



HP Services for SAP System Upgrade & Migration

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Evolution of SAP Technology

Evolution of SAP Technology



Classic R/3:

⇒ SAP Basis

- 3-layer client-server architecture
- Scalability
- RFC communication
- ABAP/4
- SAP ITS for Web functionality

Evolution of SAP Technology

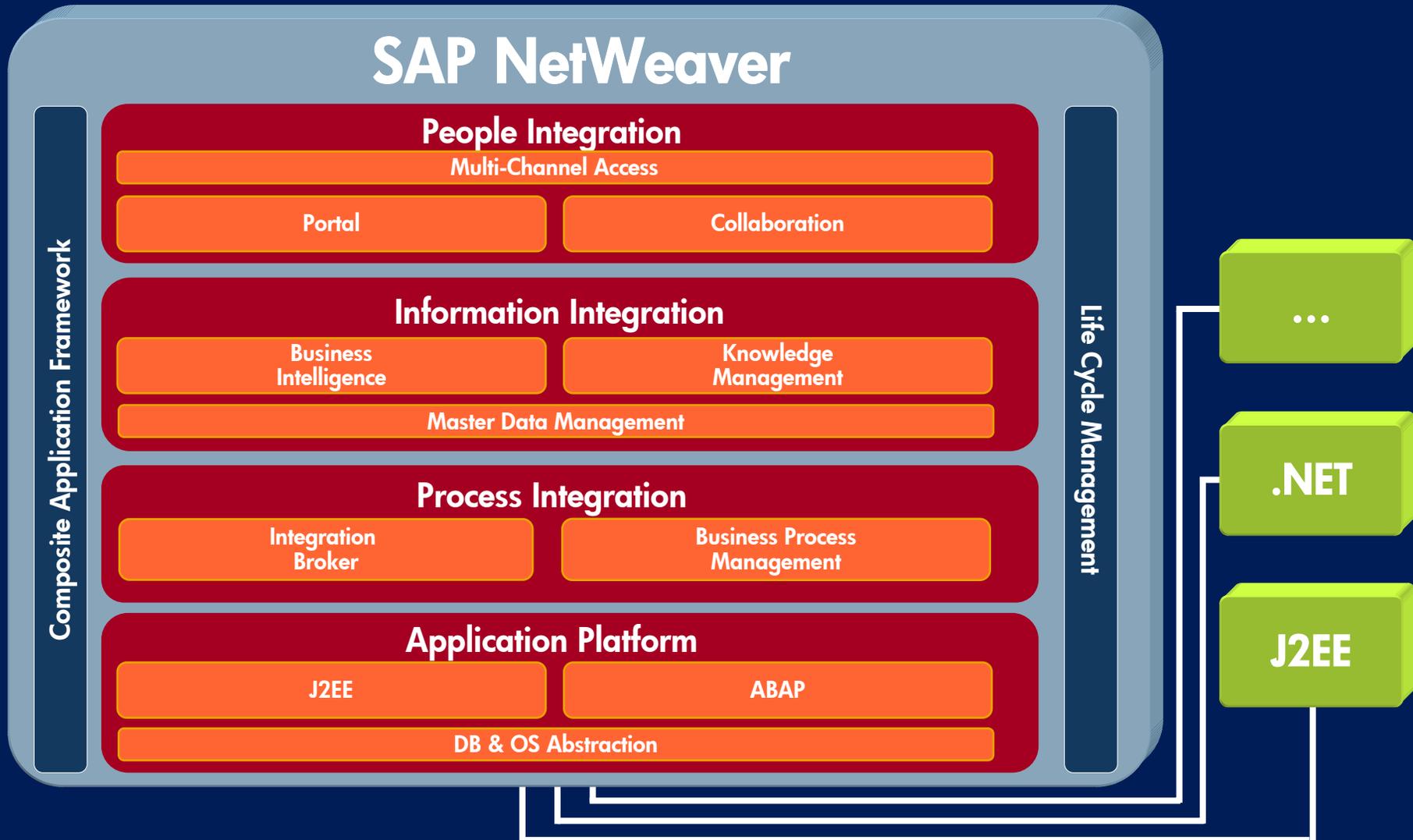


mySAP Technology:

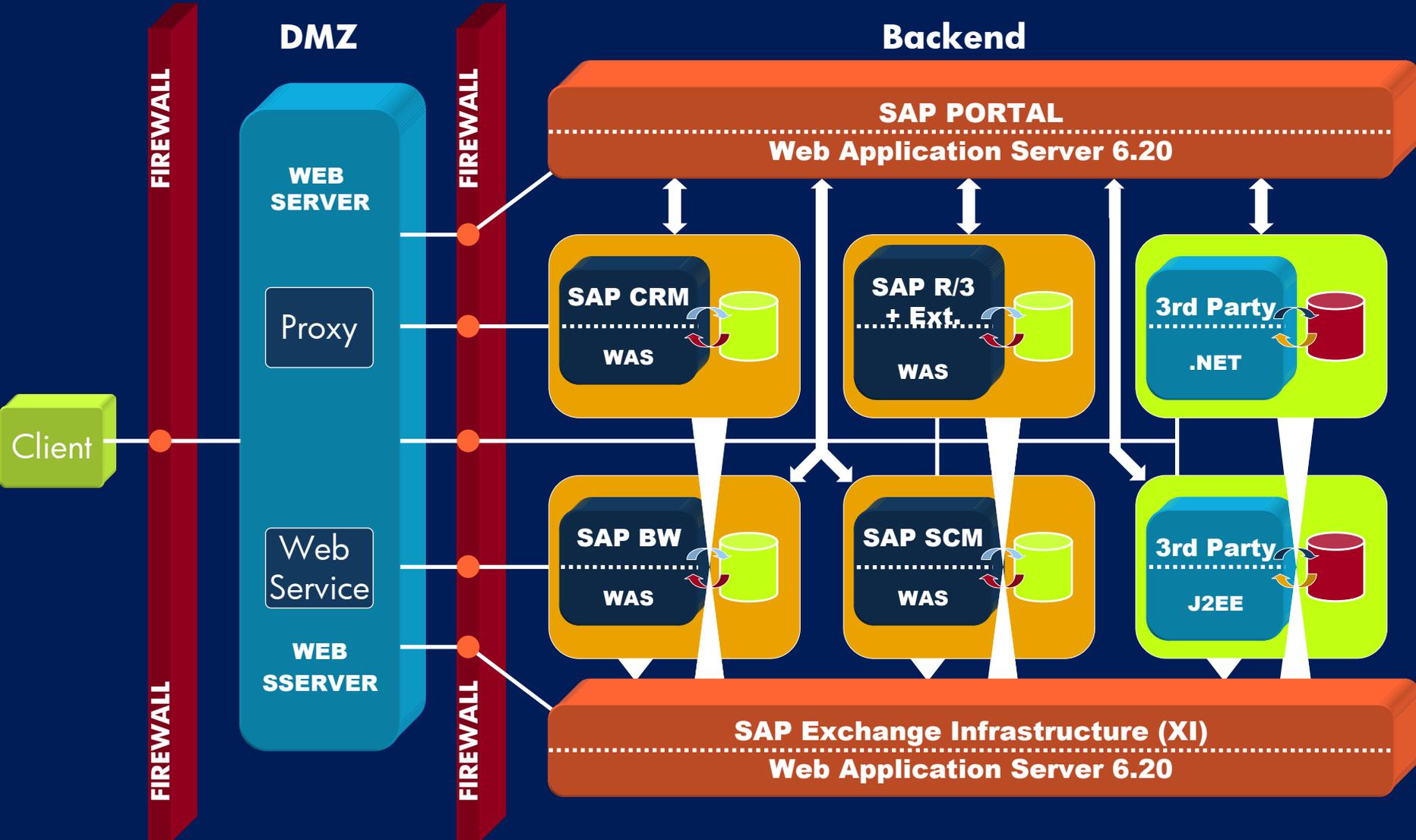
⇒ net centric architecture

- XML message-based system communication / integration (via SAP Business Connector)
- ABAP Objects
- URL-based service location
- Component-based, distributed design
- Collaboration-based infrastructure

Evolution of SAP Technology



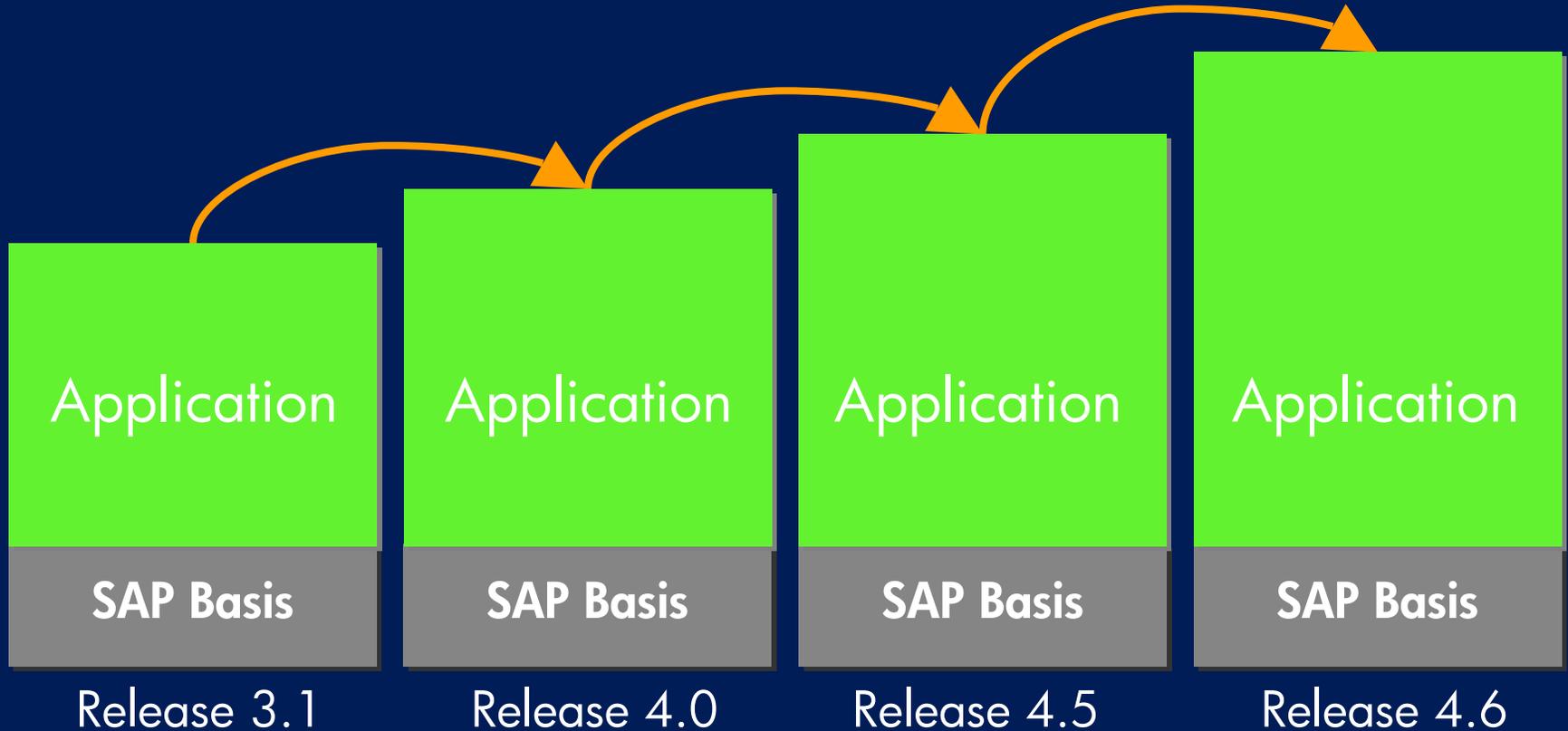
Evolution of SAP Technology – New SAP System Landscape





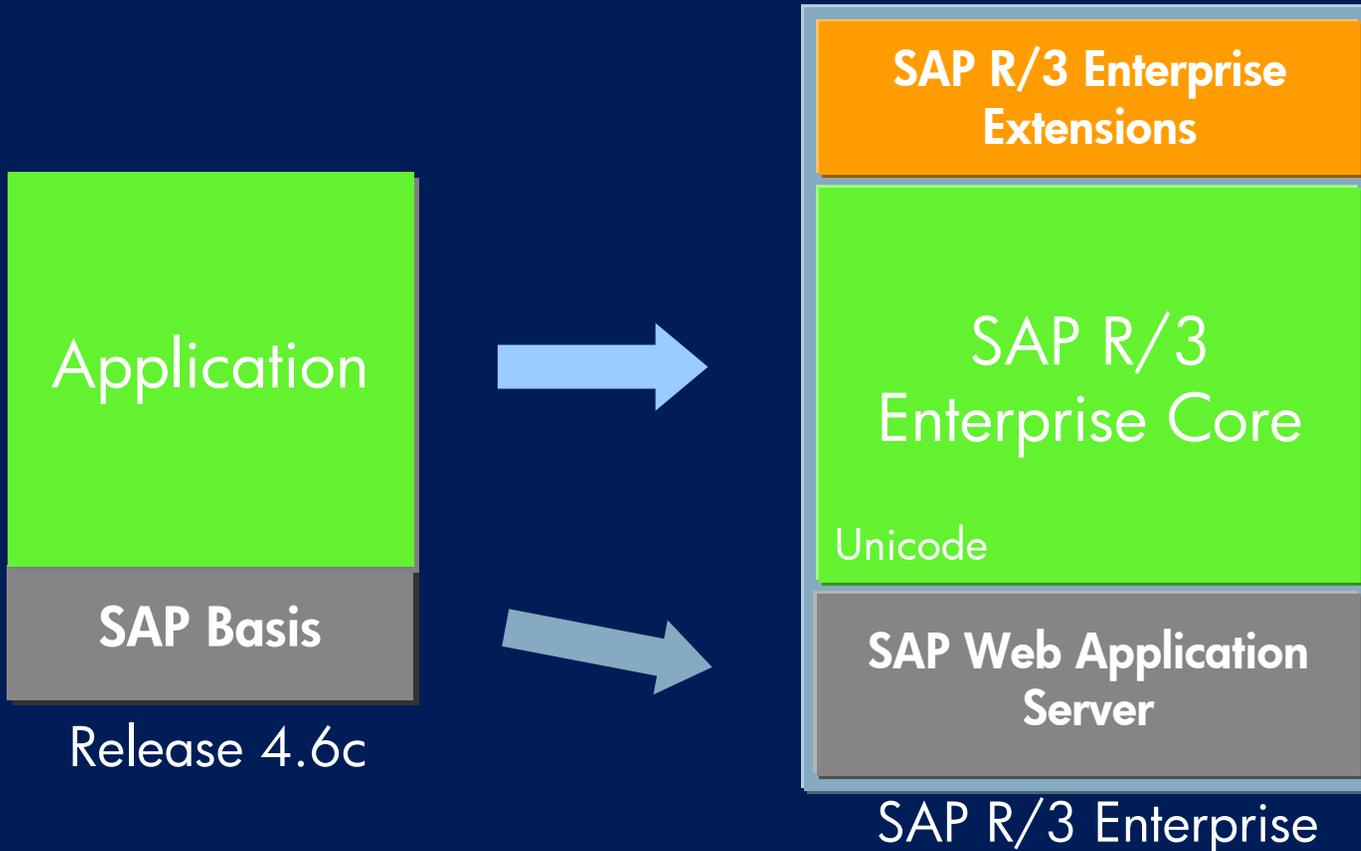
R/3 Enterprise Architecture & Release Strategy

R/3 Releases in the past



- Up to 4.6c, upgrade of entire system necessary to gain new functionality

How SAP R/3 Enterprise is built



- SAP R/3 Enterprise still contains all SAP standard functionality as of 4.6c enhanced by Web functionality and Unicode compliancy

SAP R/3 Enterprise functionality



- New functionality in future releases only shipped via Enterprise Extensions
- Currently 5 Extensions (SCM, PLM, Financial, HR, Travel Management)
- Extension Sets are free of charge for licensed customers
- Extensions can't be upgraded encapsulated (only upgrade of complete extension set)

SAP R/3 Enterprise Industry Solutions



- R/3 Enterprise is a cross-industry solution
- Currently supported industry solutions:
 - Financial services / banking
 - Public sector
 - Global trade
 - Retail

Product Strategy

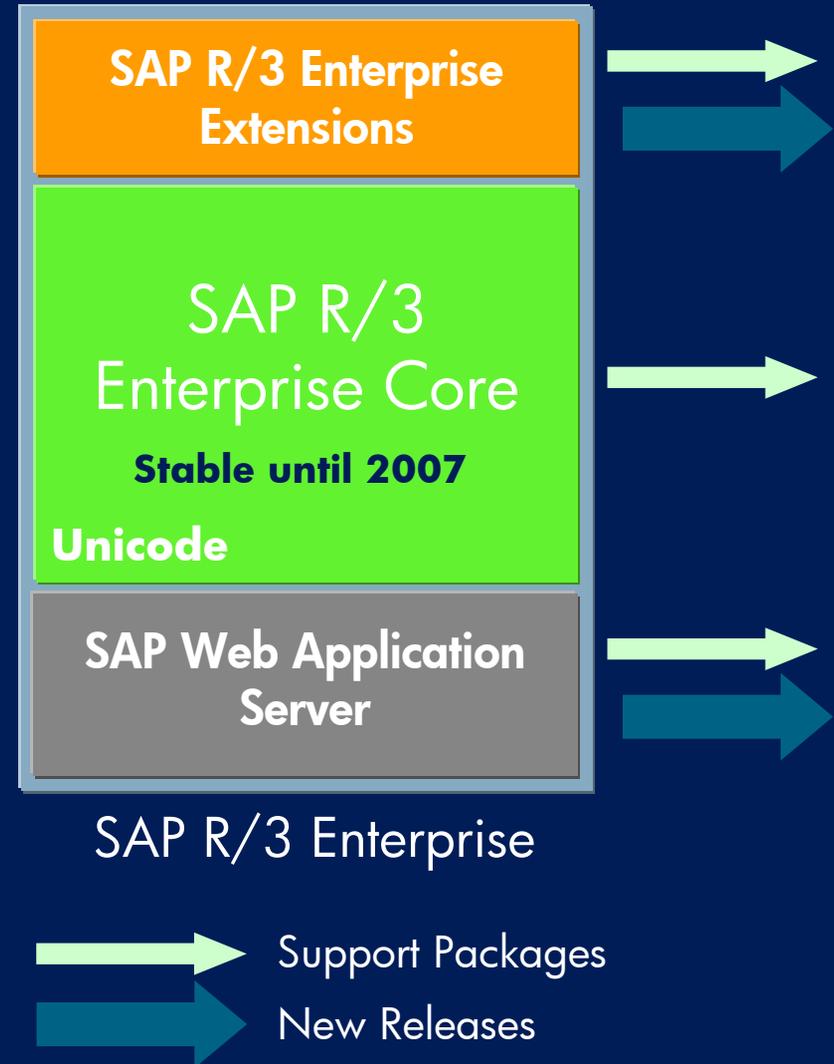


- R/3 Enterprise architecturally significantly differs from previous releases
- New release illustrates SAP's highly marketed "more flexible application strategy"
- R/3 Enterprise decouples R/3 technical and functional upgrade cycles

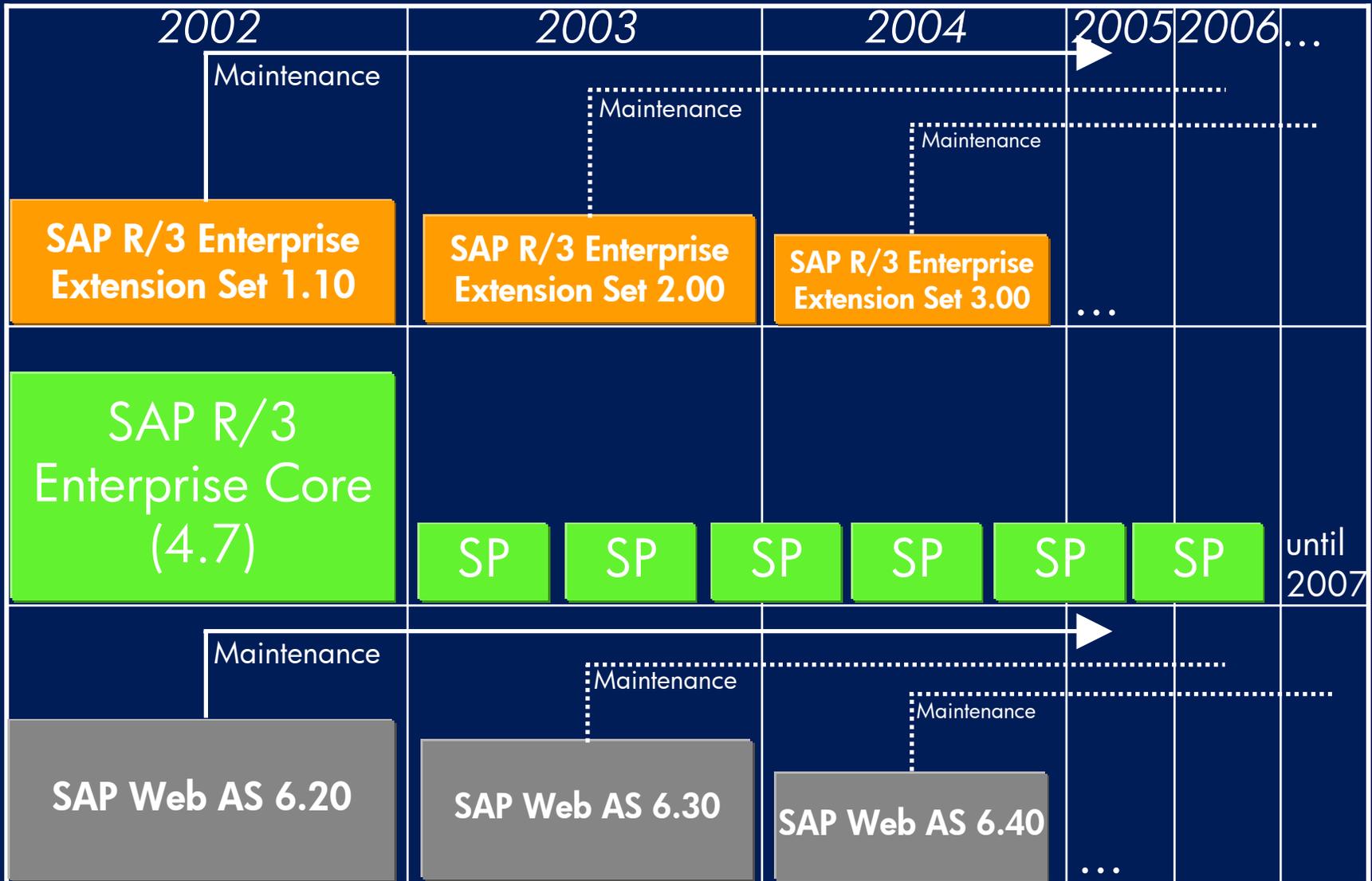
Future Releases



- Own release cycle for the WAS & the Enterprise Extension Sets
- WAS will be downward compatible in future releases
- Enterprise Core will not be changed in upcoming releases of SAP Enterprise



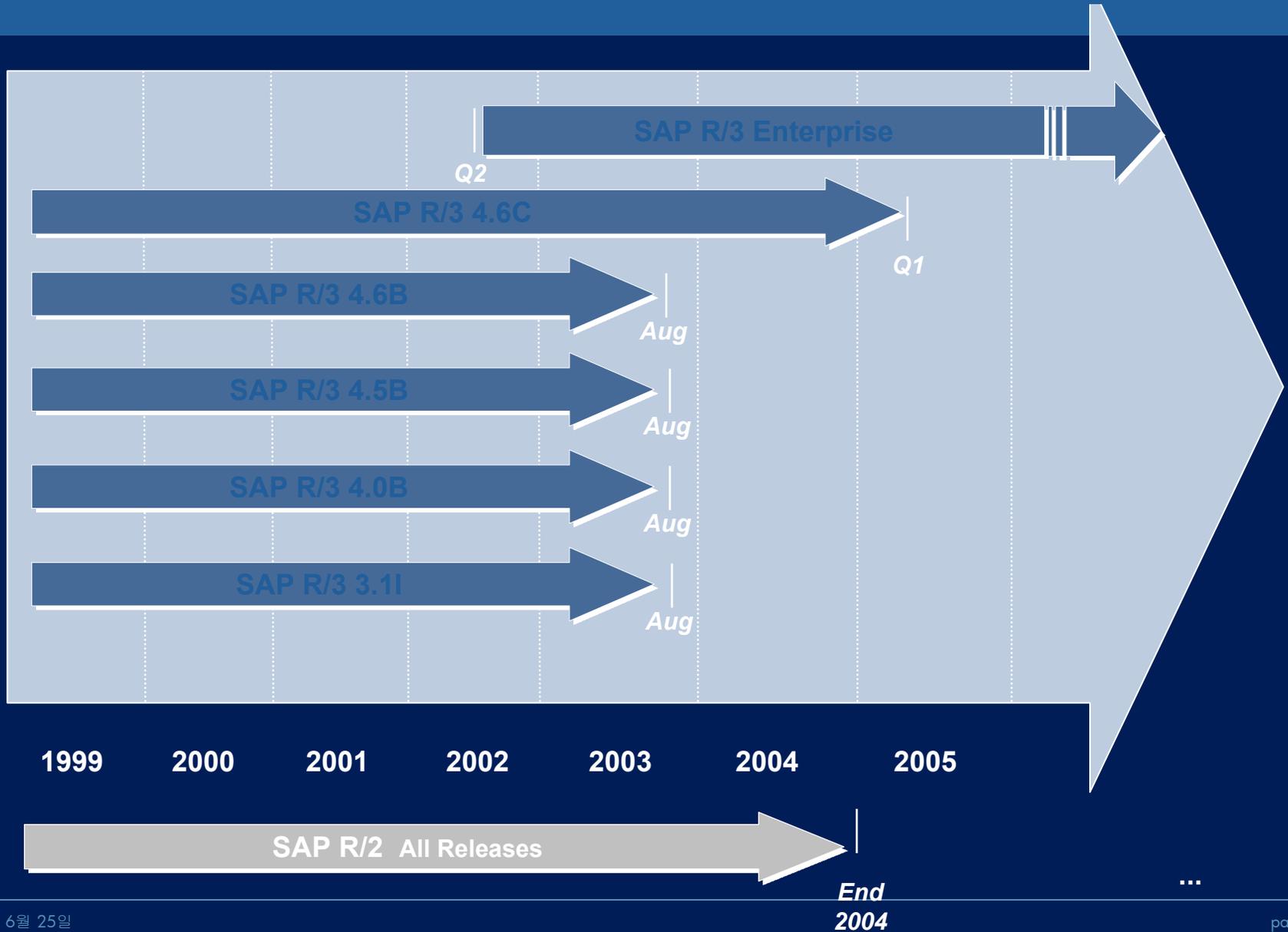
Time Schedule of R/3 Enterprise Ramp-Up



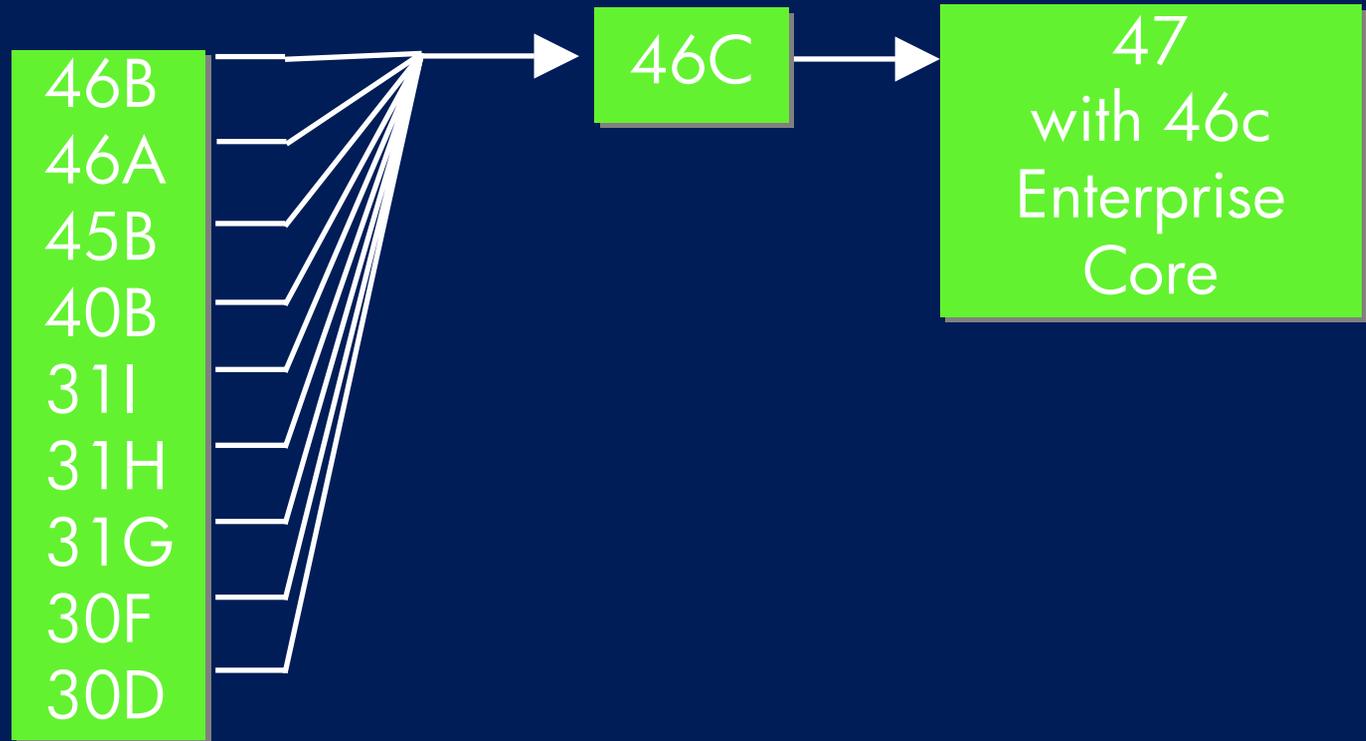
Why Upgrade to Enterprise?



SAP R/3 Release Strategy



Upgrade to 4.7 (logical view)

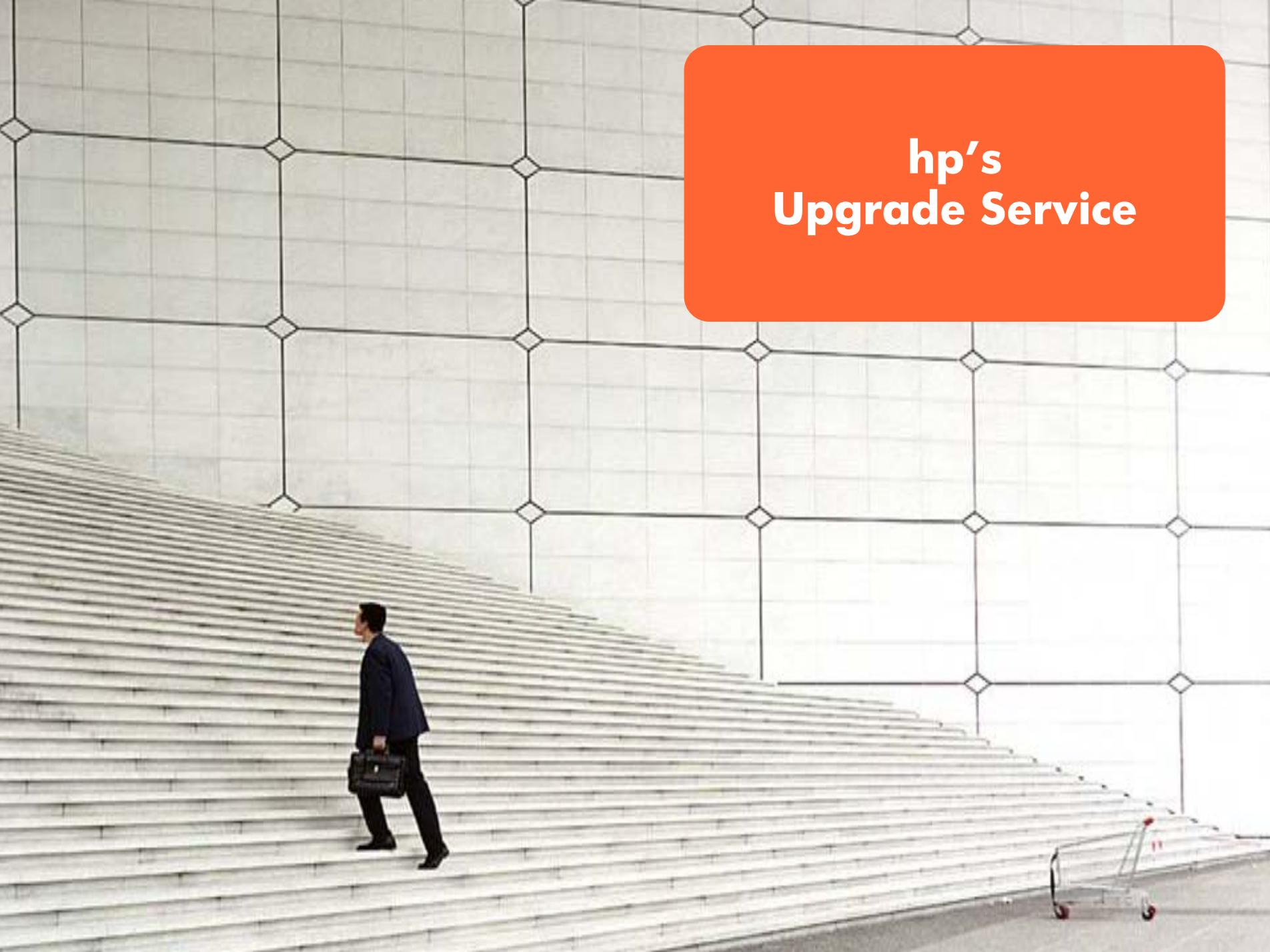


- The upgrade can be applied to several different start releases
- System dependent: creation of new tables, conversion of existing tables, modification analysis

Why Upgrade ?



- **SAP's recommended approach**
- **Standard software maintenance practice**
- **Shorter time to implement with immediate payback (ROI)**
- **Less risk of impacting business operations and system stability**
- **Allows for practical prioritization of system enhancements**
- **Requires fewer resources for the project lifecycle**
- **Allows stabilization of the new release before major enhancements are enabled**
- **Minimizes impact to interfaces and reporting**
- **Less complex system landscape**



**hp's
Upgrade Service**

HP's Upgrade Methodology

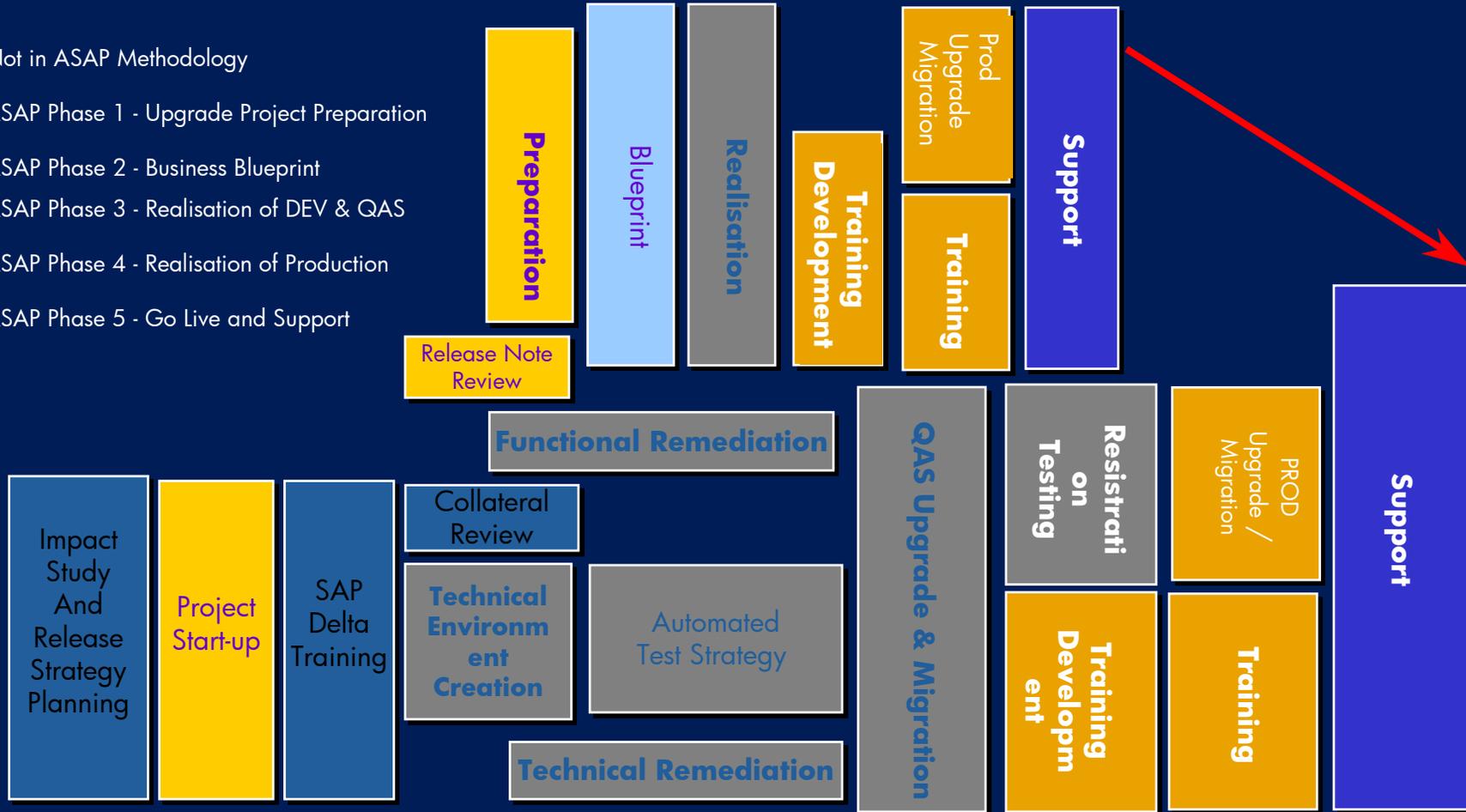


- The proposed Upgrade methodology is based on SAP's ASAP methodology for continuous business improvement. However, we have enhanced the methodology by supplementing the areas that have not been adequately addressed by ASAP. Examples of such areas are release strategy development, delta training and collateral review.
- HP believes that this upgrade approach will be able to fulfil the following criteria:
 - Lowest risk of Upgrade failure
 - Shortest delivery timeframe for the technical upgrade
 - Lowest demand on Heidelberg's organisational resources
 - Lowest risk of lost business opportunities.

HP's Upgrade Methodology



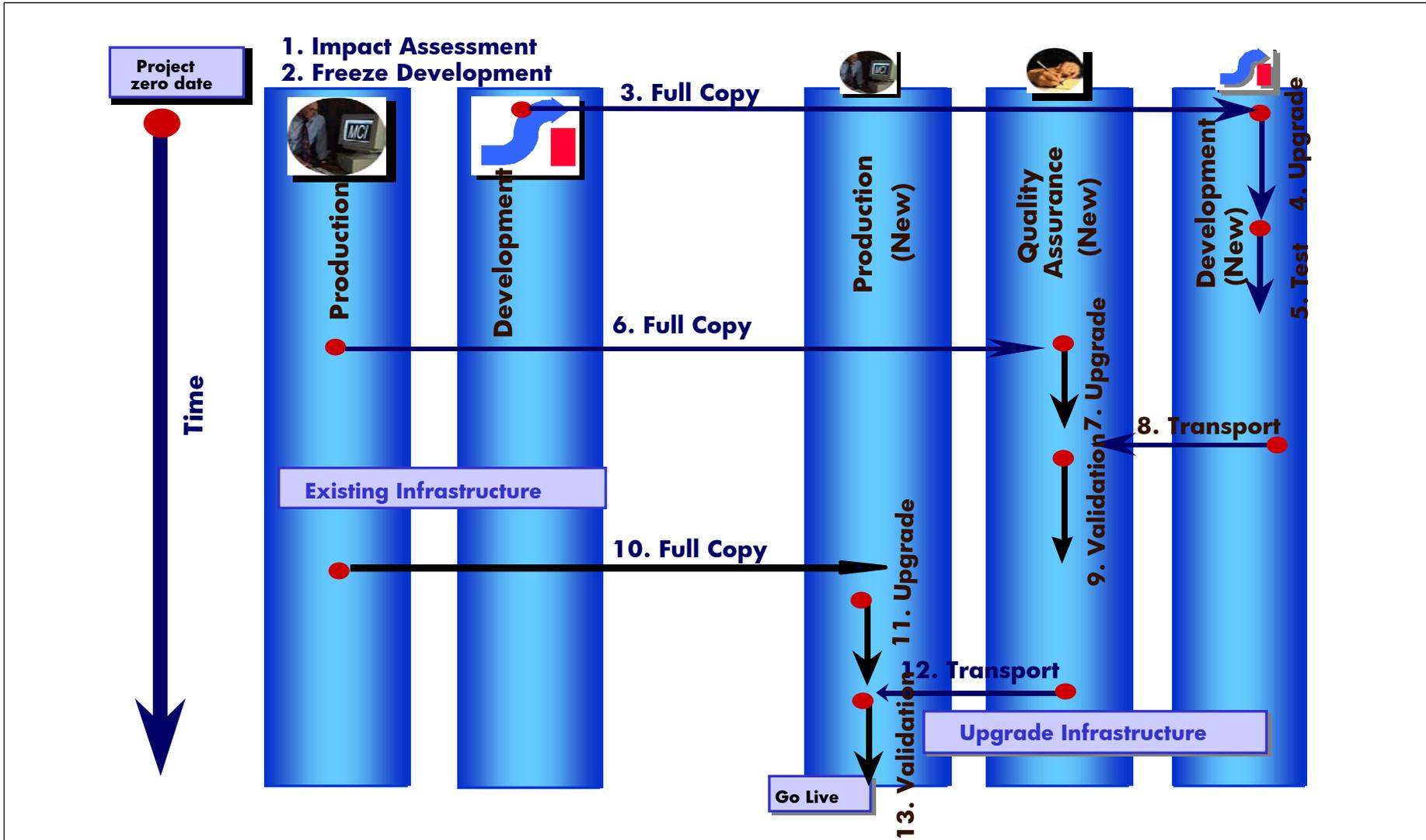
- Not in ASAP Methodology
- ASAP Phase 1 - Upgrade Project Preparation
- ASAP Phase 2 - Business Blueprint
- ASAP Phase 3 - Realisation of DEV & QAS
- ASAP Phase 4 - Realisation of Production
- ASAP Phase 5 - Go Live and Support



Sequential Technical & Functional Upgrade - Multiple Migrations

- The entire upgrade exercise is a complex procedure involving a multitude of changes to the SAP R/3 infrastructure and functionality. The key activities of Heidelberg SAP Upgrade initiatives are as follows:
 - Database Upgrade
 - This involves the upgrade of the existing Oracle Database from version 8.i to 9i
 - R/3 Technical Upgrade
 - This involves the upgrade of the existing R/3 release 4.6C to release 4.7 without changes to existing functionality.
 - R/3 Custom Objects Upgrade
 - This involves testing & upgrade of the existing R/3 custom objects (programs, BDCs, User exits) in 4.6C to release 4.7 without changes to existing functionality.

HP's Upgrade Strategy



HP's Upgrade Strategy



- Stage 1 – Impact Assessment/Collateral Review
- Stage 2 – Freeze Development
- Stage 3 – System Copy to Development Environment
- Stage 4 – Upgrade Development Environment
- Stage 5 – Post Upgrade Test
- Stage 6 – Post Upgrade Adaptation
- Stage 7 – System Copy to Quality Assurance Environment
- Stage 8 – Upgrade Quality Assurance Environment
- Stage 9 – Transport Adjustments from Development to Quality Assurance
- Stage 10 – Validate Quality Assurance Environment
- Stage 11 – Perform Upgrade Trial Run in Production
- Stage 12 – System Copy to Production Environment
- Stage 13 – Upgrade Production Environment
- Stage 14 – Transport Validate Adjustments to Production
- Stage 15 – Final Validation
- Stage 16 – Go-live
- Stage 17 - Technical Upgrade End-of-Phase Review

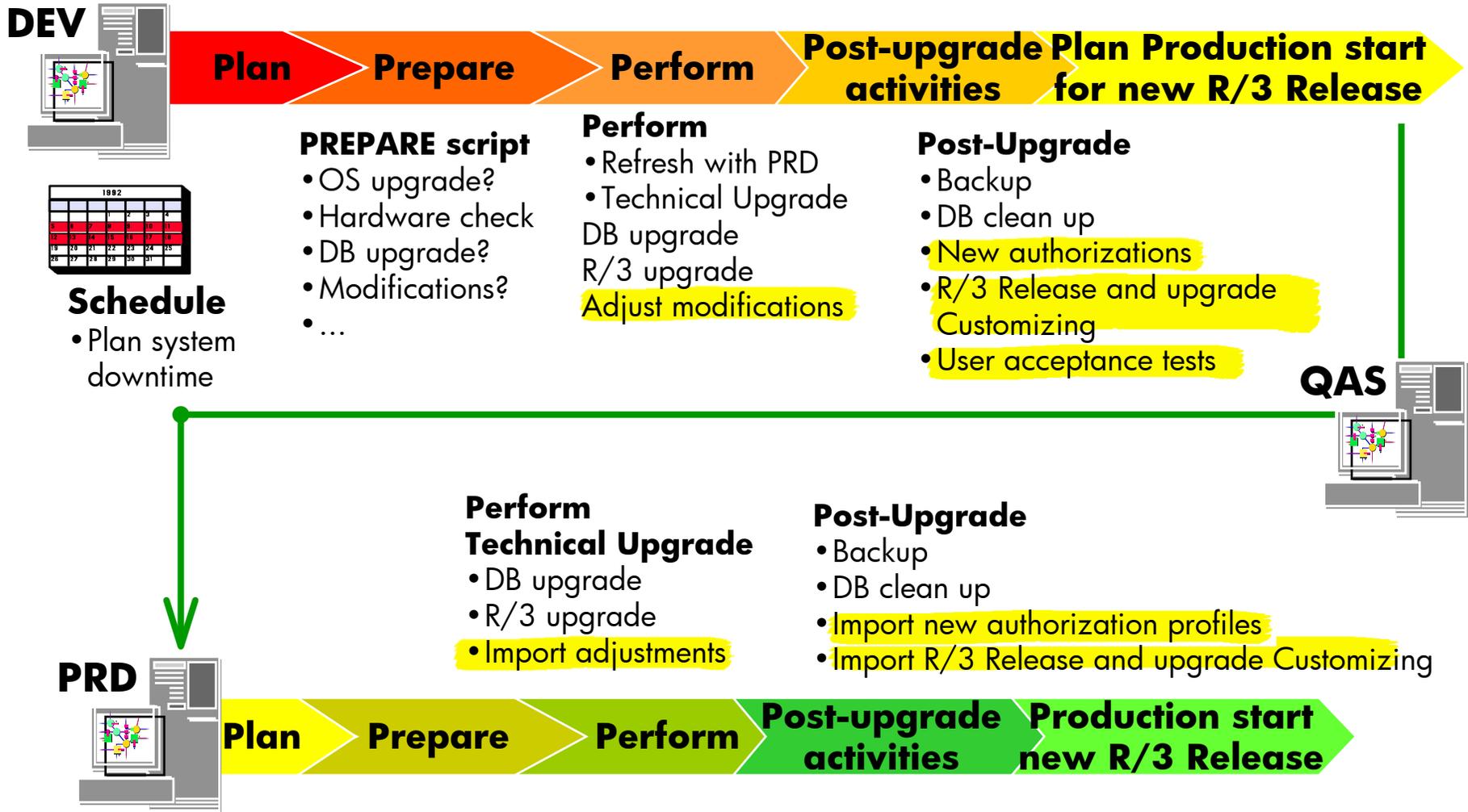
HP's Upgrade Strategy



No	Activities	Consulting resource	Man-days
1	Upgrade Project Preparation	HP Project Manager HP Application Consultant HP Basis Consultant	2 5 2
2	Upgrade Blueprint	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	2 10 2
3	Test Upgrade standard functionality and HAP business processes	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	2 50 13
4	System Acceptance testing	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	2 20 5
5	User Training	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	- 5 1
6	Final Production Upgrade	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	2 5 10
7	Go Live & Support	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	1 8 2
Total Number of Mandays			149
Optional Services			
8	Authorizations in Release 4.6C (Optional)	HP Project Manager HP Application Consultant (FI/CO, MM, SD, PM /SM) HP Basis Consultant	30
9	Upgrade of the custom objects (Optional services)	HP Technical Team (ABAP)	2-3 Man month Depends on customer

Example

Upgrade Project Overview



SAP Resource Requirements



R/3 Release	3.x	4.0 x	4.5 x	4.6 B	4.7 (6.x)
CPU	1	+30%	+20%	+15%	+5%
Memory	1	1	+20%	DB: +20%; App: +10%	+5%
Disk	1	+10%	+10%	+10%	+10%
SAP OSS note		089305	0113795	0178616	517085

Please note:

- Delta numbers are related to the previous release.
- The release impact is considered in a decrease of the hardware system performance and NOT in an increase of R/3 workload.

4.7 special:

- Please note there can be considerable difference (up to 23% measured) in resource requirements depending on architecture and the platform. The service pack installed can also determine a difference in resource requirements; up to 7% measured.

SAP Resource Requirements



R/3 Rel.	3.x → 4.0 x → 4.5 x → 4.6 B → 4.7 → Unicode					
CPU	1	+30%	+20%	+15%	+5%	+30% to 35%
Memory	1	1	+20%	+20%(DB) +10% (App)	+5%	+50%
Disk	1	+10%	+10%	+10%	+10%	+35% (UTF-8) +60% to 70% (UTF-16)
SAPnote		089305	0113795		0178616	517085

- Please note:**
- (UTF-8): Oracle, SAPDB (8.0), DB/2 (AIX)
 - (UTF-16): SQL Server, SAPDB (7.0), DB/2 (AS/400)
 - Network load: Measurements outstanding, draft results
 <7% for Latin-1, about 15% for Japanese, 25% for exotic languages



SAP R/3 Migration

Reasons for a migration



- Performance
- Change of the hardware vendor
- Costs
- Change of the OS strategy
- Server consolidation

Types of SAP migration



- Homogeneous Migration (System Copy)
 - No change of OS and DB
- Heterogeneous Migration
 - Changing the OS (e.g. AIX -> HP-UX)
 - Changing the DB (e.g. Informix -> Oracle)
 - Changing both (e.g. OS400/DB2 -> HP-UX/Oracle)v



Migration Activity

Content of the migration contract



- SAP Questionnaire
- 2 GoingLive checks of source (before Migration)
- GoingLive check of target (after Migration)
- Consultant can open calls about migration with excellent support of dedicated personnel
- Migration Tools & guides (License key)

Questionnaire, Project Plan, etc.



- SAP sends you a questionnaire about source & target platform (DEV, TEST & PROD)
- Detailed project plan with GoingLive checks must be created
- Target combination OS, DB & SAP need to be checked
- Migration team has to build up

Your hp Migration Consultant helps you !

Migration Team



- Migration Consultant
- Project Manager internal/external (depending on project)
- Customers techn. Consultants (e.g. system admins)
- Customers application Consultants (developers)
- „Power Users“ (functionality check, e.g. FI/CO SD MM)
- **Customers IT Management**



Migration Project Detail

Sample schedule plan



- Analyze the needed HW requirements (sizing the target system)
- Order the hardware / software
- Contact SAP and order migration service
- Find migration partner
- Create project plan and fill out questionnaire
- Setup new hardware for migration testing
- Install standard SAP on target and integrate to backup, HA-solution and system mgmt.
- Do a first test migration
- Validate migrated system about consistency / functionality
- Tuning of the migration process
- GoingLive check of source system (at least 4 weeks before planed final migration)
- Implement SAP recommendations
- Do a second test migration with optimized process
- Validate migrated system about consistency / functionality, check optimization results
- Do the final migration
- Validate system after migration
- Run new system
- Schedule a GoingLive check (4 weeks after final migration)

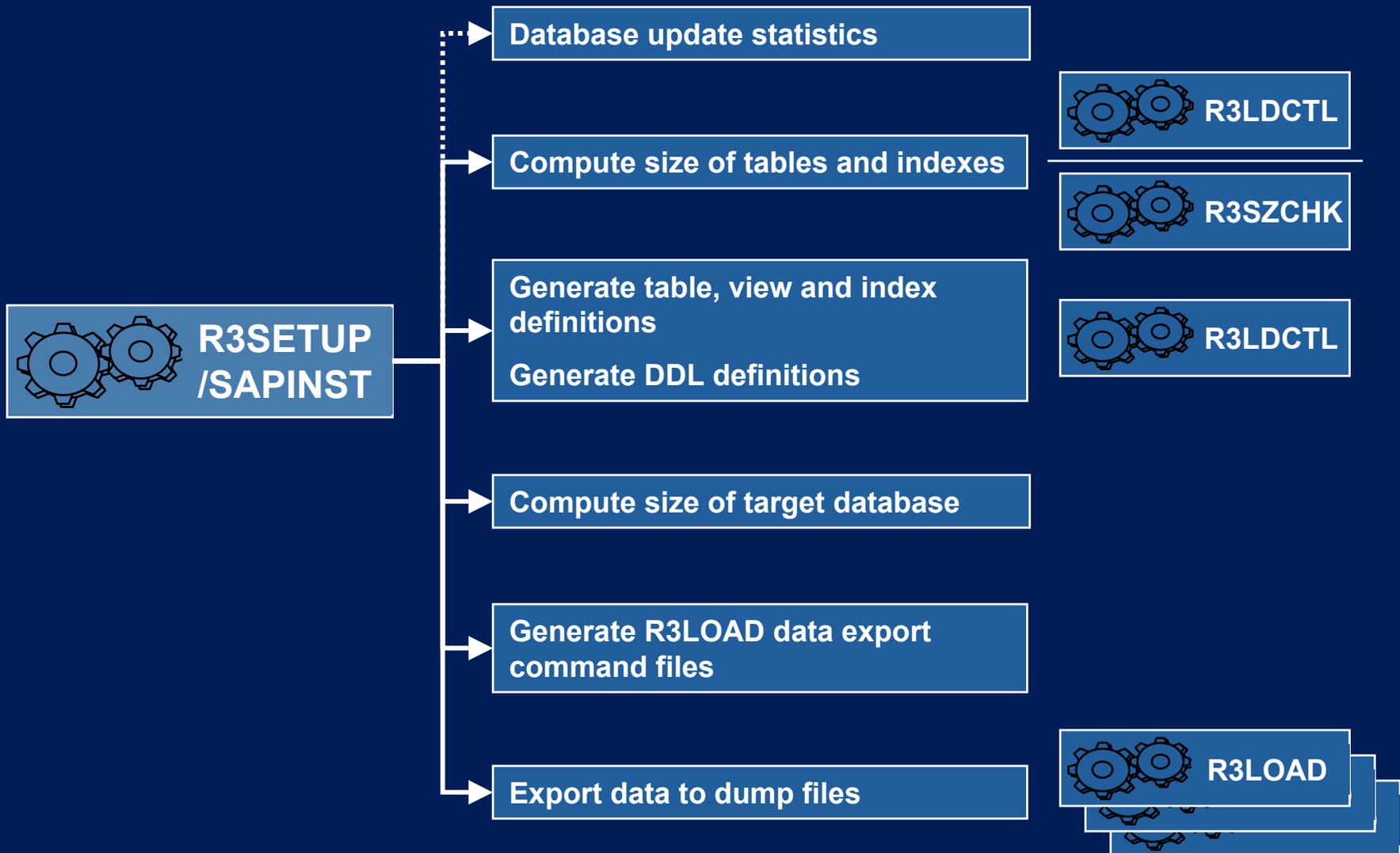
Migration of a system landscape



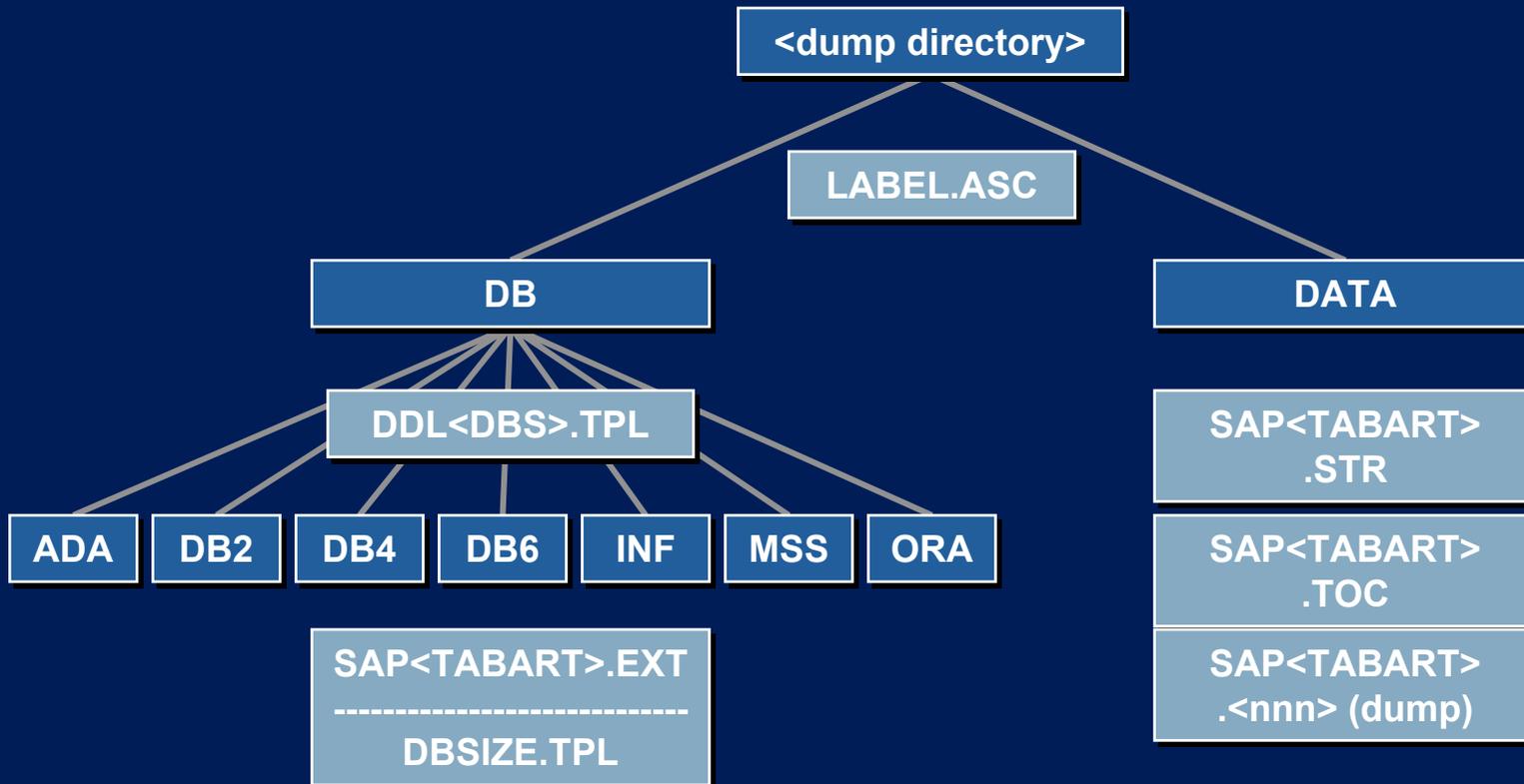
- DEV-system : can be migrated before/after PROD
- TEST-system : usually not migrated, most copy after the migration from PROD₁
- PROD-system : migrate all HW-systems (avoid mixed environment)
- Archive/training/etc. : Migration before/after PROD or build-up from scratch

¹ but source TEST is often used for a first migration export

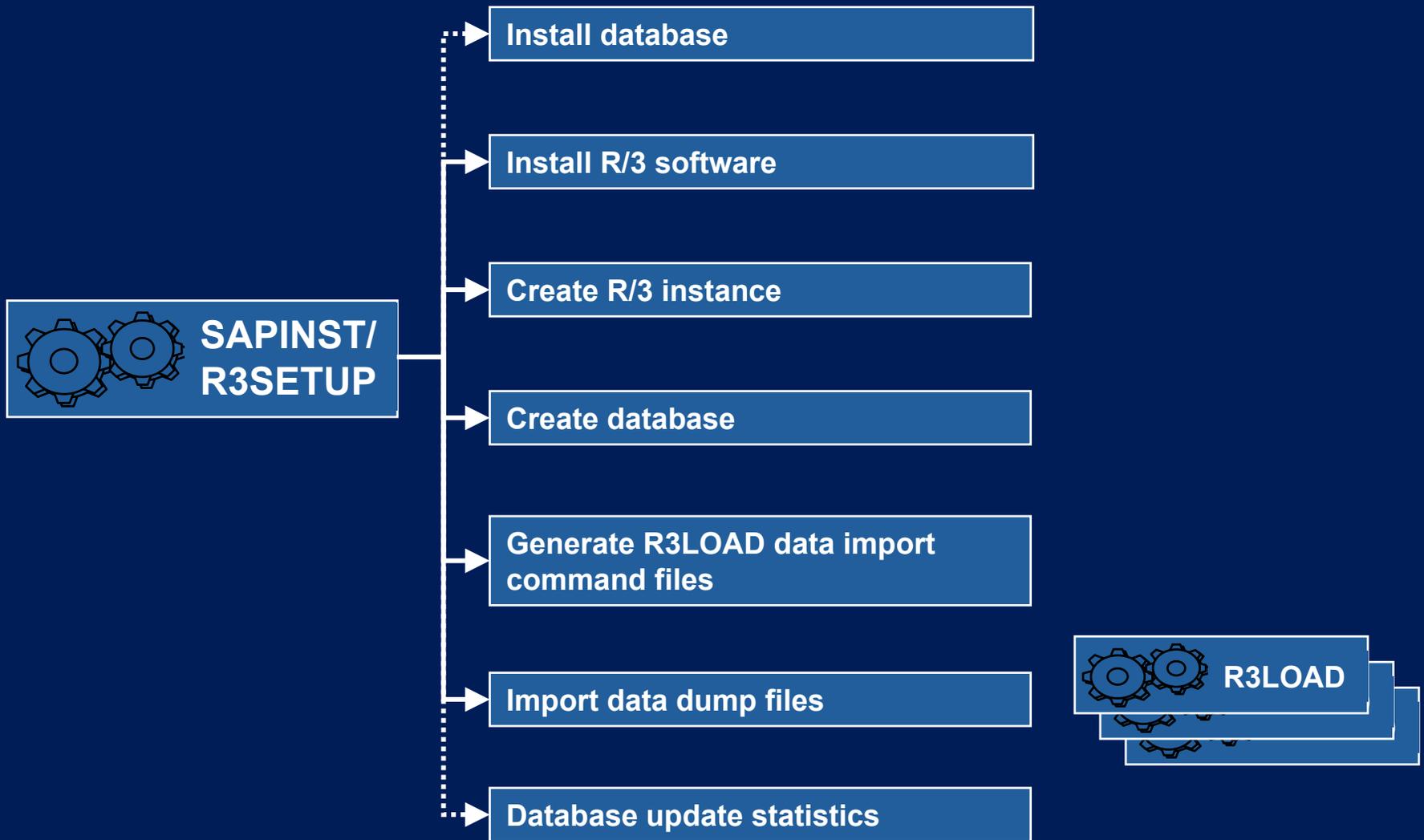
R3SETUP / SAPINST - Tasks at the Source System



R3LOAD Dump Directory Structure



R3SETUP / SAPINST - Tasks at the Target System





Migration Proof Point

Migration Reference Site



SAP OS/DB Migrations

Customer	Source Hardware Vendor	Source Hardware Model/OS	Source DB	Target Hardware Model/OS	Target Database	Migration Process ¹	HP Contact	SAP Rel.	DB Size	Timing ²	Ref ³
HK Ruokatalo	Compaq	Windows NT	Oracle	N4000/11i	Oracle	SAP	Tuomas Vaananen	31i	500GB		
Belgacom	Compaq	Tru64	Oracle	Superdome	Oracle	SAP	Bert Vanstechelman	31i COM	380GB		
CPGmarket	Compaq	Windows NT	MS SQL	rp8400	Oracle	SAP	Arne Hartmann Andreas Kaelble	BW 2.0B	50GB		
CPGmarket	Compaq	Windows NT	MS SQL	rp8400	Oracle	SAP	Arne Hartmann Andreas Kaelble	WP 2.11	20GB		
CPGmarket	Compaq	Windows NT	MS SQL	rp8400	Oracle	SAP	Arne Hartmann Andreas Kaelble	KW 5.1	20GB		
CPGmarket	Compaq	Windows NT	MS SQL	rp8400	Oracle	SAP	Arne Hartmann Andreas Kaelble	4.6C	40GB		
Kaufland	IBM	AIX	DB2	N4000	Oracle	SAP	Karlheinz	4.5B	300GB		
Kaufland	IBM	OS390	DB2	N4000	Oracle	SAP	Karlheinz Kiermaier	4.0B	700GB		
Huntsman	IBM	RS6000/AIX	Oracle	N4000	Oracle	exp/imp	Dom Mackenzie	3.1H	30GB		
UPM Kymmene	IBM	AIX	Oracle	N4000/11.0	Oracle	SAP	Tuomas Vaananen	46B	40GB		
Balta	IBM	AS400	DB2	Proliant Win2k	SQL Server	SAP	Bert Vanstechelman	40B COM	250GB	12- export 20- import	
VW	IBM	AIX	DB2	rp5400	Oracle	SAP	Arne Hartmann	4.6C	40GB		

Important Weblinks for SAP Migration



- SAP Service Marketplace migration information
<http://service.sap.com/osdbmigration>

- SAP Service Marketplace upgrdde informateion
<http://service.sap.com/releasestrategy>
<http://service.sap.com/enterprise>
<http://service.sap.com/upgrade>

- Contact HP Korea TSEC SAP Performance team for SAP OS/DB Migration
<http://www.hp.co.kr> Contact: eon-jong_lee@hp.com or chulmin.lee@hp.com.

HP SAP solution external customer webpage
<http://www.hp.com/go/sap>

„Migrating a SAP system is not magic with an experienced migration partner !“





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