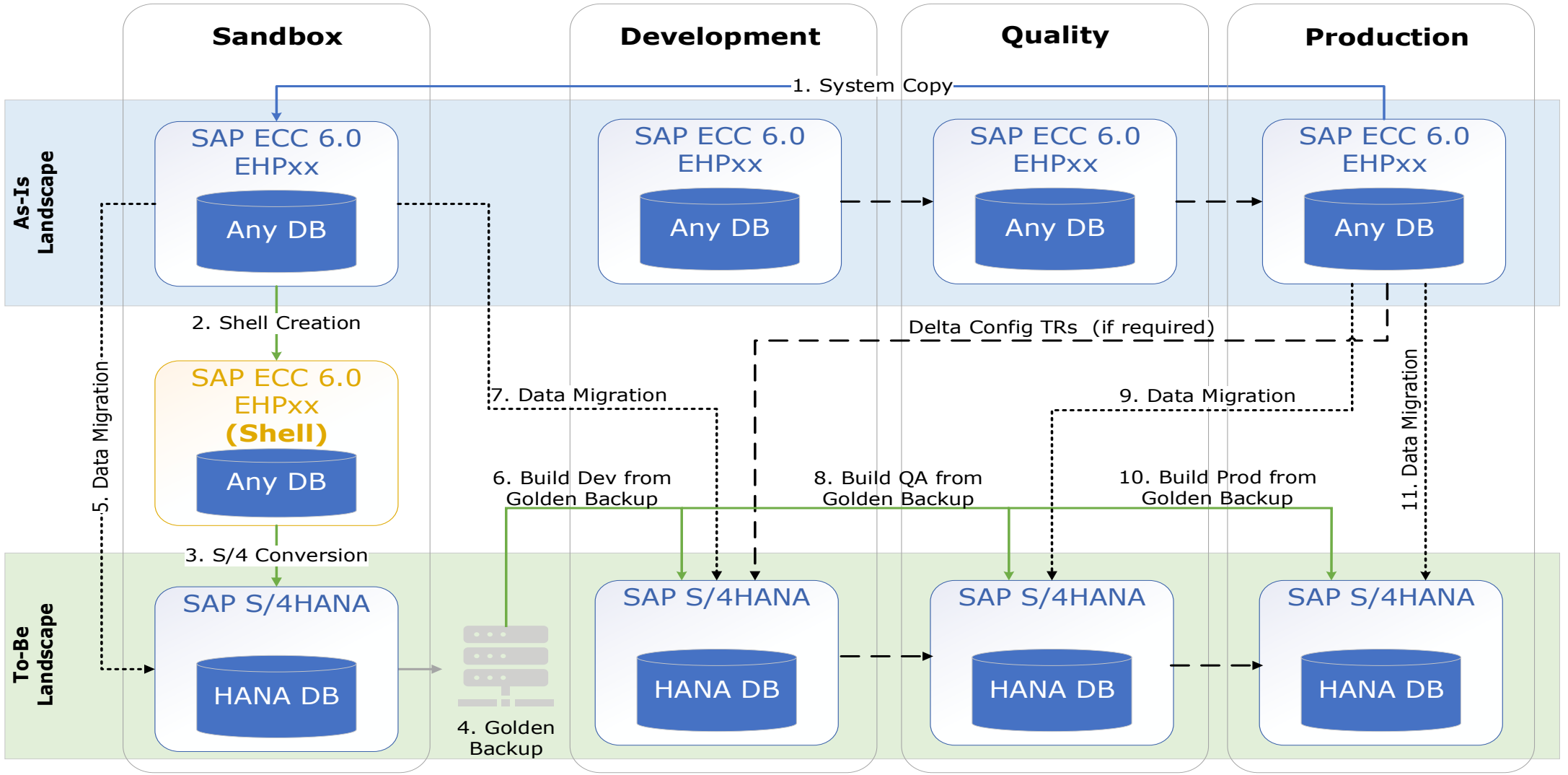


The Software Update Manager offers the Database Migration Option (DMO), which is the combination of the SAP software update with the database migration. Supports changing O/S and DB types. Target is HANA 2.0.

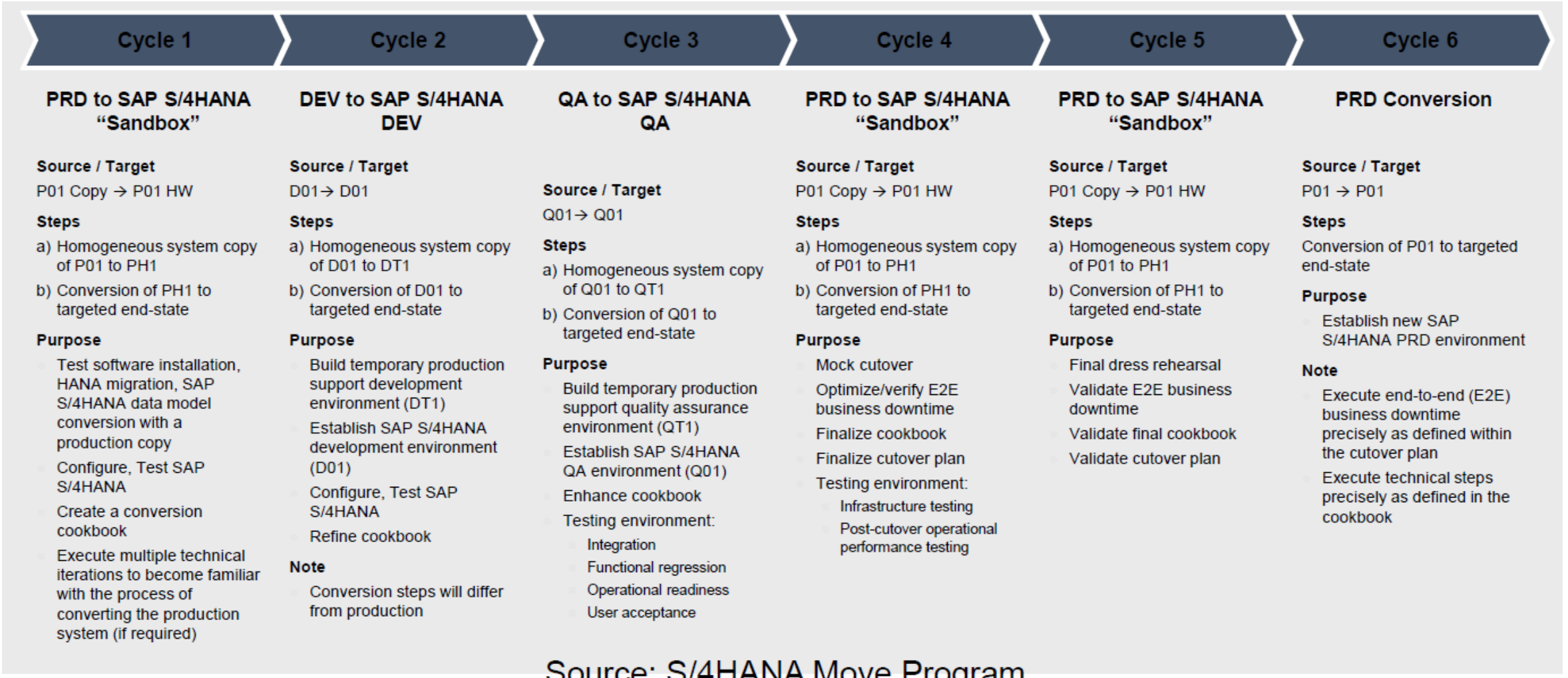
Steps to be followed :

1. Start the SUM tool on PAS of the source system and executes the first part, including the export of the database content into files.
2. The SUM directory along with export files are transferred to the target system.
3. The remaining part of the procedure happens on the target system that changes in the subsequent procedure from downtime to uptime for productive use.

SAP Landscape for a Selective Transformation



Typical Cycles for Conversion (Brownfield Example)



Source: S/4HANA Move Program

Topic 3

Conversions Required

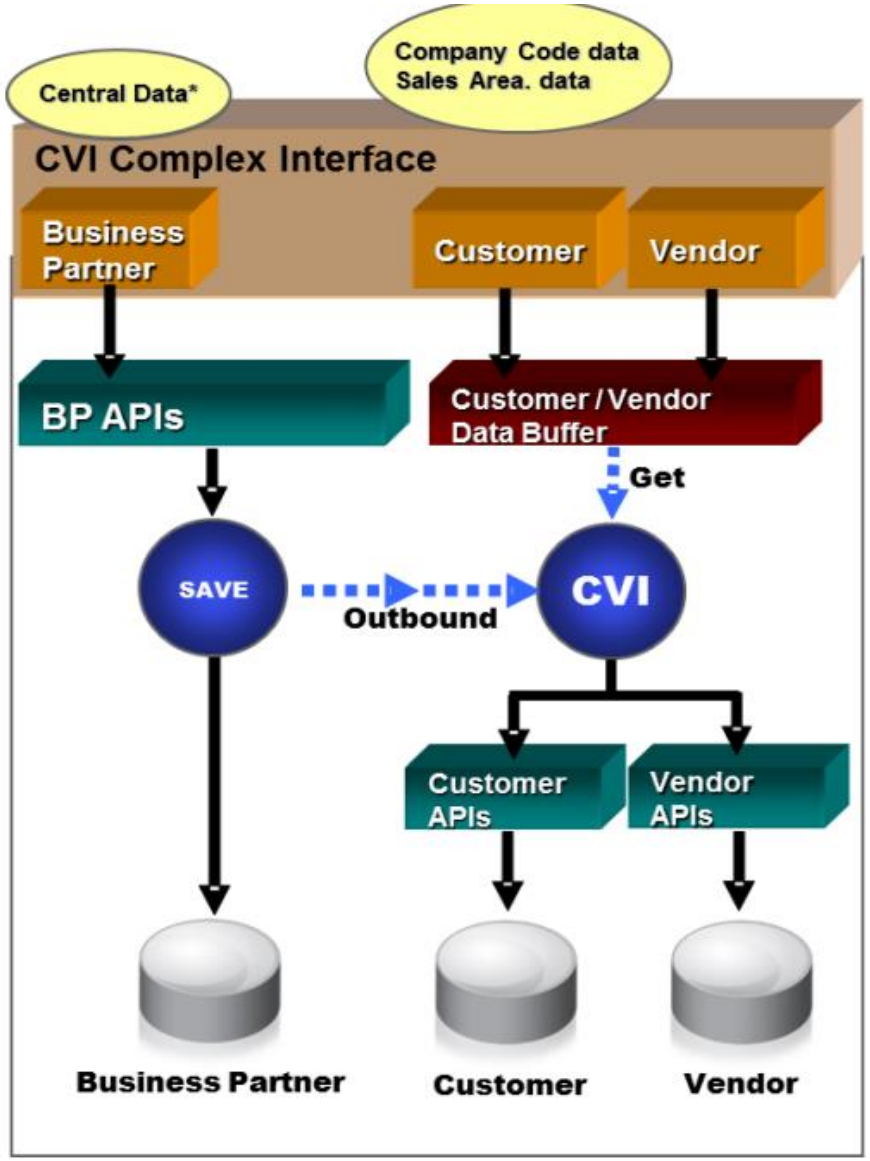
Most Common Data Migration Tools

- SAP Data Services (SDS or BODS) and SAP Information Steward (IS)
- SAP Migration Cockpit (SMC) - transaction LTMC in S/4HANA, replaces LSMW. LTMC is embedded within S/4 HANA both cloud and on-premises versions. It is positioned for use in the transformation and loading of data into S/4 HANA.
- SAP Agile Data Preparation (ADP)
- SAP HANA EIM Smart Data Integration (SDI) / Cloud Platform SDI / Smart Data Quality (SDQ)
- Legacy Systems Migration Workbench (LSMW) – (no longer supported by SAP on S/4HANA)
- Third Party Tools from Vendors - software, tools and services for selective data transition

Data Loading Tools	Common Selective Data Transformation Tools	More Data Transformation Tools
SDS/BODS/IS	SAP (DMLT)	CBS
SMC and LTMC	Syniti	Natuvion
ADP	SNP	Datavard

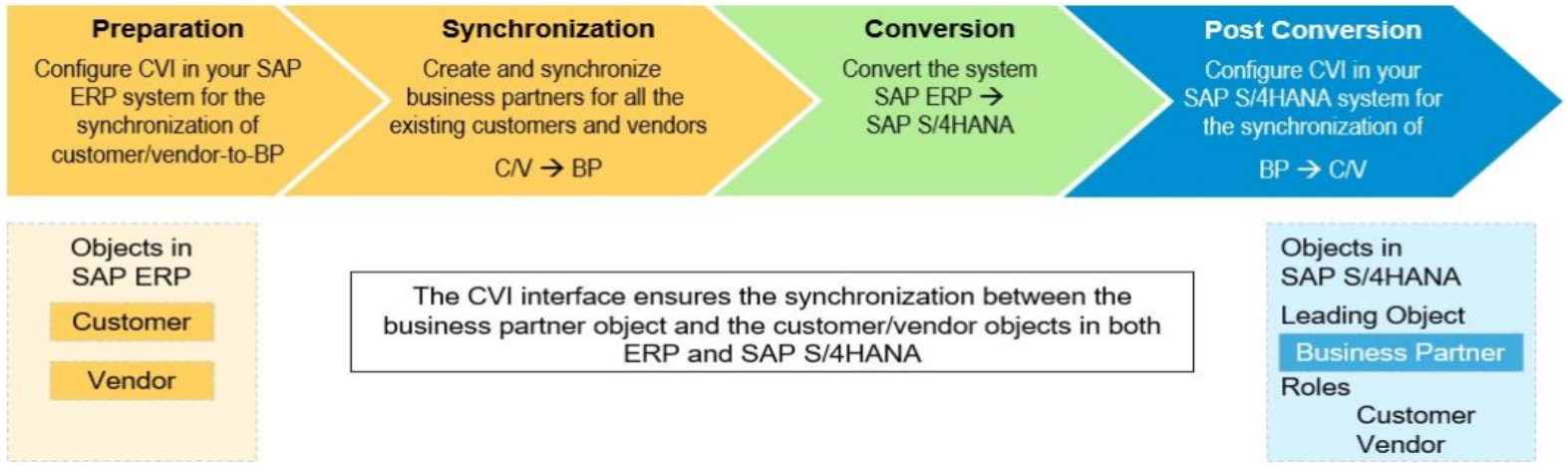
Customer/Vendor Master - CVI Check

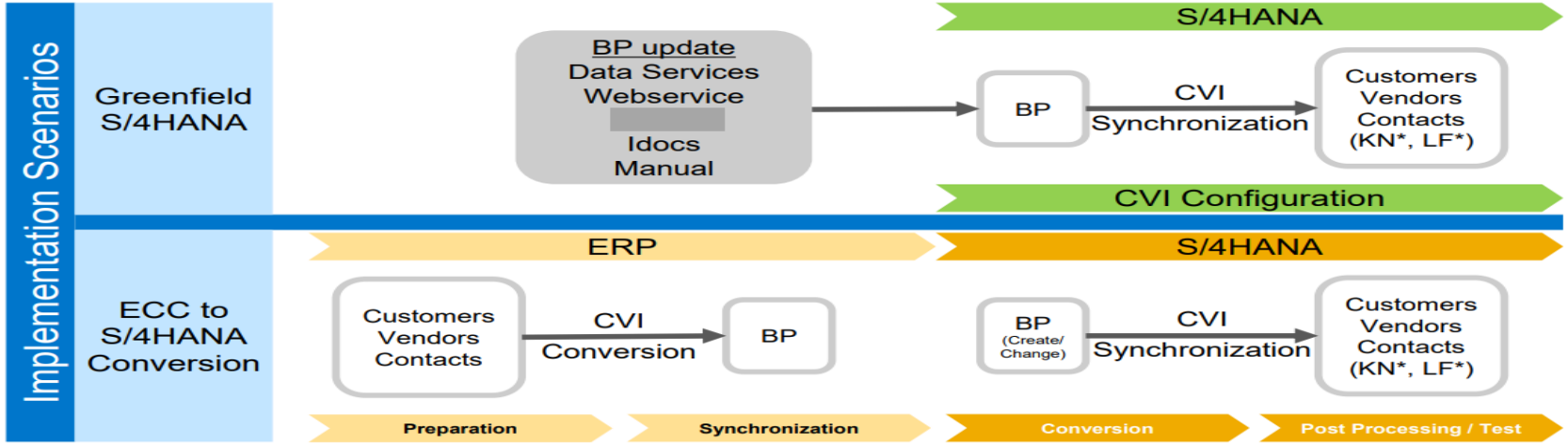
- CVI is an automated procedure supported by the Master Data Synchronization Cockpit tool and is part of the Readiness Check for SAP S/4HANA..
- Used to synchronize Customer Master and Vendor Master objects with SAP Business Partner objects.
- CVI assigns every Customer and Vendor master data object to a newly created SAP Business Partner object and vice versa.
- It is mandatory to have completed the Customer/Vendor integration to move to S/4HANA, on-Premise edition 1909, 2020, 2021, 2022 and onwards (System Conversion approach).



Source: SAP

CVI Conversion Steps and Scenario's





- CVI conversion is performed using the Master Data Synchronization Cockpit tool
- The synchronization happens in both the ECC and then in the S/4HANA systems.

Source: SAP

Switch Framework and Custom Code Conversion

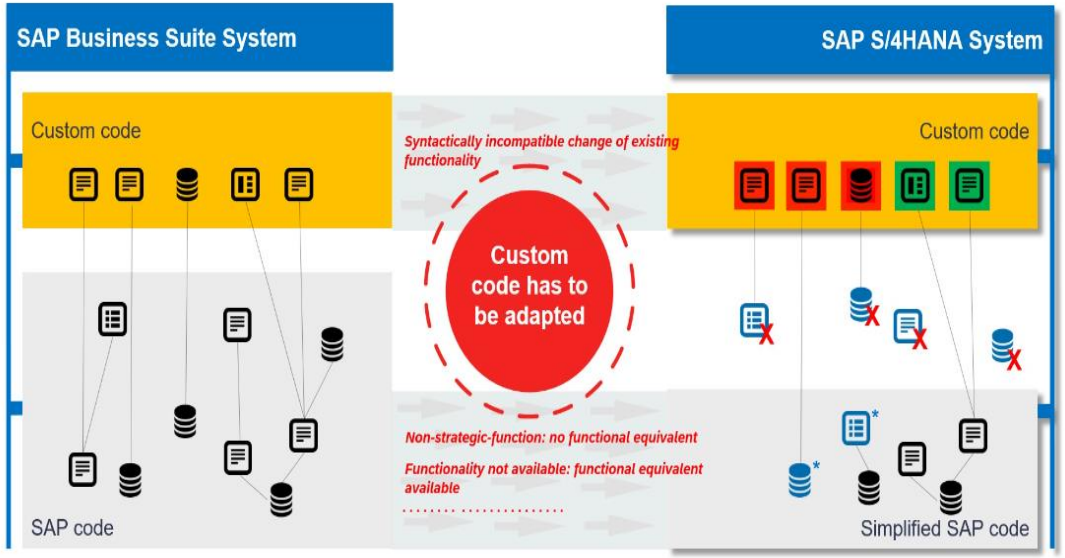
Switch Framework

- Switch on industry solutions and Enterprise Add-Ons
- Validate “Always On/Always Off” requirement for S/4HANA. This may impact existing Switch Framework settings in S/4HANA.
- Business function switched on in the start release system (ERP) but defined as ALWAYS_OFF in SAP S/4HANA will include functionality not available with this release at the current point in time.

Start Release	Target Release		
Status	**Status**	**Conversion**	**New Status**
ON	Always Off	**NO**	OFF
ON	Always On	YES	ON
OFF	Always Off	YES	OFF
OFF	Always On	YES	ON
ON	Customer Switchable	YES	ON
OFF	Customer Switchable	YES	OFF

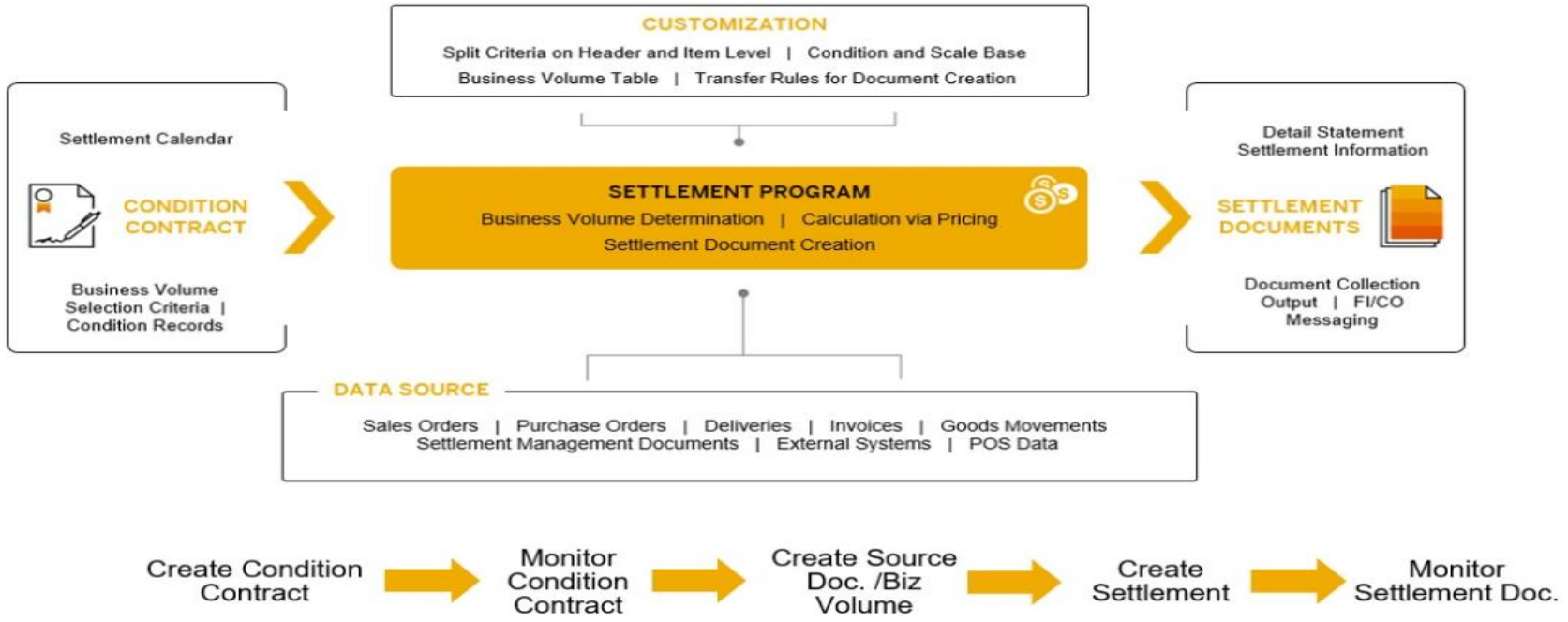
Custom Code Conversion

- Custom Code has to be adapted before upgrading. Use the Custom Code Migration app. Refer to the custom code conversion guide.
- Run the SAP S/4HANA checks to analyze which custom code needs to be adapted to get information about the findings for the development objects that need to be adapted.
- Run the SAP S/4HANA checks based on the ABAP Test Cockpit (ATC).



Functional Change - Settlement Management

- Completely new replacing SD and MM rebate processing
- SAP S/4HANA settlement management uses Central Contract Administration as the single point of entry for contract data and contract related conditions



Functional Changes - MRP Planning

In S/4HANA the MRP logic was simplified. MRP area is active by default and cannot be deactivated.

SAP S/4HANA MRP only plans on plant and MRP area level. Planning on storage location level is no longer supported in SAP S/4HANA.

Planning files conversion, perform the following steps:

- Go to transaction OM0F or SE38 program RMDBVM00 and run the conversion of planning files.
- Activate MRP areas in Customizing for MRP :(transaction OM01) With this activation, the field ‘MRP area’ is also offered for selection in the transactions of the material requirements planning and production planning.
- Run report MRP_AREA_STORAGE_LOC_MIGRATION: Implement SAP note 2216528 and based on the results create the missing MRP Areas.
- Check of MRP types for MRP-Planning & custom code
- Test and Train the final users that will be affected

Topic 4

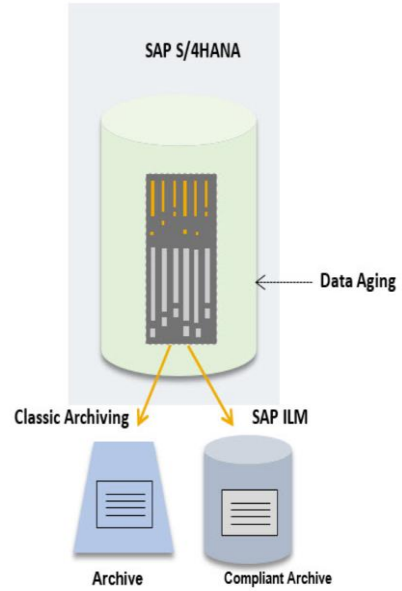
Tools for S/4HANA

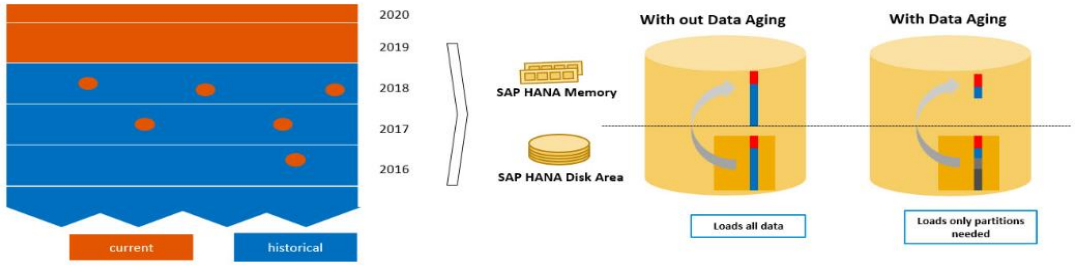
Steps and Tools to Prepare for Upgrade to S/4HANA

1. Review the current software releases, components, add-ins, and ECC switch framework enabled features to verify the compatibility for S/4HANA.
2. Perform a complete detailed system review for the source systems and target systems including connectivity, networking, and storage systems for space needed for the conversion process. Verify that all the hardware and baseline software requirements as published in the relevant SAP documents and SAP notes are met.
3. Simplification Item Catalog - Search and browse upgrade relevant simplification items for targeted release.
4. SAP Readiness Checks - Analyze the source system and identify simplification items, high-level custom code analysis, add-on compatibility, and other items:
   - ✓ Implement CVI to synchronize the Customer Master and Vendor Master objects with SAP Business Partner objects
   - ✓ Relevance check produces a customized list of relevant simplification items for the ECC system determined on rules maintained in the simplification item catalog
   - ✓ Consistency check to analyze the consistency of the system in preparation for the conversion or upgrade using Software Update Manager
   - ✓ Utilize the ABAP Test Cockpit (ATC)
5. Custom Code Migration Guide for adapting custom code. as part of the readiness check for the ABAP program.
6. Maintenance Planner used for software components preparation, download, and stack XML file creation
7. Software Update Manager 2.0 - SAP SUM/DMO tool to perform the software upgrade and migration to S/4HANA

Archiving Data and “NSE” using S/4HANA

- Archiving capabilities continue as a method for removing older data from S/4HANA.
- There is no provision for the full retrieval of previously archived data. You can only display archived documents.
- Standard existing reports (enabled to read from archive) that were available in ECC and now available in S/4 can still display the FI data that was archived before upgrade to S/4. The infostructures will not change and hence the display will work. New reports based on "HANA Live" CDS View using Odata protocol will "Not" read from archive.
- NSE (Native Storage Extensions) may also be used with S/4HANA for warm storage
- Data aging lets you move business objects that you no longer need in your day to day work out of the current data store into a historical data store, typically kept on hard disk. (new development of Data Aging is limited by SAP)
- NOTE: You can still access and view aged document’s but you cannot change or carry out any other activities on them. To change an aged document, you must first restore it to the current data store.





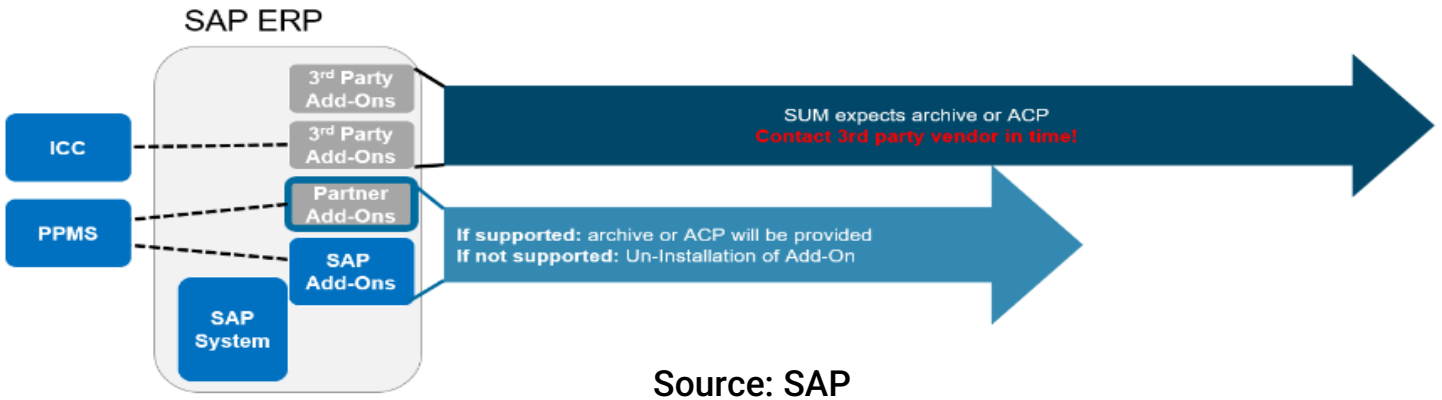
Source: SAP

Topic 5

Migration Challenges

Existing Add-On's in SAP ERP 6.0

- Moving to S/4HANA and challenges with Add-on's in the system
  - Usage without any change - can be used in SAP S/4HANA without any change (use "Attribute-Change-Package" (ACP))
  - Usage after preparation - can be used in SAP S/4HANA with specific pre activities to be completed
  - No longer relevant - no longer relevant in SAP-S/4HANA, the add-On needs to be uninstalled as part of the conversion/upgrade procedure
  - NOTE - If an uninstaller is not available by the vendor, this can be a blocker for the system conversion
  - Successor version is required: Add-On will be replaced by a new version on SAP S/4HANA during the SUM upgrade process



Source: SAP

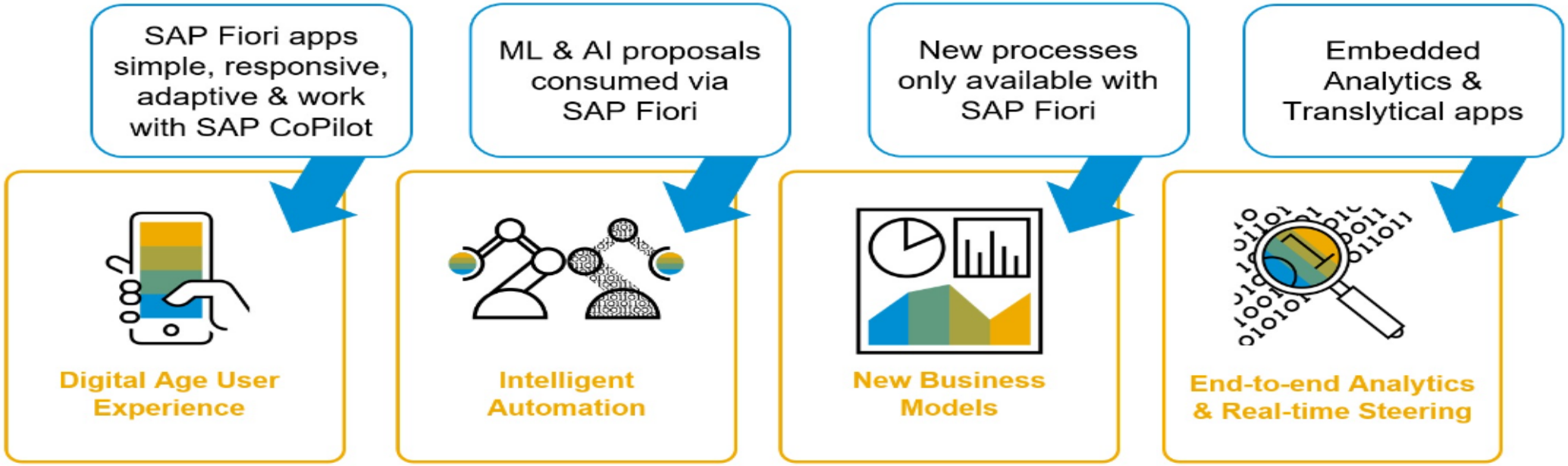
SAP NOTES:
3094994 - Compatible partner products
2214409 - SAP S/4HANA: Compatible Add-Ons

Topic 6

Fiori and SSO

Fiori User Interface for Business Applications

- SAP Fiori UX is new UI experience target architecture for SAP S/4HANA
- SAP Fiori and SAP GUI are both supported (for exceptions see Simplification List)
- Relevance and readiness analysis recommend – Find Fiori Apps based on T-codes
- SAP Fiori Frontend Server (FES) provides Fiori & central UI components and Maintenance planner considers FES software



SAP Fiori for SAP S/4HANA – New Rapid Content Activation

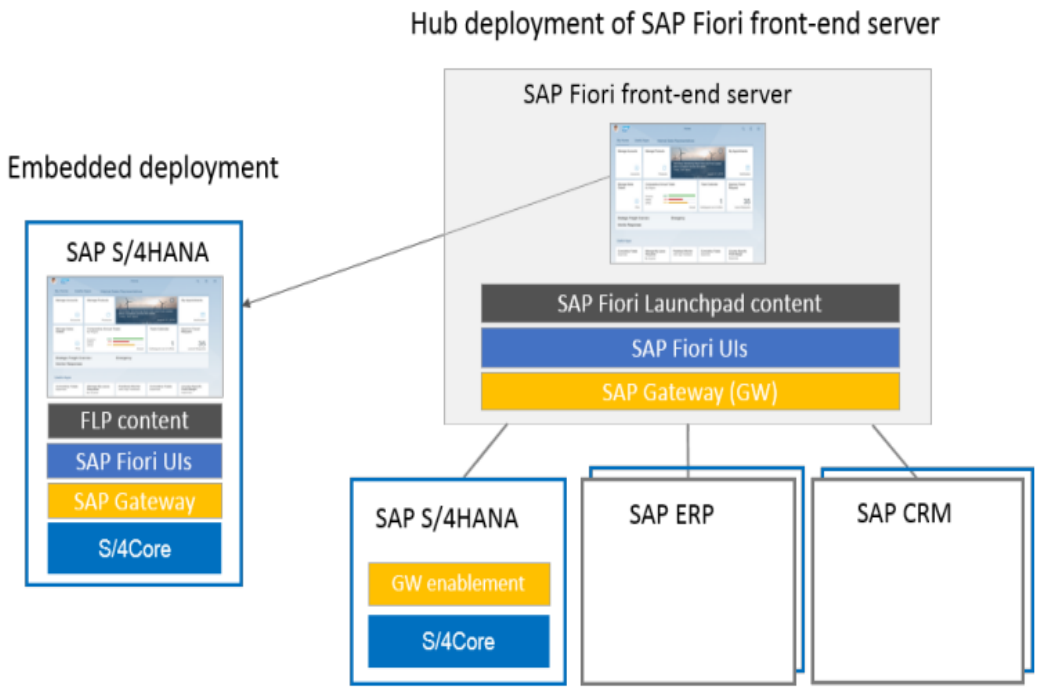
- SAP Fiori is how business users access S/4HANA innovations.
- To enable innovations in Fiori, technical team must activate 100's of SAP Fiori apps and launchpad content. Use the new rapid content activation task lists and dramatically cut the activation effort.
- Performed by activating delivered SAP Business Roles as a consolidated single unit complete with ready-to-test business user ids.
- There are 2 task lists included in Rapid Activation of Fiori in S/4HANA:
  - Task list for activating the Fiori Foundation named SAP_FIORI_FOUNDATION_S4
  - Task list for activating Fiori Content by selected business roles, named SAP_FIORI_CONTENT_ACTIVATION

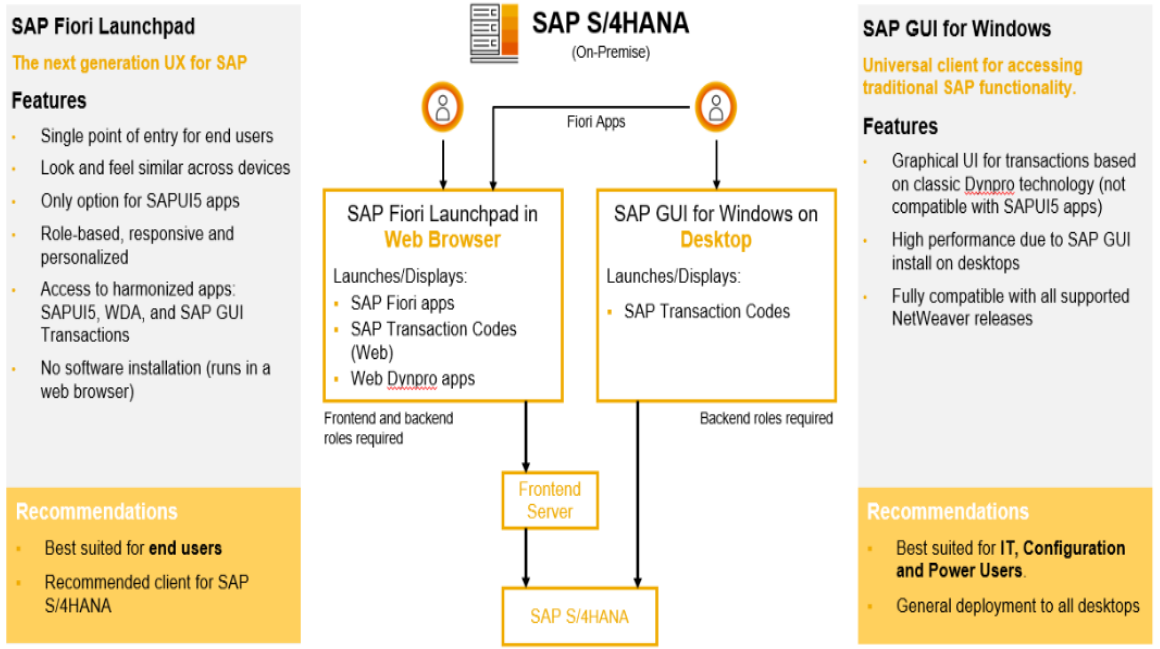
Fiori Rapid Deployment

Source: SAP

SAP Fiori Technical Setup and Gateway

- FES (Front End Server) deployment can be embedded or separate, depends on other backends (type & release). Choice of Central (Hub) or Embedded Gateway
- S/4HANA recommendation is to use the Embedded Gateway when possible (simpler, faster, all in one system)
- Fiori Launchpad and SAP GUI for Windows is supported for access to SAP S/4HANA Systems





Source: SAP

Single Sign On for Web Applications using SAML

As a pre-step, the SAP Fiori Gateway and SSL is properly configured.

The SAP Web Dispatcher or F5 Load balancer is configured to act as reverse proxy for redirecting Fiori URL's to the Fiori Gateway.

Fiori Applications can be securely configured and accessed using SAML authentication which is a common method of single sign-on for Web applications.

It utilizes SAML 2.0 based authentication in conjunction with IdP "Identity Provider" software such as SAP IDP, Ping Federate or Microsoft's Active Directory Federation Service (AD FS).

The user is trusted and authenticates on the SAP system configured as a "Service Provider" using SAML authentication.

Encryption and Masking for certain secure data is available if needed.

Wrap Up

Topics we discussed:

- Understanding the three main deployment models for S/4HANA upgrades – Greenfield, Brownfield, and Selective
- Important key points observations about the architecture for S/4HANA
- Key points about preparing to move to S/4HANA and data conversions and important Tools used for moving to S/4HANA
- Identified a few migration challenges
- Common user interface on Web using Fiori and Single Sign on for seamless access to business processes

Demonstration

S/4HANA System Demo

- Highlighting few points from S/4HANA supporting our discussions.

Where to Find More Information

S4HANA Documentation:

https://help.sap.com/docs/SAP_S4HANA_ON-PREMISE

https://help.sap.com/docs/SAP_S4HANA_CLOUD

Upgrading SAP S/4HANA: Why, How, and Best Practices:

https://assets.cdn.sap.com/sapcom/docs/2020/06/94ca0995-9d7d-0010-87a3-c30de2ffd8ff.pdf

Upgrade Guide – https://help.sap.com/doc/760ce610a2af4174a329d2d8315378e2/2021/en-US/UPGR_OP2021.pdf

Relevant SAP Notes:

SAP Note 2240359 - SAP S/4HANA: Always-Off Business Functions

SAP note 2240360 - SAP S/4HANA: Always-On Business Functions

SAP Note 3015509 - SAP S/4HANA 2021: Feature Package Additional Release Information

SAP Note 3079550 - SAP S/4HANA 2021: Restriction Note

SAP Note 2214409 - SAP S/4HANA Add-on Note

SAP Note 307522 - ABAP Platform 2021 – General Information

SAP Note 3075238 - ABAP Platform 2021 – Restrictions

Key Points to Take Home

- Understand the three deployment models for S/4HANA upgrades, Greenfield, Brownfield, Selective Migration
- Review the common architectures for S/4HANA for on-premise, cloud, and migrations
- Know the conversions for upgrading to S/4HANA and the tools required to perform them
- Understanding the tools used for Upgrades and Migrations to S/4HANA
- Migration Challenges such as incompatible add-on's and Custom Code
- Fiori and SSO configuration and tips

Thank you! Any Questions?

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Please remember to complete your session evaluation.

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