UP202

Designing the Right Portal Infrastructure: Lessons Learned and Examples

Olaf Beier, SAP Consulting
Thomas Hensel, Product Management

SAP TECHED 08

Disclaimer

This presentation outlines our general product direction and should not be relied on in making a purchase decision. This presentation is not subject to your license agreement or any other agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or to develop or release any functionality mentioned in this presentation. This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.

Learning Objectives

As a result of this workshop, you will be able to:

- Understand the fundamental portal implementation scenarios and give some examples for portal implementation scenarios
- Name functional and technical factors that have an impact on the target architecture and infrastructure of your portal project
- Apply best practices for a portal implementation project

The following topics are covered by related TechEd sessions:

- UP100, SAP NetWeaver Portal: Roadmap for the Next 12 Months
- UP108, Accelerated Application Delivery: Enhancing the Performance of Web Applications
- UP110, How SAP Uses the SAP NetWeaver Portal as its Corporate Intranet Site
- UP200, SAP NetWeaver UI Strategy and Roadmap
- UP263, Changing the Look & Feel of the SAP NetWeaver Portal, Hands-on
- LCM102, Running a Sizing Project from Blueprint to Upgrade
- LCM219, SAP NetWeaver System Landscapes
- LCM224, System Landscape Optimization
- LCM263, CTS+: One Transport Management System for Every Purpose
- LCM265, Designing a Well-Performing Web Infrastructure for an SAP NetWeaver System

Agenda

1. **Overview**
   - 1.1. Portal Implementation Scenarios
   - 1.2. Focus Area Corporate Portals
2. User Productivity Infrastructure
   - 2.1. Portal Deployment Options
   - 2.2. Portal Scaling
3. Building the Portal Infrastructure
   - 3.1. Security Aspects, HA, Scheduled Downtimes
   - 3.2. Sizing, Monitoring, Transporting
   - 3.3. Figures from SAP Corporate Portal
4. Summary
   - 4.1. Summary
   - 4.2. Further Information, Notes, Blogs

Running an Enterprise Portal – Overview

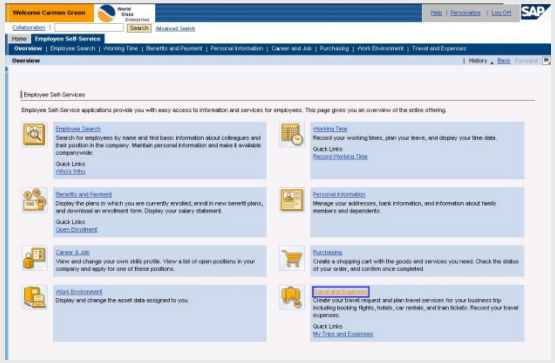
SAP NetWeaver Portal provides end users a uniform single point of access to

- Applications
- Services and
- Information

they need for their daily work.

Integrating portal services into your business applications and processes provides a significant increase of productivity in your day-to-day work

End User



Potential Portal Implementation Scenarios

Collaboration Portal

Partner Portal

Project Information Portal

Banking Portal

Supplier Portal

Consumer Portal

Department Portal

Trading Portal

Application Portal

Team Portal

Corporate Intranet Portal

Community Portal

Corporate Extranet Portal

eCommerce Portal

External-Facing Portal

Self-Service Portal

Process Portal

My Personal Portal

Assessment of Potentials

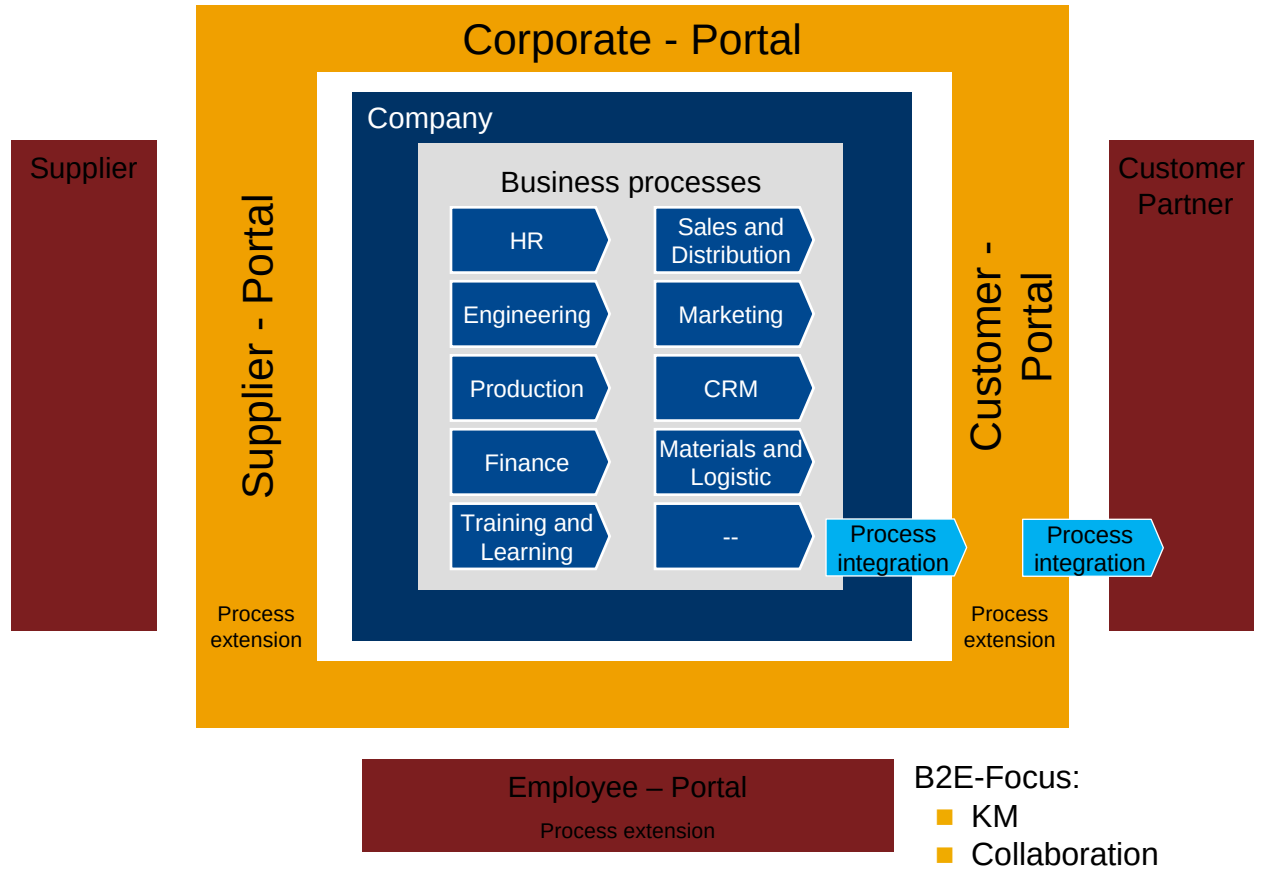
PLAN INVEST LEVERAGE

Clearly define a portal strategy and roadmap in order to justify investments and be able to show how to leverage the investments.

Main Scenario: Corporate Portal

Corporate portals form a centralized technology platform as a basis for different types of content

B2B-Portalfocus:
- Content
- Application access
- Collaboration



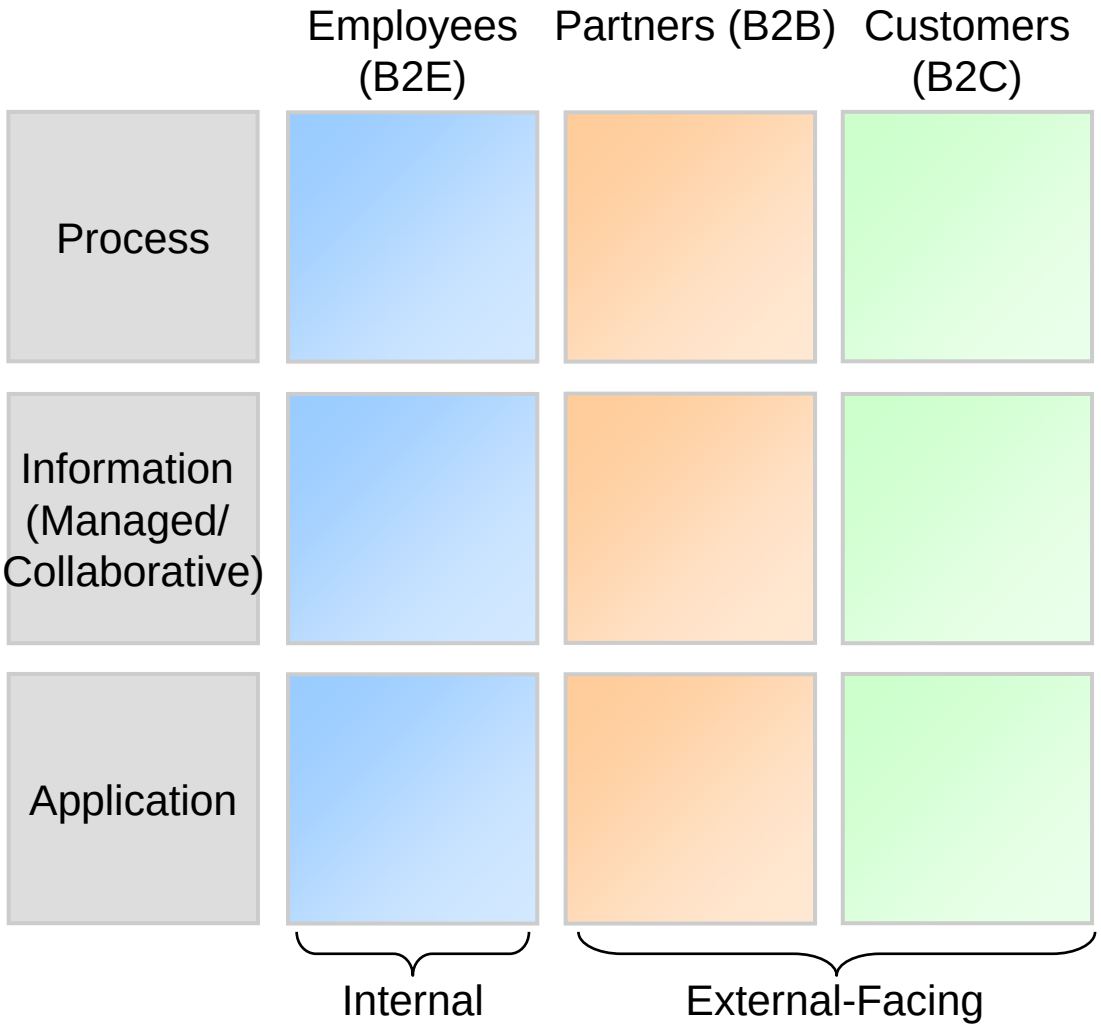
B2C-Focus:
- Content
- Personalization
- Service access
- Performance

B2E-Focus:
- KM
- Collaboration
- Content management
- Corporate identity

Source: Fraunhofer Portal Analyse and Design Methode (PADEM) - Whitepaper; 2004.

Setting Your Portal Integration Roadmap

- The portal provides various tools and best practices to support any kind of combination of internal as well as external-facing business scenarios:



Agenda

1. Overview
   - 1.1. Portal Implementation Scenarios
   - 1.2. Focus Area Corporate Portals
2. **User Productivity Infrastructure**
   - 2.1. Portal Deployment Options
   - 2.2. Portal Scaling
3. Building the Portal Infrastructure
   - 3.1. Security Aspects, HA, Scheduled Downtimes
   - 3.2. Sizing, Monitoring, Transporting
   - 3.3. Figures from SAP Corporate Portal
4. Summary
   - 4.1. Summary
   - 4.2. Further Information, Notes, Blogs

Empowering and Connecting People
User Productivity Infrastructure

Details in UP100

Expert User

Business User

UI Clients & Access Channels

- Web Dynpro Islands
- Enterprise Search Access
- Adobe Forms

NW Business Client

Web Browser

- SAP GUI
- Duet & Atlantic
- Mobile & Voice

UI Services

- Roles
- Navigation
- Personalization
- …
- Document
- Page Building
- Collaboration
- Search

UI Infrastructure

- Portal Runtime
- Web Dynpro
- Design Time Tools

Is There a Need to Run More Than One Portal?

In complex environments there could be the need to operate more than one portal for different reasons:

Business driven

Business Autonomy

- Organizational units want to have their own portal (e.g. for testing, sensitivity)
- Organizational / legal requirements (e.g. portal per org unit, department, project)
- Sharing a portal across multiple customers (service providers)

Geographical Distribution

Service Level Agreements

- Performance: expected response times
- Availability: 24x7
- Risk: critical vs. non-critical applications
- Tracking and Reporting

Corporate Governance and Guidelines

Technology Driven

Platform & Release

- Release version & lifecycle (SP Update)
- Hardware, operating system
- System landscape (dev, test, prod)
- Connections between systems

Security & Policies

- Storage of data and user information
- Access permissions
- Administration: Configuration, Operations, Monitoring

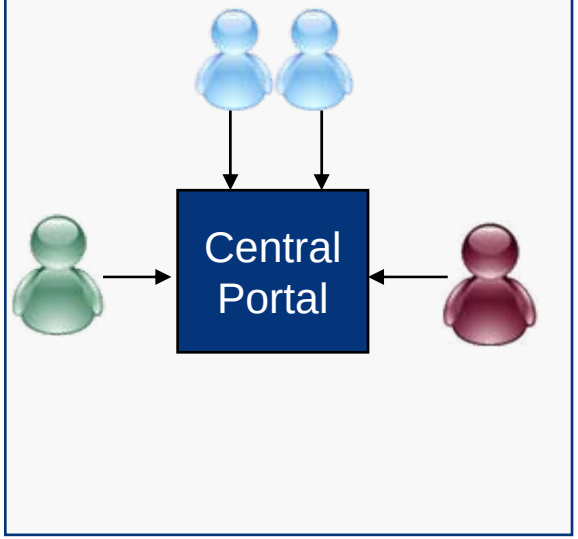
Technical dependencies

- Release dependencies between applications and portal (e.g. BI, xApps, CE, XRPM, Collaboration Portal, etc.)

Portal Deployment Options (Portal Systems View)

Details in UP217

Single Central Portal (1 portal)



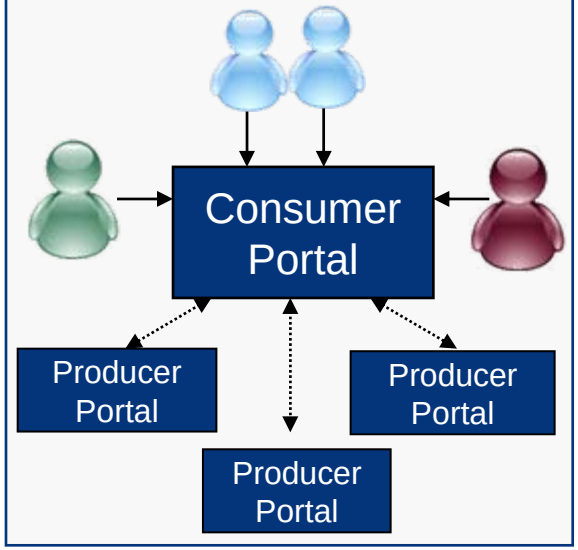
Approach

- Integrating all applications, services and information into one central portal

Benefit

- Centrally governed and administrated portal
- Simple landscape setup

Federated Portal Network (2 .. n portals)



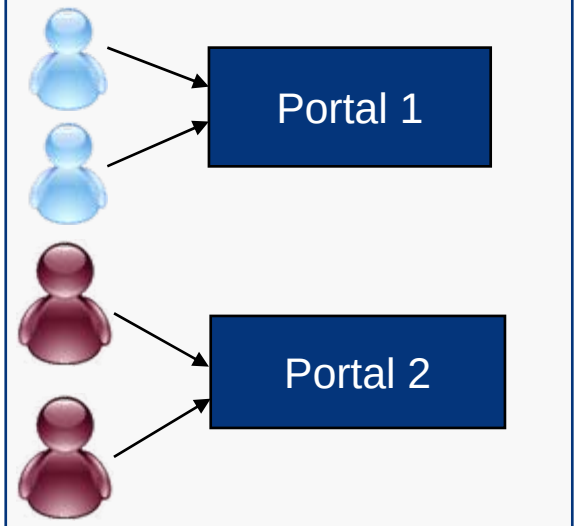
Approach

- Using FPN mechanism for sharing certain content between multiple portals

Benefit

- Central access to content via consumer portal
- Autonomous sub-portals
- Independent administration (e.g. release version)

Separate Portals (2 .. n portals)



Approach

- Installation of autonomous portals for dedicated scenarios

Benefit

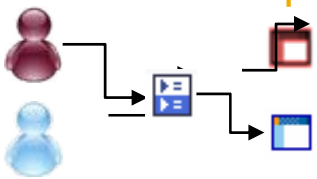
- Full flexibility in administration (e.g. release version)
- Avoid any dependencies or impacts (security aspects)

Logical Separation in a Central Portal

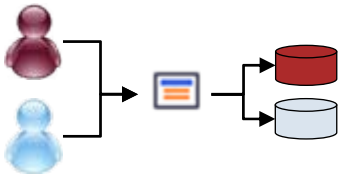
End User / Runtime

- Roles-based access

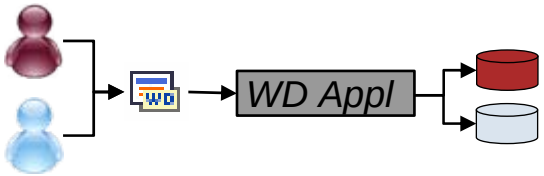
- Themes / Desktops:



- Access Different Backends
  - Dynamic System Resolution:



  - Destination Mapping:

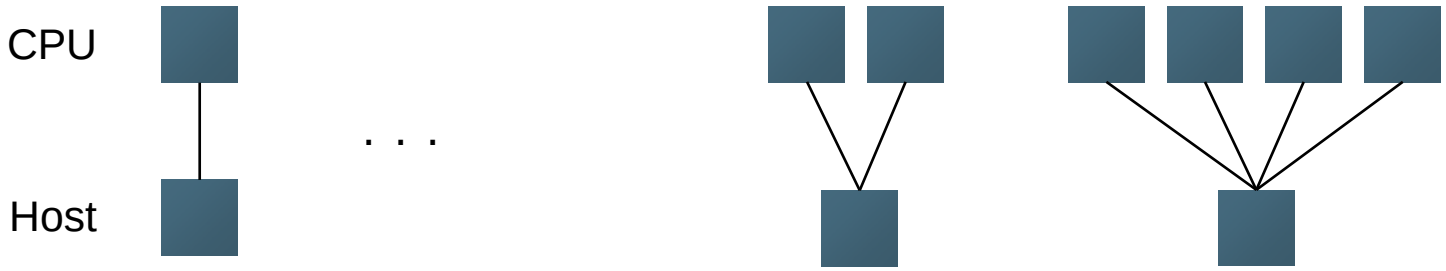


Administration

- Delegated Administration
  - User Administration - Companies: define sets of users for delegated user administration
  - Content Administration – Define Permissions on PCD level
- Namespace prefix: clearly identify objects and assign them to a certain organizational unit
- Security Zones: control access to portal components and services in the portal

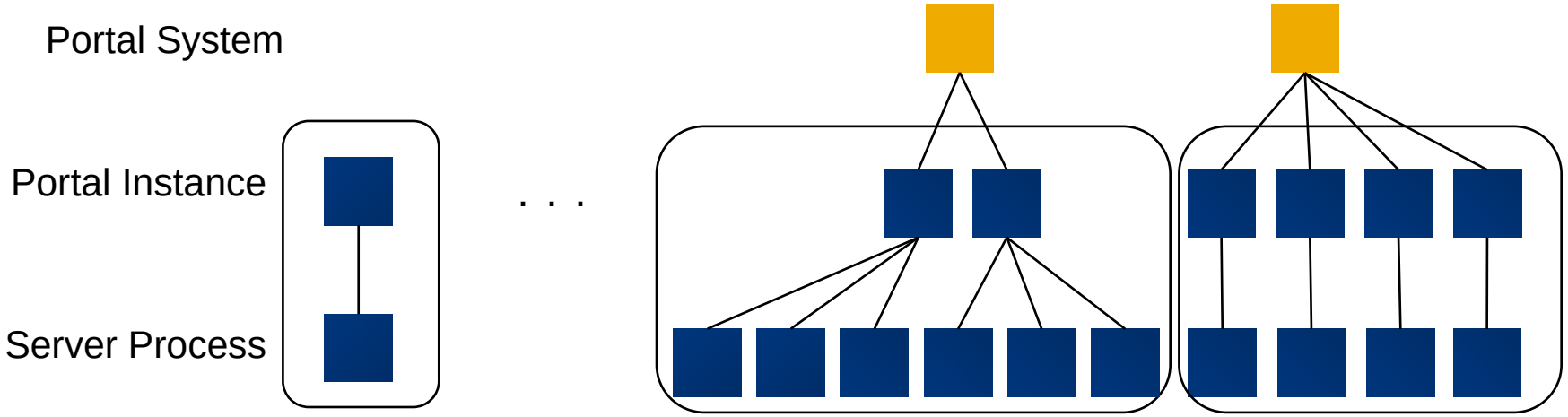
Portal Deployment Options – Scalability (1)

- SAP NetWeaver enables you to flexibly scale your portal system across multiple physical hosts or logical system instances:



Physical (hosts) – horizontal scaling

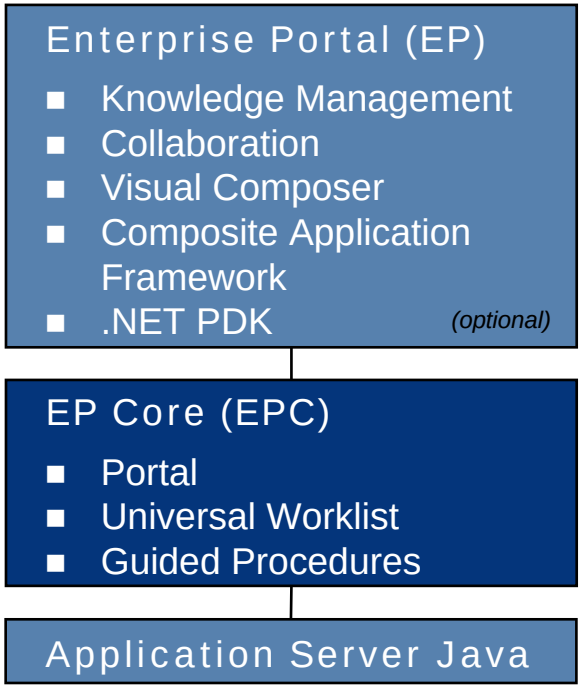
Logical (NW Systems / Installation) – vertical scaling



SAP NetWeaver Portal – Installable Units

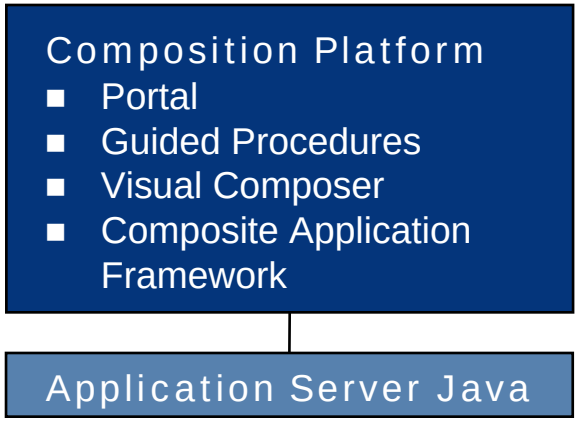
Release: SAP NetWeaver 7.0

- Benefits:
  - Full enterprise portal capabilities
  - Flexible installation options
  - Reliable and stable platform
- Installation Options:



Release: SAP NetWeaver CE 7.1

- Benefits:
  - Lean portal platform
  - Latest technology standards
  - Provides new capabilities
- Installation Options:

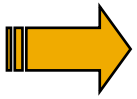


Agenda

1. Overview
   - 1.1. Portal Implementation Scenarios
   - 1.2. Focus Area Corporate Portals
2. User Productivity Infrastructure
   - 2.1. Portal Deployment Options
   - 2.2. Portal Scaling
3. **Building the Portal Infrastructure**
   - 3.1. Security Aspects, HA, Scheduled Downtimes
   - 3.2. Sizing, Monitoring, Transporting
   - 3.3. Figures from SAP Corporate Portal
4. Summary
   - 4.1. Summary
   - 4.2. Further Information, Notes, Blogs

Guiding Principles

1. Start small, grow over time
2. Always use a top down approach - refining the details in the next iteration
3. Try to drive Portal projects with business acumen and not simply as a infrastructure project
4. Try to organize your projects using a pipline with short/mid/long term targets
5. Treat building the infrastructures as a long term approach that needs multiple recursions and variations
6. Document your decisions and configuration for later troubleshooting and QA
7. Obtain the Security department‘s approval



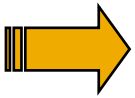
Let‘s try to use these principles in the following Business Example

Example Business Scenario

The company ITelO offers various services to different user groups:

- Anonymous internet user or customers
  - Public information about the products, company news and events
  - Lightweight internet shop applications for selling products
  - Subscriptions to newsletter
  - Download areas for manuals or software
- Registered partners and suppliers
  - Detailed information about products, contacts,
  - Availability status of purchase orders
  - Presenting and processing invoices/bills electronically for direct invoicing
  - Collaboration project workspaces and other B-2-B scenarios
- Employees
  - Corporate information such as news & events, address book, corporate policies and guidelines, strategy and how-to papers
  - Employee Self-Services for maintaining personal data, planning trips, …
  - Reporting and approval workflows
  - Collaboration rooms for colleagues working in worldwide projects

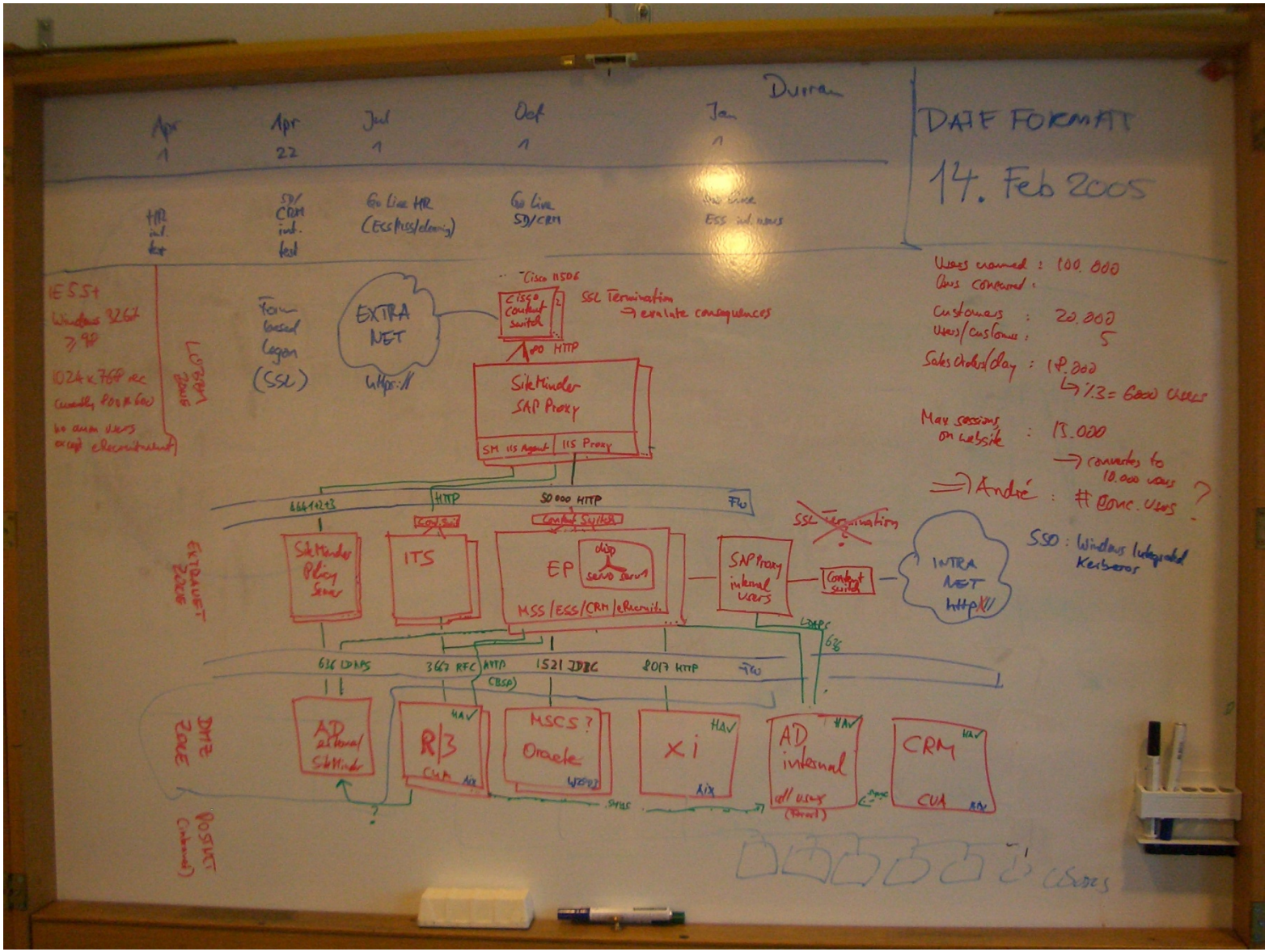
How to approach?



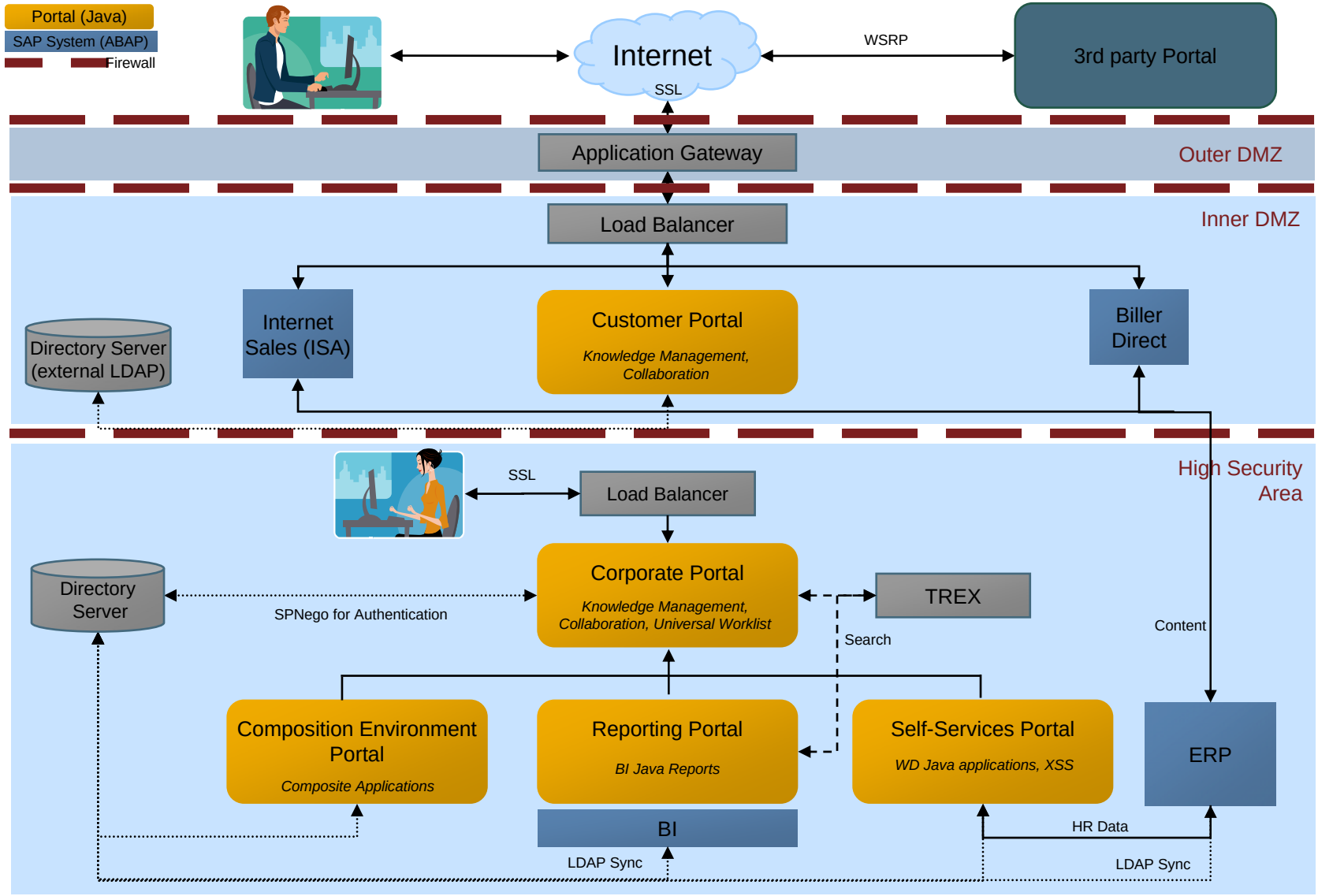
Start using the top down approach to collect the required information

- Which building blocks already exist
- Collect application information
- Compile matrix with release dependencies
- Start at board level
- Try to get a logical big picture
- Refine the big picture
- Define the system landscape tracks
- Draw a system landscape matrix
- Use the tracks as import for your transport and change management processes
- Define HA strategy
- Define Firewall/LoadBalancer/ ReverseProxy configuration and rules
- Create Hardware Procurement lists
- Keep track of SSL certificate ordering
- Keep track of needed licenses
- Put everything together in one document
- Approval process
- Standard vs. Custom coding

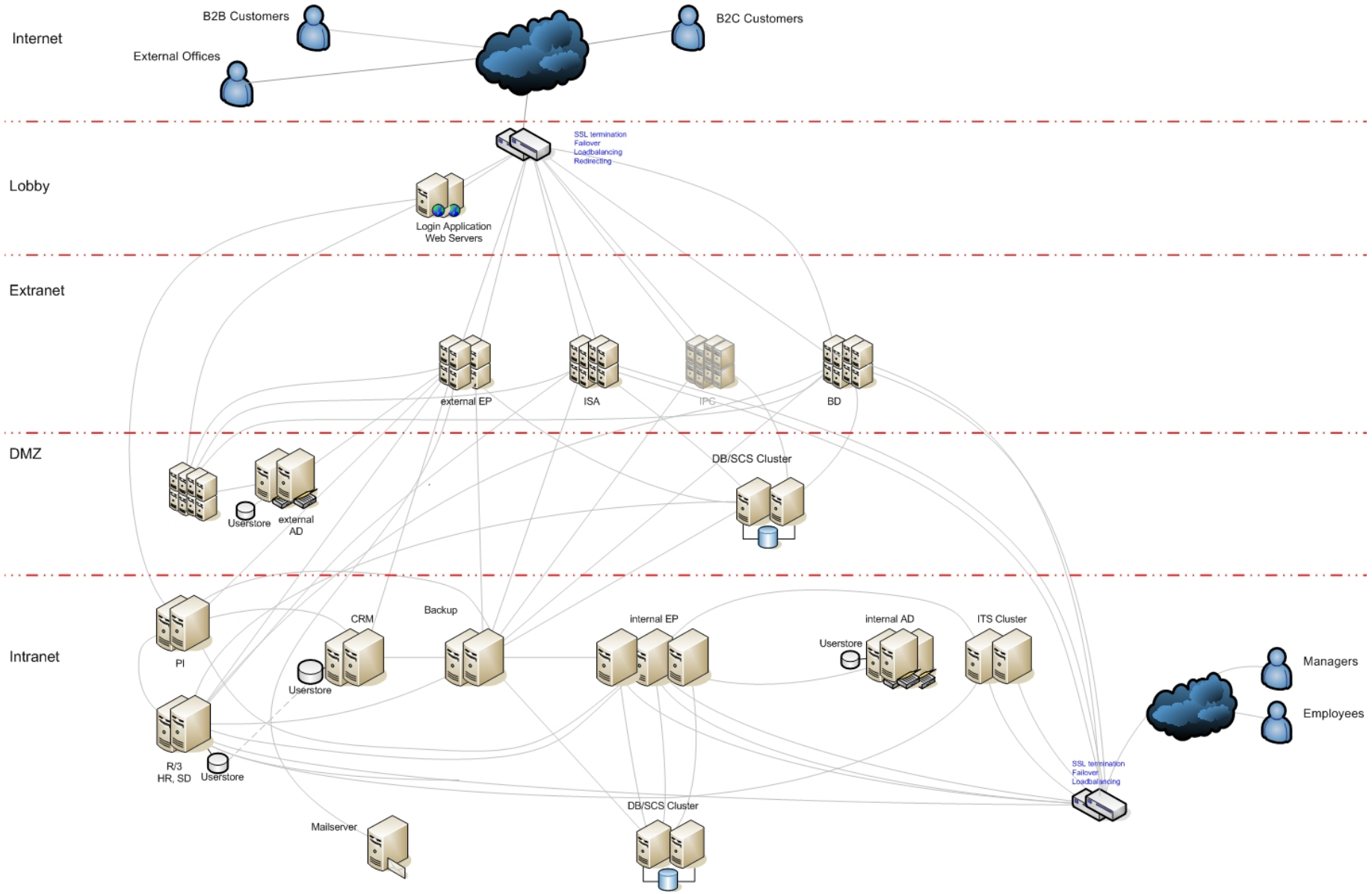
Start at Board Level



Logical Big Picture

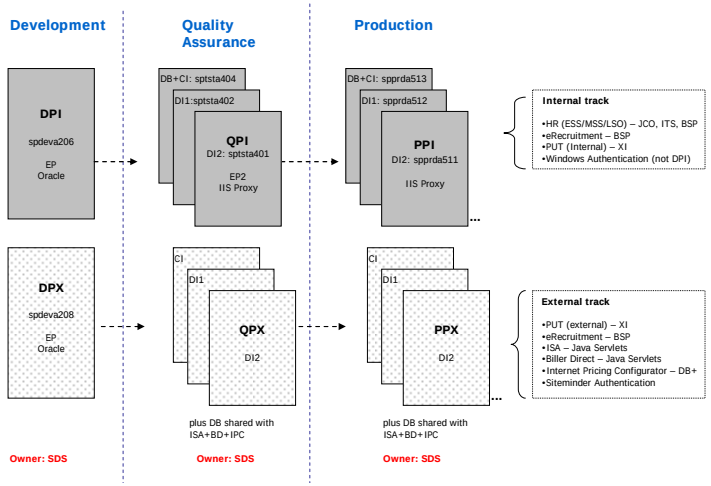


Refine the Big Picture

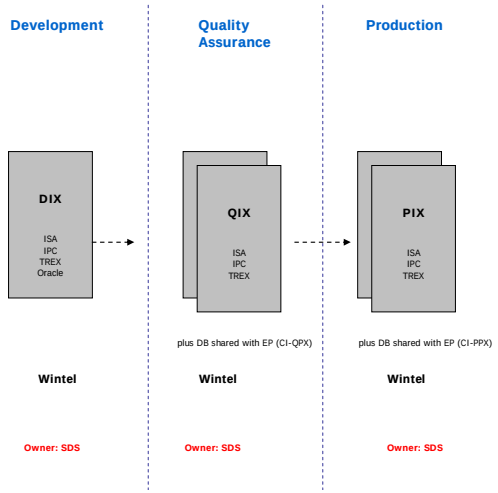


Define the System Landscape Tracks

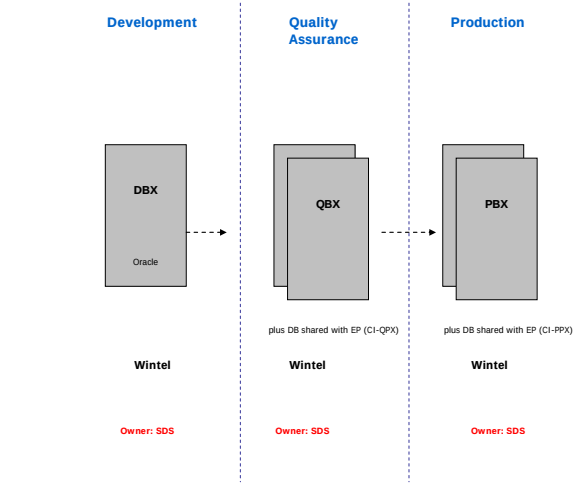
Portal System Landscape Tracks



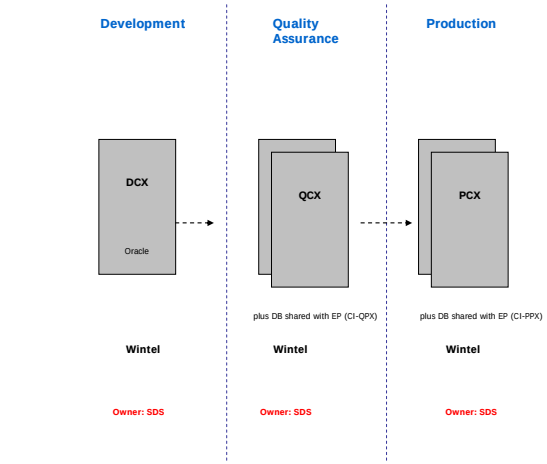
Internet Sales System Landscape Tracks



Biller Direct System Landscape Tracks



IPC System Landscape Tracks



Put Everything Together in One Document (Example)

Sample Impacts of Technical Decisions

SSL termination

- We decided to terminate SSL at the first Load Balancer in the datacenter for performance and intrusion detection reasons
- This requires that all integrated applications support this setup properly
- Issues encountered
  - some LoadBalancer cannot set HTTP header ClientProtocol with each request needed to be work-arounded in Web Server filter
  - one old application required changing hardcoded protocol strings in BSPs
  - overhead of correct certificate handling and Content Switch configurations was difficult for project team

Release Dependencies

- Check SAP Notes and Installation Master Guides to investigate forward and backward dependencies of all used components
- Quite often e.g. Business Packages are tightly bundled to the release of the ERP system, while a lot of exceptions exist, which need to be checked case by case
- Issues encountered
  - It was possible to use Biller Direct 6.0 together with 4.7 based ERP, which was supposed to be upgraded soon

Summary and Lessons Learned

- It‘s a long way to get everything in place
- Focus on the big picture, don‘t be distracted by inflated small issues
- Exchange with experienced colleagues or use the various cummunities to leverage other projects‘ experiences (e.g. SDN Forums)
- Don‘t get stuck in the architecture decision „loop“
- Be pragmatic, you only have certain time and budget to finish
- Document everything that is important, be consequent on this
- Plan into the future, if things also can be done in another way, your project might go for this sooner or later

DEMO

Customer Portal

Business case: public website for internet users, customers and partner (including area for registered users with access to special content and applications)

Applications and Content:

- Mostly static HTML-content (e.g. facilitate by Web Page Composer and KM framework)
- Lightweight application such as CRM internet sales (Business Package for SAP CRM)
- Integration of third party content can be provided through WSRP (external portal content)

Network Infrastructure:

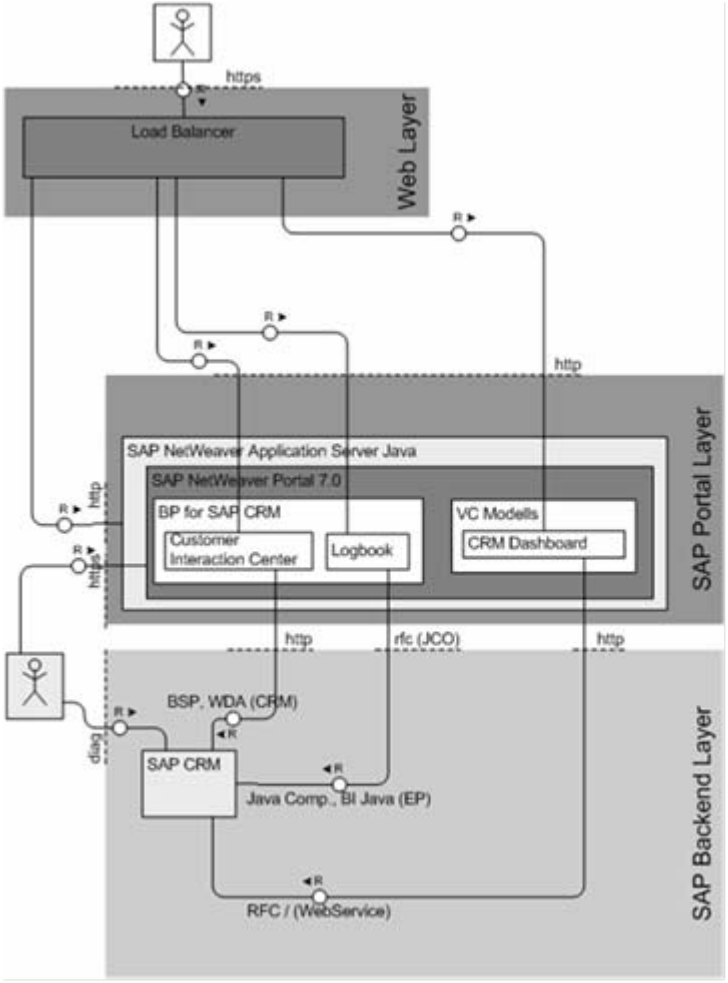
- Secure infrastructure (use multiple network zones, use application gateway to protect the portal and applications)
- Only very restricted access to the internal backend system of inner DMZ if needed via RFC

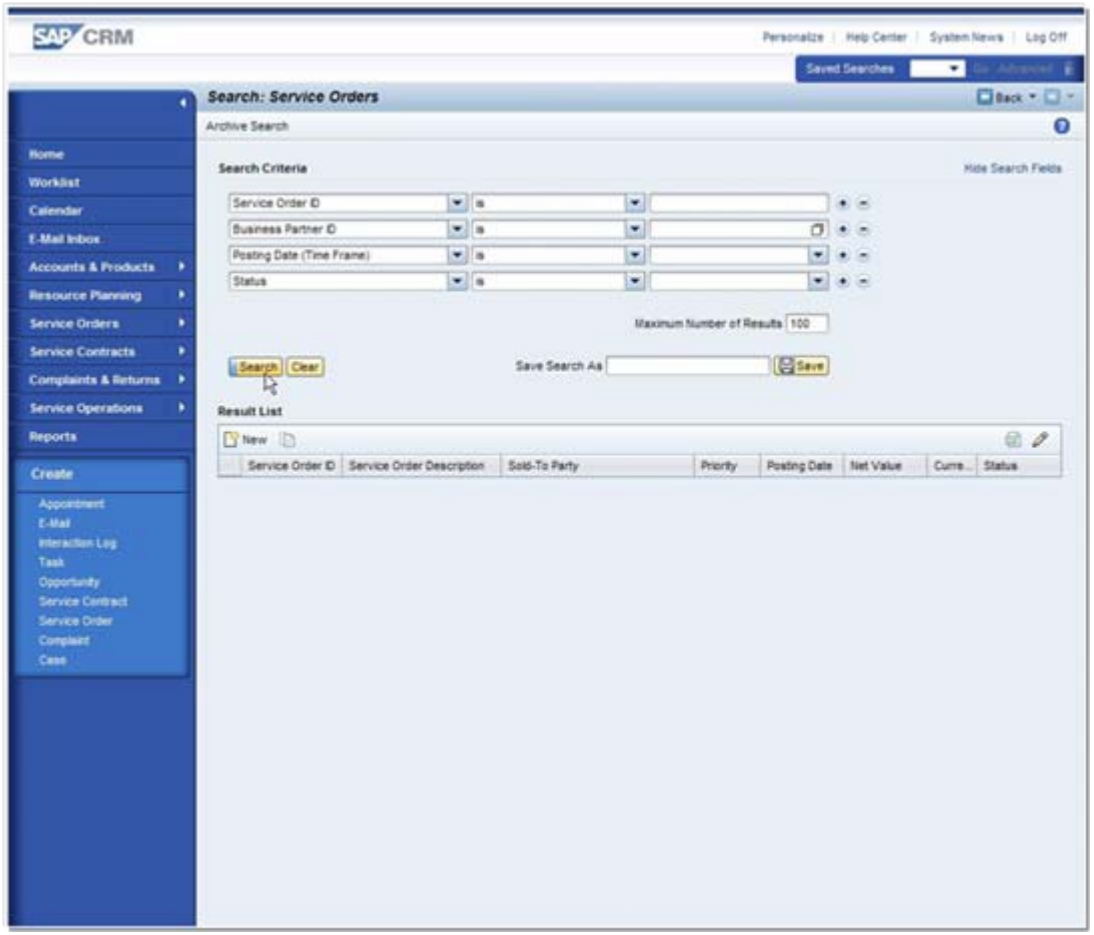
Portal Infrastructure:

- Switchover cluster needed for high availability setup
- Usage types EP Core and EP to leverage full enterprise portal capabilities including KMC
- High scalability setup could leverage adaptive computing technology
- User management in LDAP available in DMZ
- Load balancer needed for workload distribution between system instances
- Usage of an application gateway/reverse proxy for securing internet access

Example CRM Integration

CRM: The example illustrates the integration of various CRM applications using a Central Portal Scenario using the CRM Business Package.





Self-Services Portal

Business case: Self-Services Portal providing access to self-services from the SAP ERP back end system)

Applications and Content:

- SAP ERP Business Packages (e.g. Employee or Manager Self-Service)
- Other applications (e.g. Web Dynpro based) for ordering equipment, booking rooms or doing travel arrangements from within the corporate portal

Network Infrastructure:

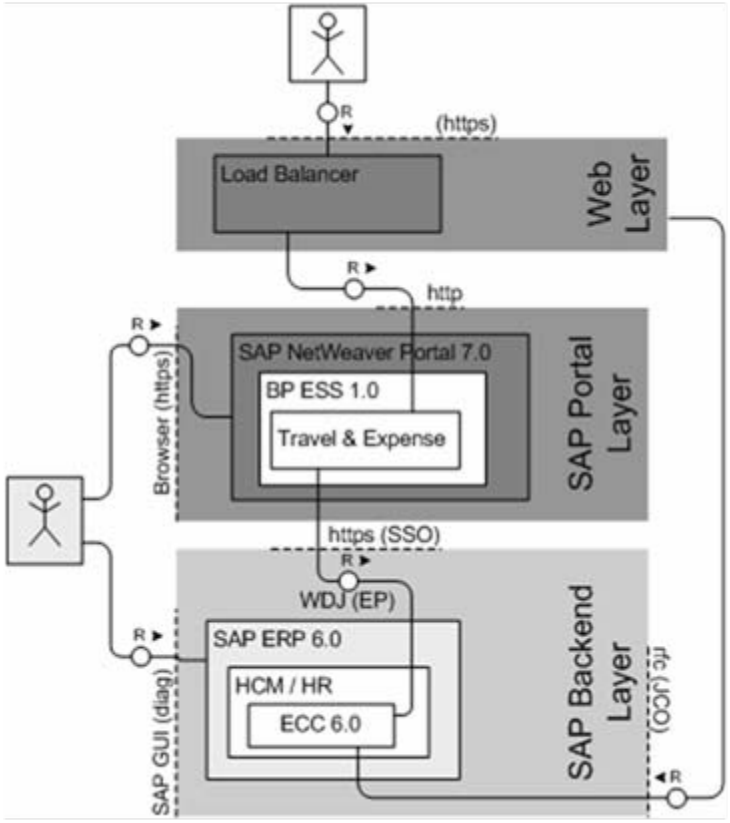
- Accessible from the Intranet
- Accessible for certain functionality only via RFC/SNC (e.g. Web Dynpro applications, ITS-scenarios) from the customer portal

Portal Infrastructure:

- Usage types AS Java + EP Core + relevant business content from ERP
- User management → ERP system (which is synchronized with Directory Server via Transaction LDAP)
- Integrated into the corporate portal by means of FPN
  - Keep the content administration within XSS-Portal
  - No release dependencies between XSS-scenarios and corporate portal

Example HCM/HR Integration

HCM/HR: Integration of ESS Travel Expense Management exists in two versions. Depending on the version of the Business Package used (Web Dynpro Java vs. Web Dynpro ABAP) – there are different scenarios existing.



Composition Environment Portal

Business case: Portal for running composite applications

Applications and Content:

- Composite Applications (using Java 5 EE or Web Dynpro technology) build with Composition Environment:
  - Visual Composer based modeling
  - SAP NetWeaver Developer Studio

Network Infrastructure:

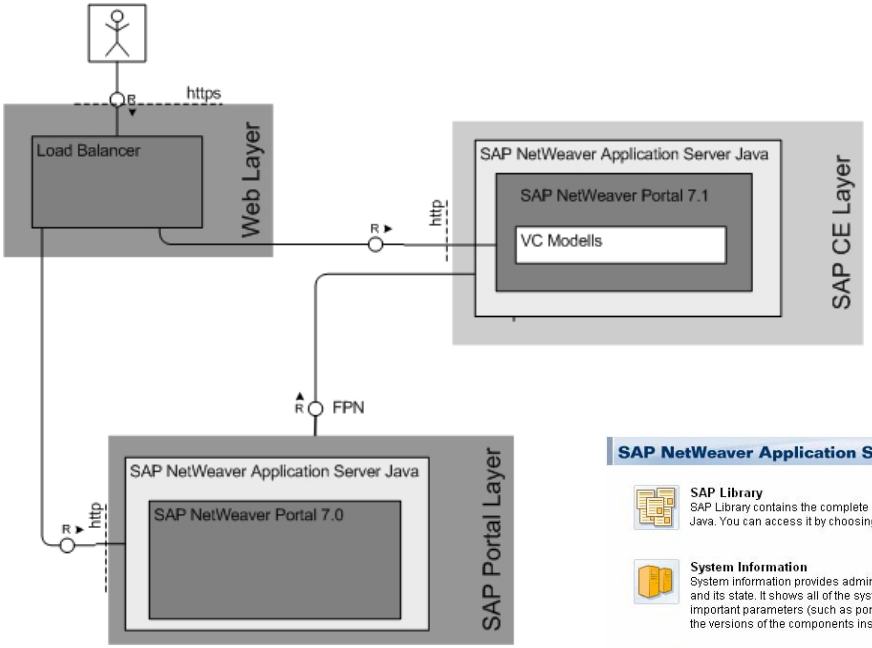
- Only accessible from the intranet (no internet connection allowed)
- Access to relevant backend system that provide enterprise services for the composition tools

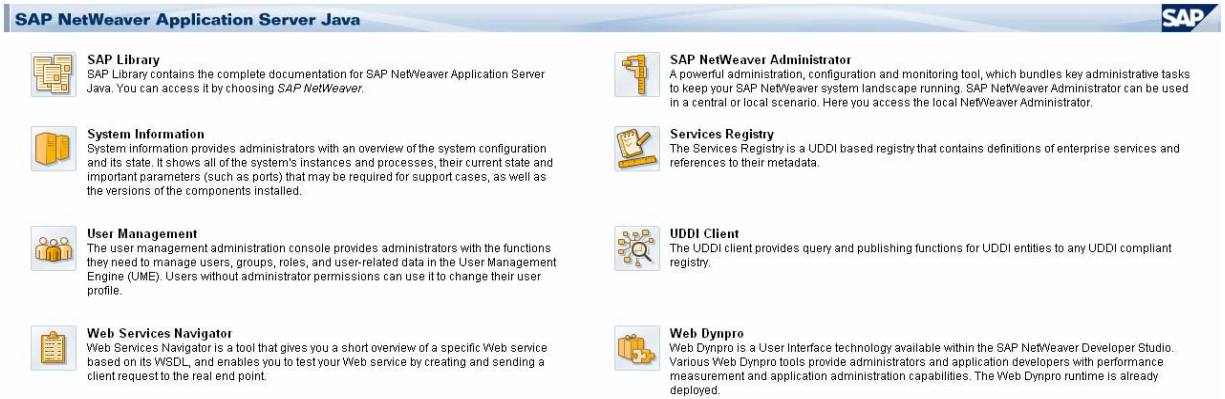
Portal Infrastructure:

- Composition Environment: installation option “Composition Tools” including the portal platform (no KM or Collaboration available)
- User management → Directory Server (e.g. ADS)
- Composite applications integrated into the corporate portal by means of FPN (CE serves as runtime for the composite applications)

Example CE Integration

CE: Integration of e.g. Visual Composer based iViews created in SAP NetWeaver Composition Environment is integrated via a FPN scenario to SAP NetWeaver Portal 7.0





Reporting Portal

Business case: Portal for managing and performing reporting activities to avoid high load on the central portal

Applications and Content:

- Business Intelligence web reporting
- Information Broadcasting

Network Infrastructure:

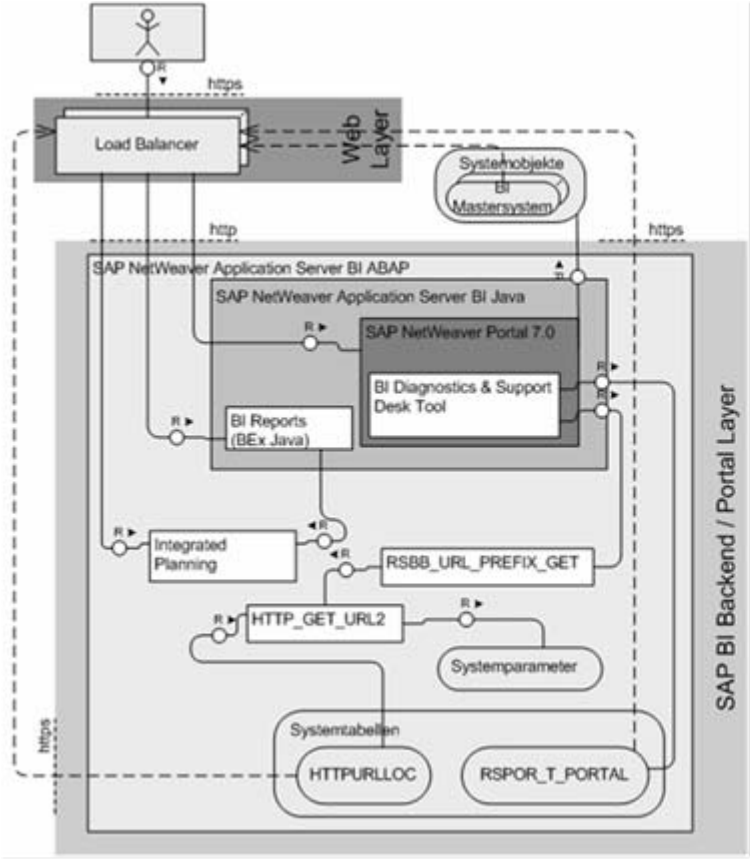
- Only accessible from the intranet (no internet connection allowed)

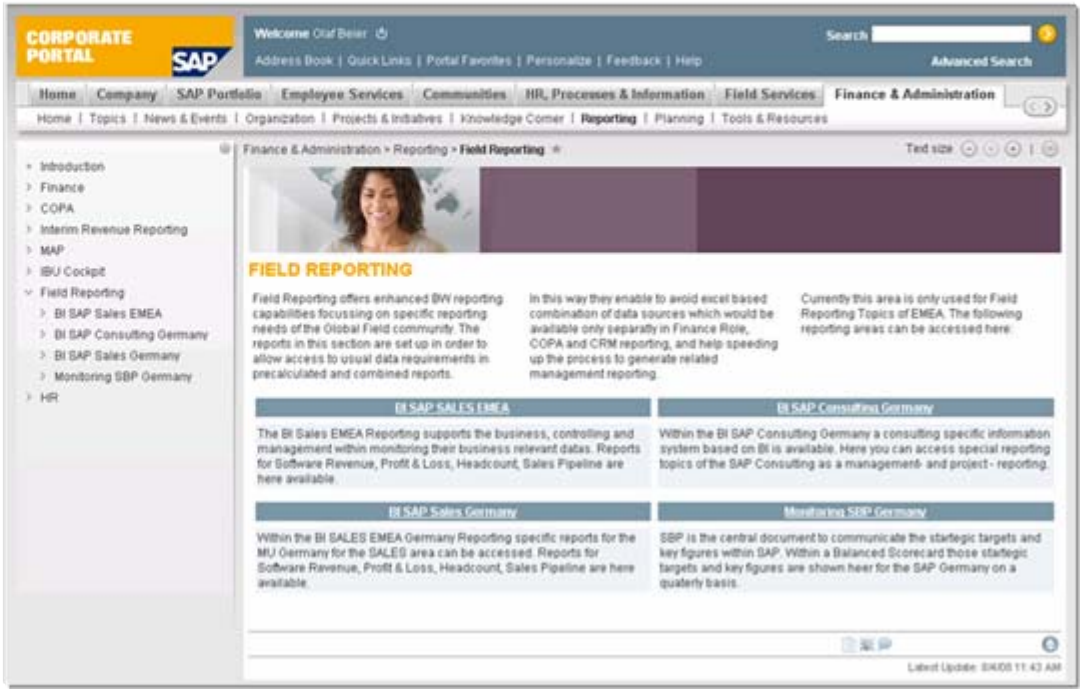
Portal Infrastructure:

- Usage types AS ABAP + AS Java + EPC/EP + BI-Java and BI
- User management ABAP: synchronization of user data with ADS (transaction LDAP)
- Login only allowed via SSO: end users will not get passwords for the BI system
- Integrated into the corporate portal by means of FPN
  - Keep the content administration within BI Java Portal
  - Dependencies between BI-Java and corporate portal: due to 1:1 relationship every additional BI-Java front end needs a separate portal

Example BI Integration

BI: Using BI Reports in a BI Portal scenario can be done by accessing the BI Portal directly or by integrating the reports using a FPN scenario in combination with a Central SAP NetWeaver Portal 7.0





Corporate Portal

Business case: Central corporate portal for all employees

Applications and Content:

- Managed content for corporate news, articles, department sites using Web Page Composer
- Document management for providing downloads and services such as subscriptions
- Collaboration rooms for sharing knowledge and collaboratively work on documents
- Approval Workflows via Universal Worklist
- SAP Transactions for information workers/non-power users
- Self-Services scenarios for all employees
- Access to BI Web reporting for special user groups such as managers

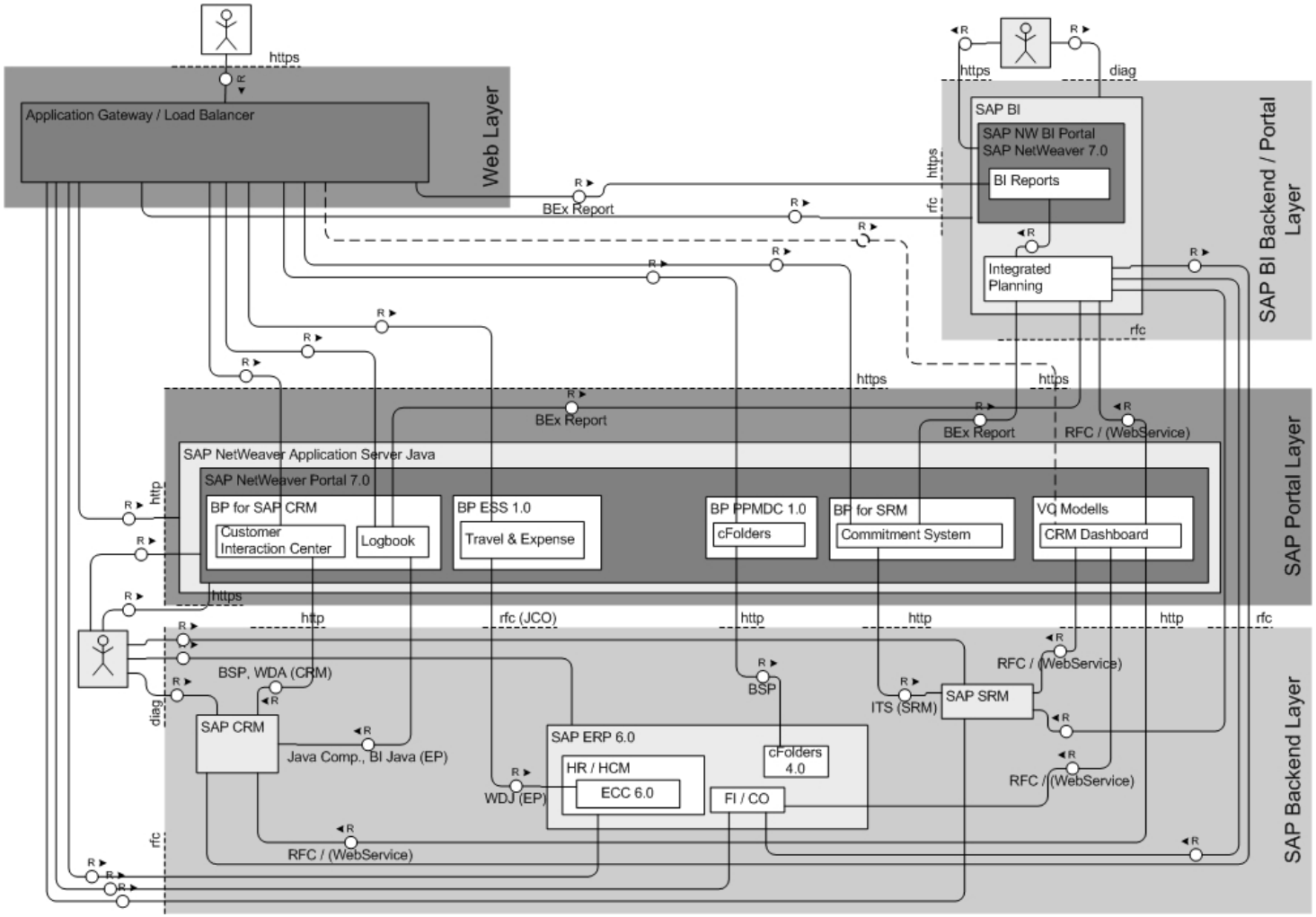
Network Infrastructure:

- Accessible only from the Intranet via secured connection or by means of VPN/WTS
- Connect remote locations via Web Accelerator solution: “Application Delivery over WAN”

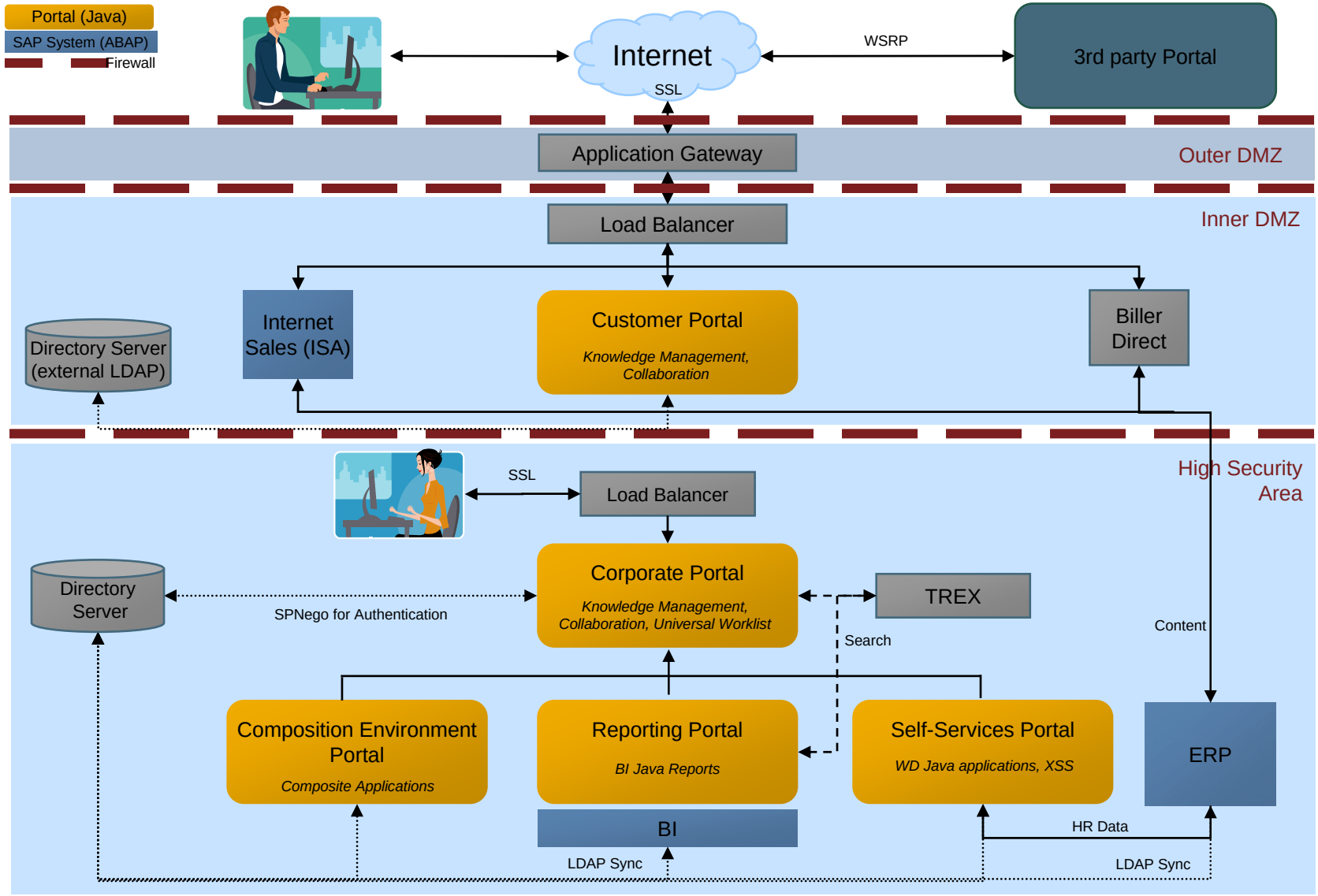
Portal Infrastructure:

- AS Java + EPC/EP to get full enterprise portal capacities (portal, KM, collaboration, UWL)
- User management: Directory Server (e.g. ADS)
- Authentication for the end user via SPNego (Kerberos) “Windows SSO”
- BI-Java and Self Services integrated via FPN (using Remote Roles Assignment)
- HA infrastructure with switchover solution and continuous availability concept to reduce planned downtimes during maintenance windows (shadow system: clone-update-rollback)
- Load balancer needed for workload distribution between instances
- TRex installation shared with BI reporting portal

Example of Consolidated Landscape



Building a Portal Infrastructure



Positioning of Servers in the Network Zones (1)

Where should the following components be located?

- Generally
  - If there is no direct interaction between a web client and the application server (e.g. a SAP Backend that is called via JCO by a portal iView) keep it in the “high security area”
  - Web applications that are called by the client should reside in the “Inner DMZ”
- Database Server
  - Located “close” to the respective SAP NetWeaver AS to optimize:
    - performance
    - session stability
    - latency
  - Install the database in the same network zone as the application server
- LDAP directory
  - For external users: within the DMZ
  - For internal users (or in case of unique user persistence): in the backend (since it is used by other applications also; e.g. ADS)
- Please distinguish Operating System users and Java AS-users

Positioning of Servers in the Network Zones (2)

Where should the following components be located?

- TRex
  - As the TRex only interacts with a server in the DMZ (e.g. Portal/KMC or ISA) it can be considered a backend server and therefore located in the high security area
- KM-Repositories
  - CM-Repository is normally located in the database (e.g. setting “db only”)
  - Other repositories: depends on the repository type and the access that is provided (could be located in high security area or Inner DMZ)
- ITS / SAPGUI for HTML (aka WebGUI) / BSP-Applications / BEx-Web-Applications
  - Likely to be accessed directly by the client (exception BW-FullProxyMode)
  - Due to backend nature should reside in the high security area
  - May need additional gateway in the Inner DMZ (e.g. SAP Web Dispatcher, Reverse Proxy)
  - In case of non integrated ITS WGate should be located in Inner DMZ, AGate in high security area
- Application Gateway / Load balancer
  - Load balancing between Application Gateways
  - Application Gateway to protect the Load Balancer
    - Depends on scenario specifics (e.g. Sizing of Application Gateway)
    - Typically Application Gateway protects Load Balancer
- Application-specifics
  - Check requirements for additional components that might be needed for the respective business scenario (e.g. CRM-ISA, HR-eRecruitment, LAC etc.)

Potential Complications

Details in LCM265

Infrastructure complexity increases if

- Applications are accessed by employees from various locations
  - Regional subsidiaries
  - Global subsidiaries
  - Kiosk access
  - Connection via WAN, dial-up, satellite
- Applications are accessed by customers, partners, suppliers, …
  - Dial-up connection
  - Browser requirements
  - …

Increased complexity may require usage of additional infrastructure components

- WAN acceleration products like SAP Application Delivery over WAN
- Web Cache/Web Proxy
- Terminal Server
- Virtual Private Network

Hardware Infrastructure

Some common hardware infrastructure

- Firewalls
  - Security for access control, user authentication, and network and application-level attack protection
- Web Appliances
  - Scalable approach to accelerating application performance, increasing WAN capacity, and enabling application prioritization and visibility
- Load Balancers
  - Provide means to scale your application infrastructure and facilitate HA and switchover solutions by distributing load to clusters of servers
- Application Gateways
  - Protect applications from direct access by clients
  - Can also provide performance improvements when used in combination with caching

General Thoughts on Security

How to make this landscape “secure”?

- No two companies are the same: answers range from everything must be encrypted to nothing is secured (totally customer specific security requirements)
- The usage of different network zones is strongly recommended
- The “first line of defense” is likely the most crucial component
  - Usage of an Application Gateway recommended (could be anything from Apache up to highly sophisticated hardware solution)
- Only expose what is really needed for the business application (e.g. opening port, positioning servers in the infrastructure)
- Without proper monitoring and operation there is only limited security
- “Security by obscurity” is not sufficient (e.g. switch between unsecured protocols, usage of “hidden”-URLs)
- The infrastructure is important – but application layer security is crucial (password policy, security zones, role-concept, ACL’s)
- Establish secure connections via SSL between the different components (e.g. using Login Modules / SSO Trust relations ships)

Portal Security Considerations

As the SAP NetWeaver Portal runs on SAP NetWeaver AS Java, make sure you have followed the suggestions:

- Modify all access restrictions to allow required but minimal access only
- Apply all available and recommended patches regularly for all components used in SAP NetWeaver
- Modify the portal permissions for iViews and security zones to provide users with exactly the permissions they require and not more
- In a portal installation that will be used productively, remove all iViews that are not required (using reports of support platform)
- Delegate administration tasks among several users
- Disable user self-registration if not required
- Perform comprehensive security assessment following your specific secure programming guide (especially custom-built applications)
- Create awareness for secure behavior

Ensuring Data Security for Collaboration Rooms

Security aspects for External-Facing collaboration rooms

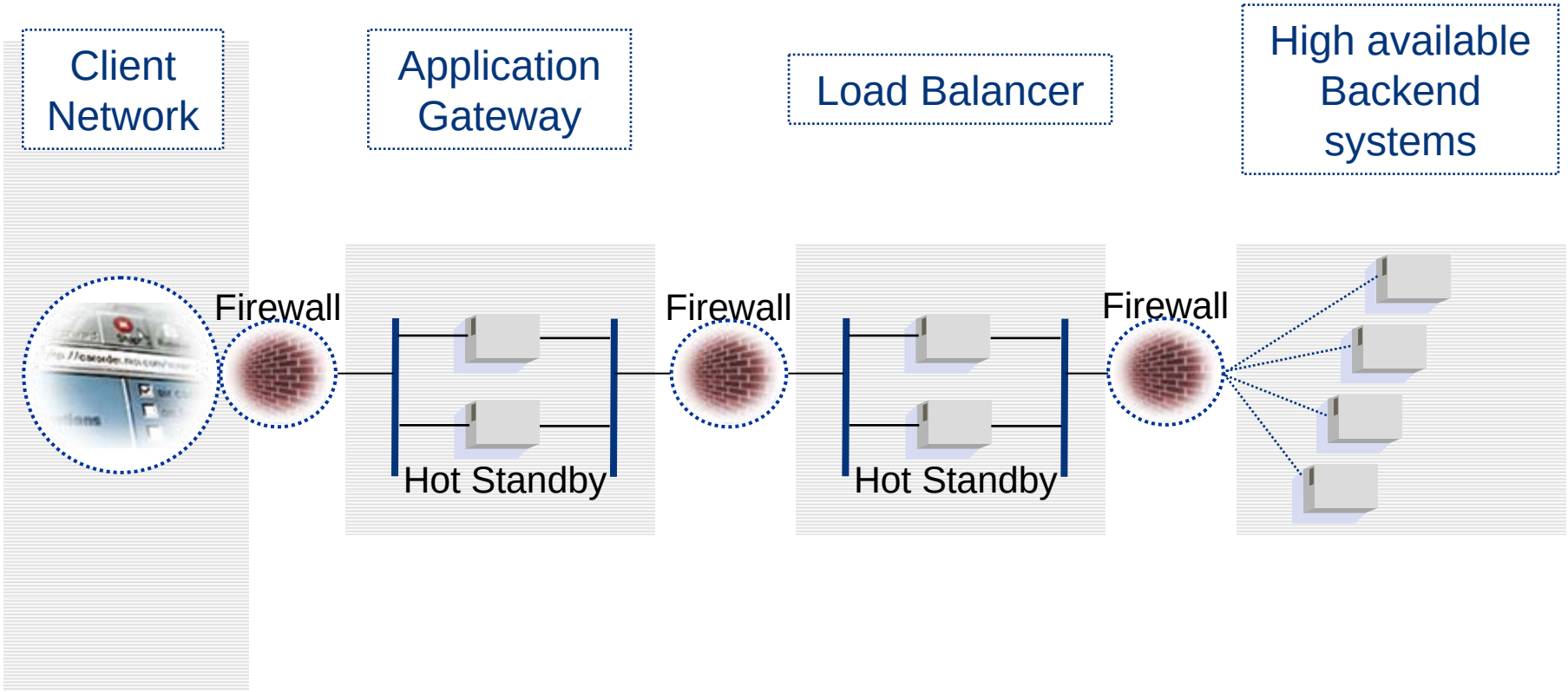
- External users can have access to user data and collaboration services
- Ensure to which extent user data is accessible and which collaboration services are displayed (via role concepts, permissions, ACLs)
- Perform regularly a proper monitoring for identifying usage / attacks
- Allow only certain mime types for upload (configurable)
- Deactivate unnecessary KM and collaboration services

Differentiating the display of user data

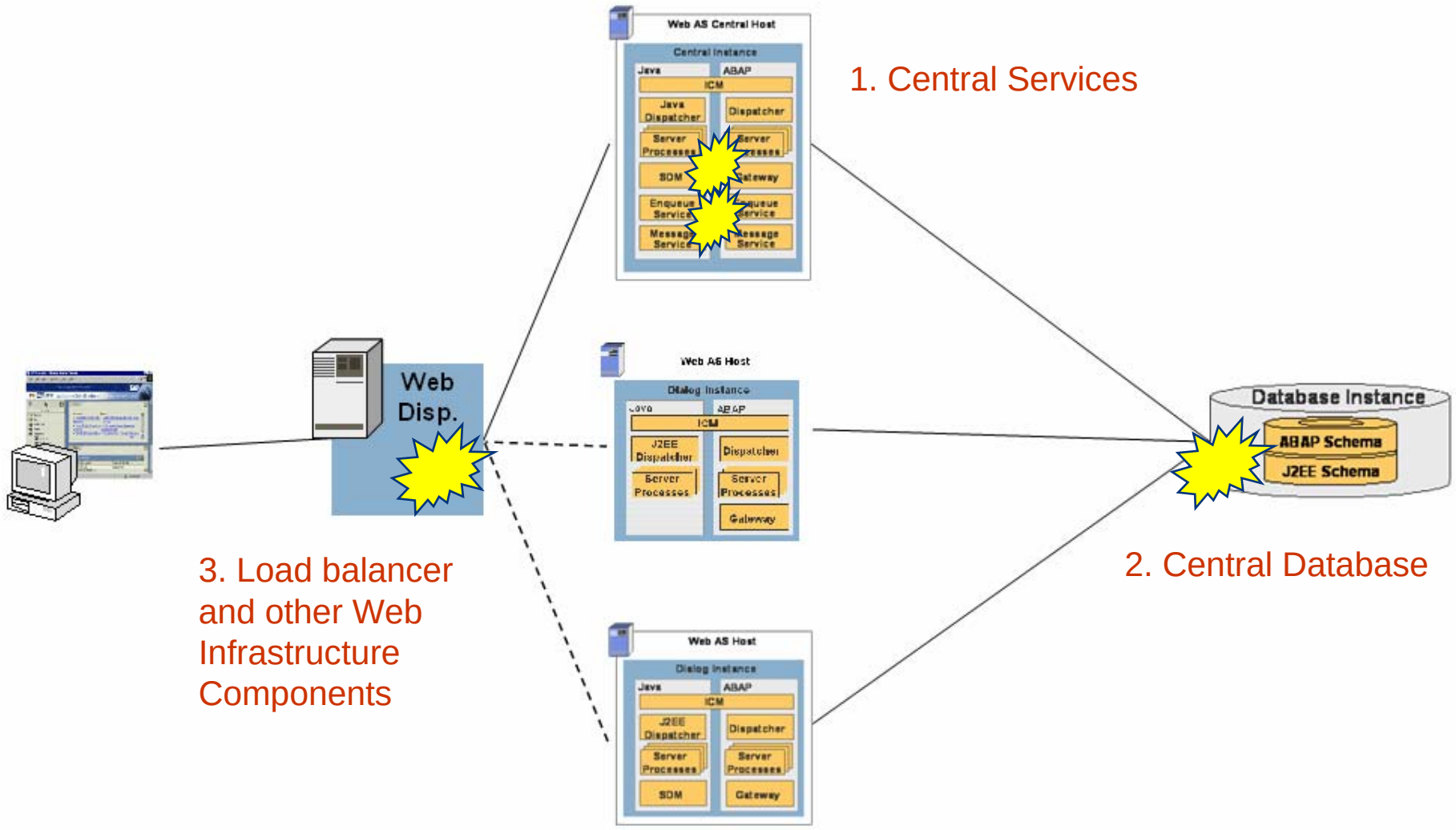
- SAP supplies an extension that can be activated and configured. The configuration settings (e.g. People Rendered Profile) apply to the following:
  - Search for users, groups and roles
  - Display of users, groups and roles
  - Access to collaboration services
  - Sending e-mails from within the portal

High Availability (HA) Solutions for SAP NetWeaver AS

Depending on the capabilities of the different systems/ applications used, the optimum HA setup may be different.

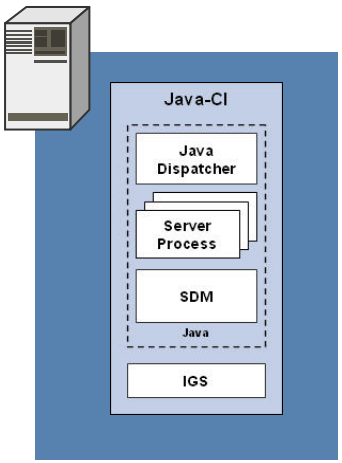


SAP NetWeaver AS: Architectural (Potential) Single Points of Failure



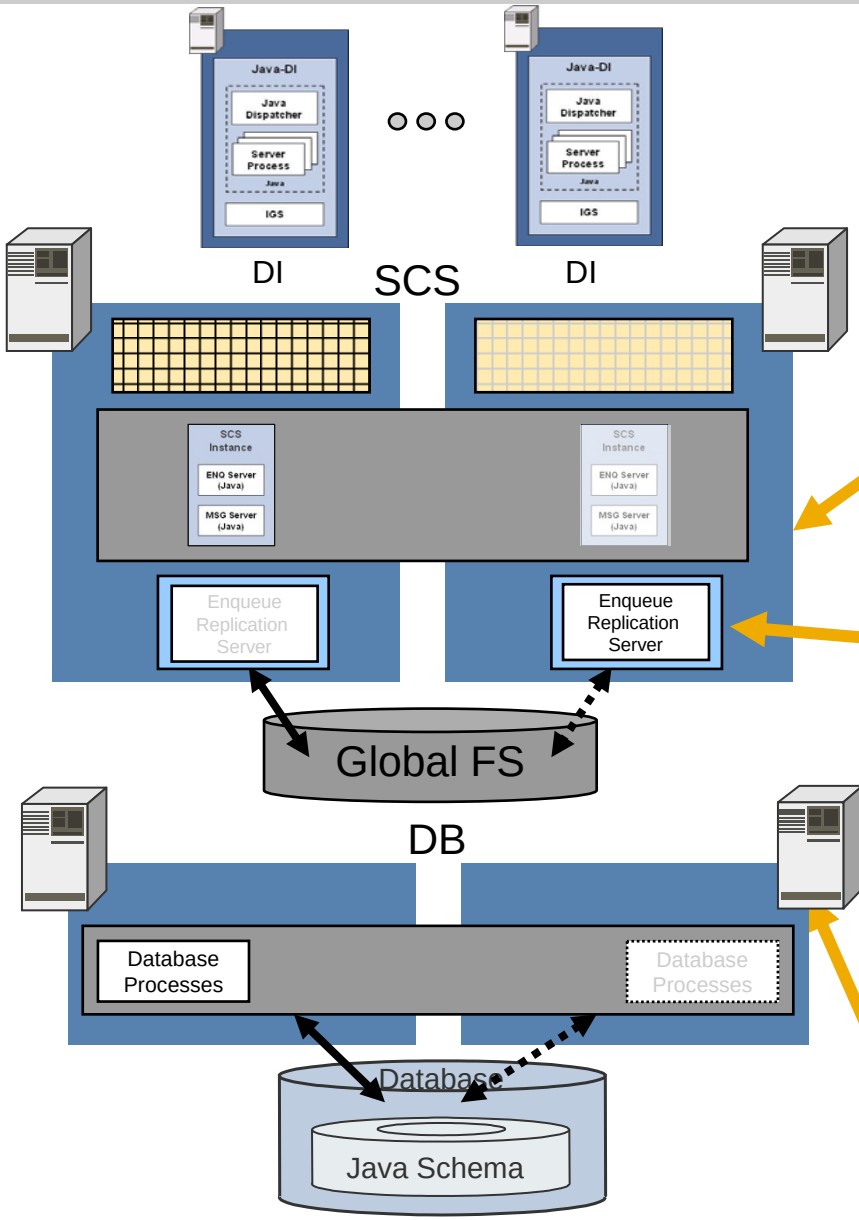
Besides these architectural SPOF, the central file share (“/sapmnt/...”) represents also a SPOF from a technical (installation) point of view.

DB and SCS, Each in Its Own Switchover-Group, CI Outside the Switchover Environment



Java-CI

Java-CI installed outside the switch-over environment

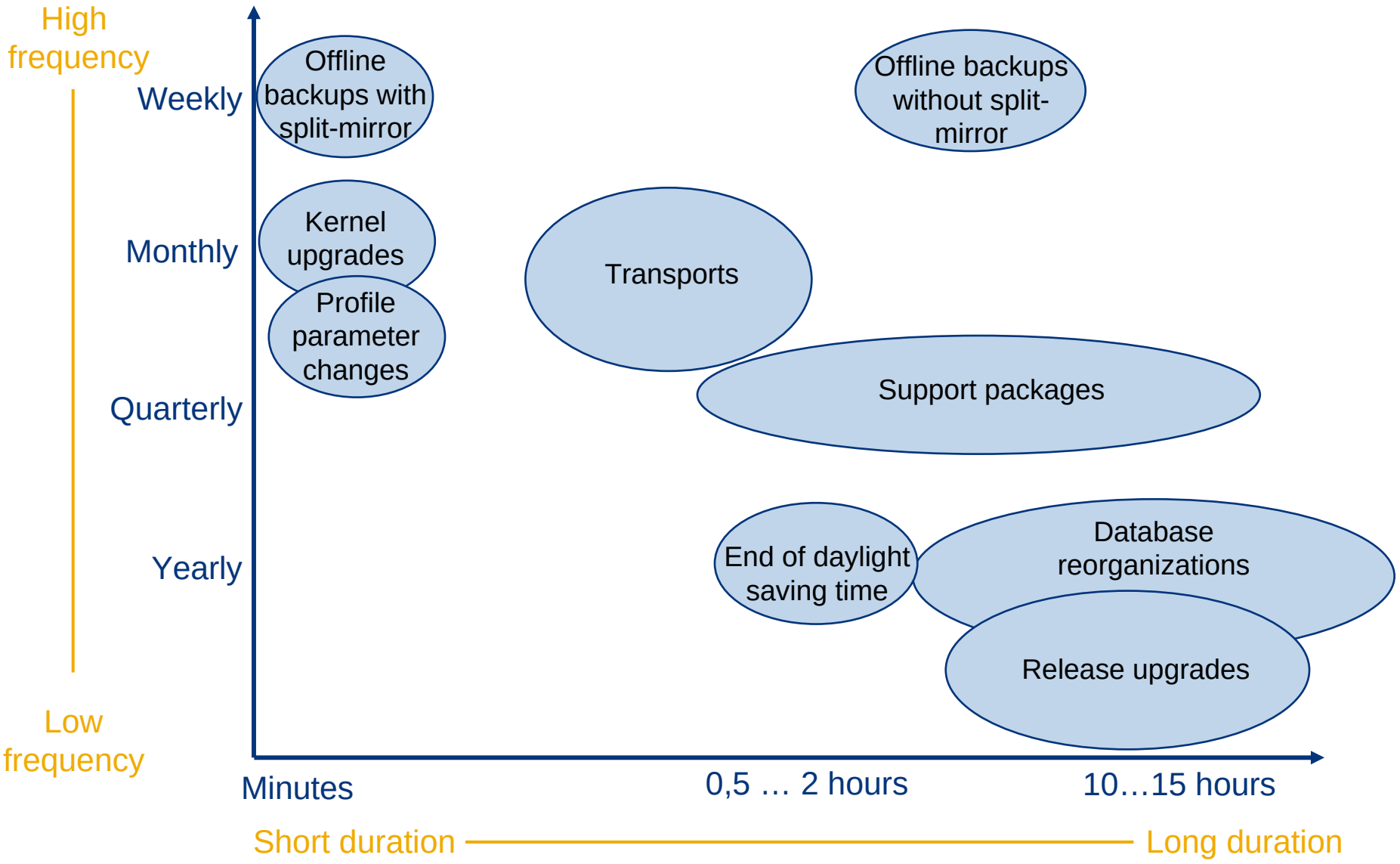


ENQ and MSG Server are separately installed within its own switch-over group

Enqueue Replication Server active on 'passive' host

The database has its own switch-over environment and switch-over group

Planned/Scheduled Downtime



Portal Sizing & Performance – Overview

Details in LCM102

The portal on SAP NetWeaver AS Java has specific requirements for sizing, performance, scalability across multiple servers and load-balancing.

In a complex infrastructure there are different components besides the portal that may influence the performance:

- Backend systems and databases
- Network, firewalls, router / dispatcher, etc.

Concrete portal sizing recommendations depend on

- Number of users (named / anonymous)
- User types (active, concurrent, …)
- User activities (navigation steps per time unit)
- Amount and structure of (customer-specific) content (HTML, GUI, …)

Sizing Guide on SAP Service Marketplace "Sizing SAP NetWeaver Portal"

General information – QuickLink /sizing, /benchmark and /performance

Example for Sizing Process

1) Initial Sizing with SAP QuickSizer
   - QuickSizer as tool for initial sizing delivers SAPS number as result and input for hardware vendors (http://service.sap.com/quicksizer)
   - Providing first suggestions for hardware budgeting & planning

2) Configuration and landscaping
   - Setup of the infrastructure and configuration of systems / server

3) Expert Sizing: Customer Performance Tests
   - Stress Tests, Performance Load Tests
   - Detect about 80% of all larger performance issues in test systems
   - Recommended before “Going Live”

4) Re-Sizing / Optimization
   - Re-sizing due to further portal implementations (e.g. new Business Packages and customer-specific development of new applications)

Different Times, Different Phases, Different Goals of Sizing

Sizing takes place in different phases of a project

- Very early to plan hardware expenditures
- A few months before live start to verify assumptions
  - Determine the overall performance requirements
- During production stages to ensure operations and verify/adjust estimations made earlier. “Trigger events” include:
  - Upgrade database, operating system, SAP application
  - Reconfigure system landscape
  - Change business process
  - Rollouts: more users or other load

Possible Definitions for Different Types of Sizing

Hardware Budget Sizing

Smaller companies

- Very simple algorithms
- Assumptions, likelihoods
- Level setting of project
- Risk identification

Advanced Sizing

Medium to large companies

- Throughput estimates
- Questionnaires, formulas
- Usage of standard tools
- Focus on core business processes

Expert Sizing

Large or complex projects

- Additional guidelines
- Custom calculations
- Analysis of custom coding
- Custom sizing guidelines

Initial Sizings

Re-Sizing

All projects

- SAP system monitors
- Goal: Extend an existing system by load
  - E.g. by volume
    100 additional users who'll do the same as the current productive ones

Delta Sizing

All projects

- SAP system monitors
- Goal: Extend an existing system by functions
  - By different functions, e.g. you are live with CRM and want to add SCM

Upgrade Sizing

All projects

- SAP system monitors
- SAP Notes
- Goal: Upgrade SAP software

Production Sizings – whenever there is a change in throughput, sizing must be done

Some Factors That Influence Sizing

Impacts on sizing

HW Platform	SAP Software	System Settings	Customizing
■ Processor technology ■ Disk technology ■ Network technology ■ System infrastructure	■ Release ■ OLTP or OLAP ■ Industry solutions	■ Parameterization ■ Interfaces ■ Security settings ■ Unicode ■ A2A, B2B scenario	■ Set up of business processes ■ Organizational structures ■ Business process design

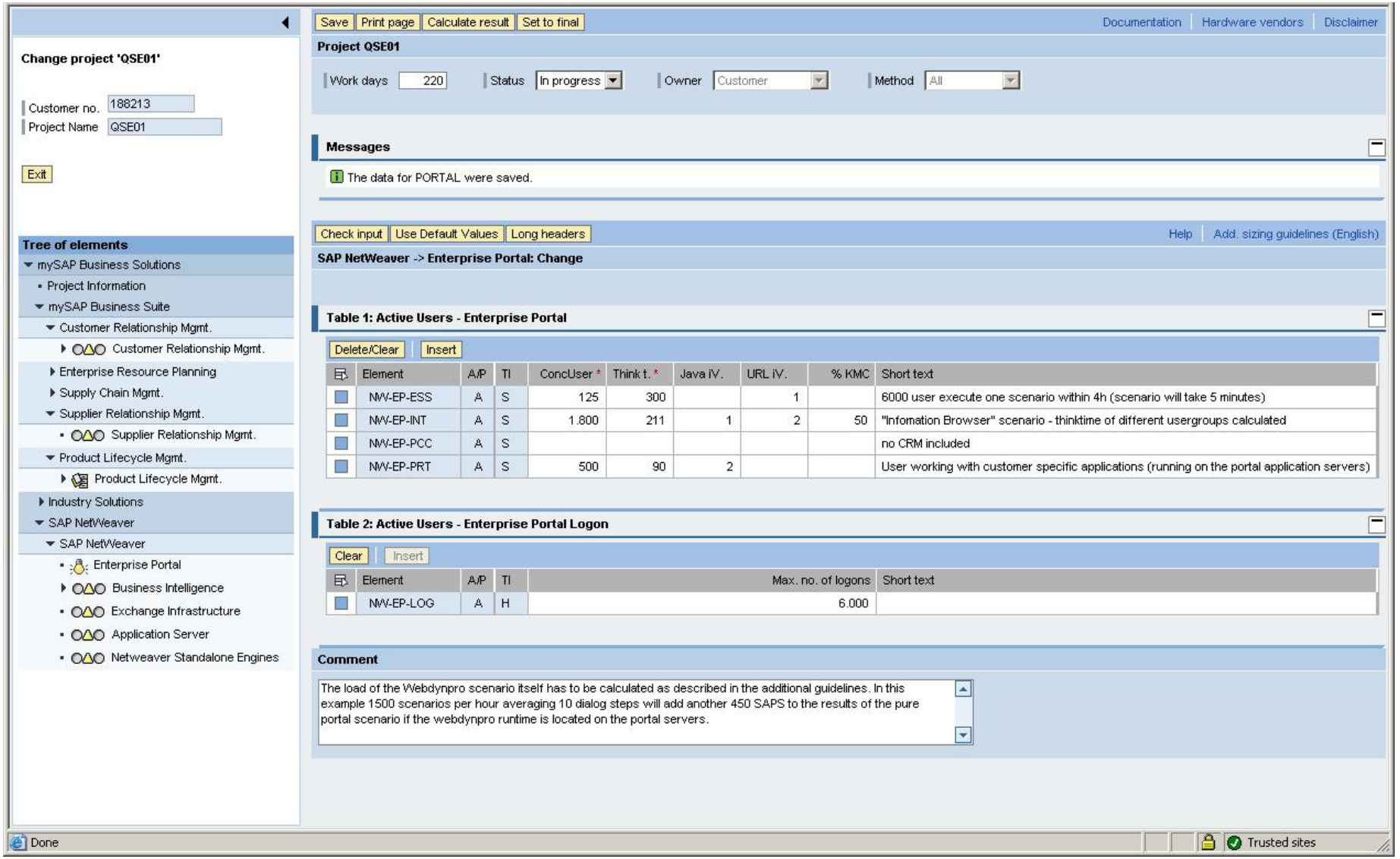
Customer profile

Custom Coding, 3rd Party	Data Volume	Disk Growth	User Behavior

■ Performance impact
■ Scalable
■ Business process design
	■ Time frame for high volume processing
	■ Background processing, parallel jobs
	■ Reporting
	■ Data distribution
		■ Avoiding data
		■ Archiving strategies
		■ Information Lifecycle Mgmt.
			■ Concurrency
			■ LAN/WAN
			■ Internet/intranet
			■ Activity, e.g.
			  ■ *-Search
			  ■ Efficient navigation

Responsibility of	Technology Partner	SAP	Customer

Using the Quick Sizer – Input Parameters



Managing Portal Infrastructure

Details in LCM161

Solution Manager – Tool to Manage Entire SAP Solution Landscape

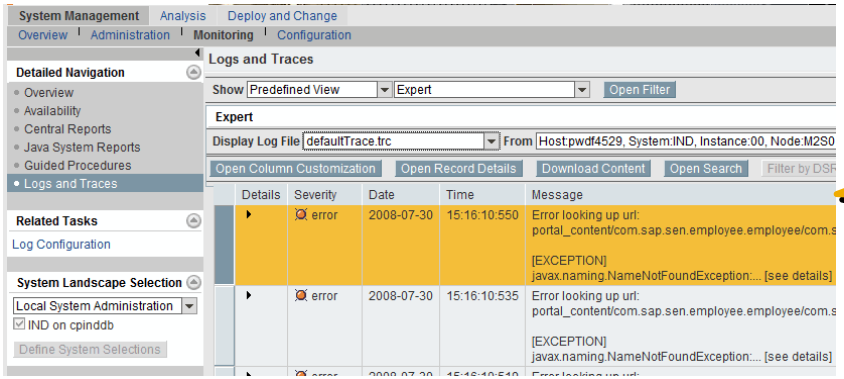
- The SAP Solution Manager is a platform that provides the integrated content, tools, and methodologies that you need to implement, support, operate and monitor your enterprise's solutions from SAP.
- With SAP Solution Manager, companies can minimize risk and increase the reliability of their IT solutions.
- SAP Solution Manager helps reduce TCO throughout the solution life cycle.
- SAP Solution Manager helps companies manage their core business processes and link business processes to the underlying IT infrastructure.
- Solution Manager Diagnostics
- Diagnostic capabilities for support of SAP NetWeaver platform (especially Java-components)
  - Root Cause Analyses
  - OS and DB Monitoring
  - Configuration Tracking
  - Component versions- and software-change reporting
  - HTTP-Analysis
  - …

Details in LCM201

Details in LCM221

Managing Portal Infrastructure

Details in LCM273

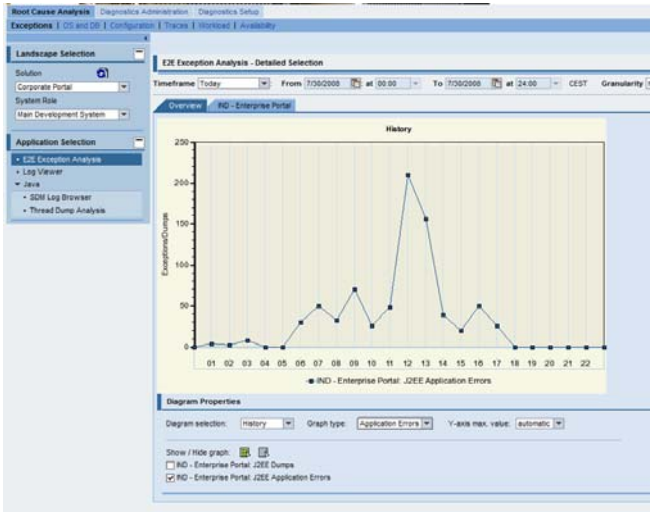


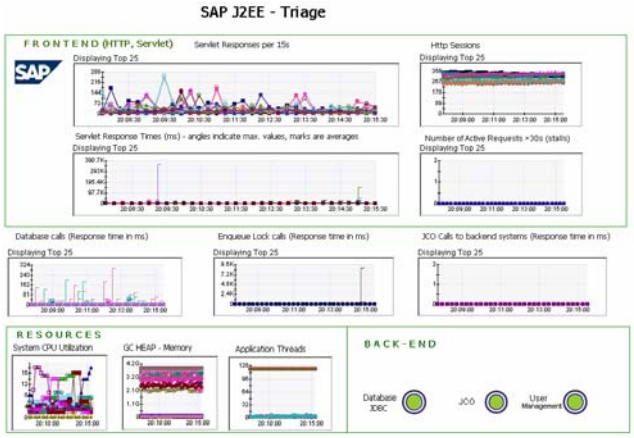
SAP NetWeaver Administrator

- Viewing logs and traces
- Viewing configuration

SAP Solution Manager Diagnostics

- Root cause analysis
- End to end exceptions
- Viewing recent changes





CA Wily Introscope

- Long running DB queries
- Memory issues
- Backend system connections

Transport Management for Portal Content

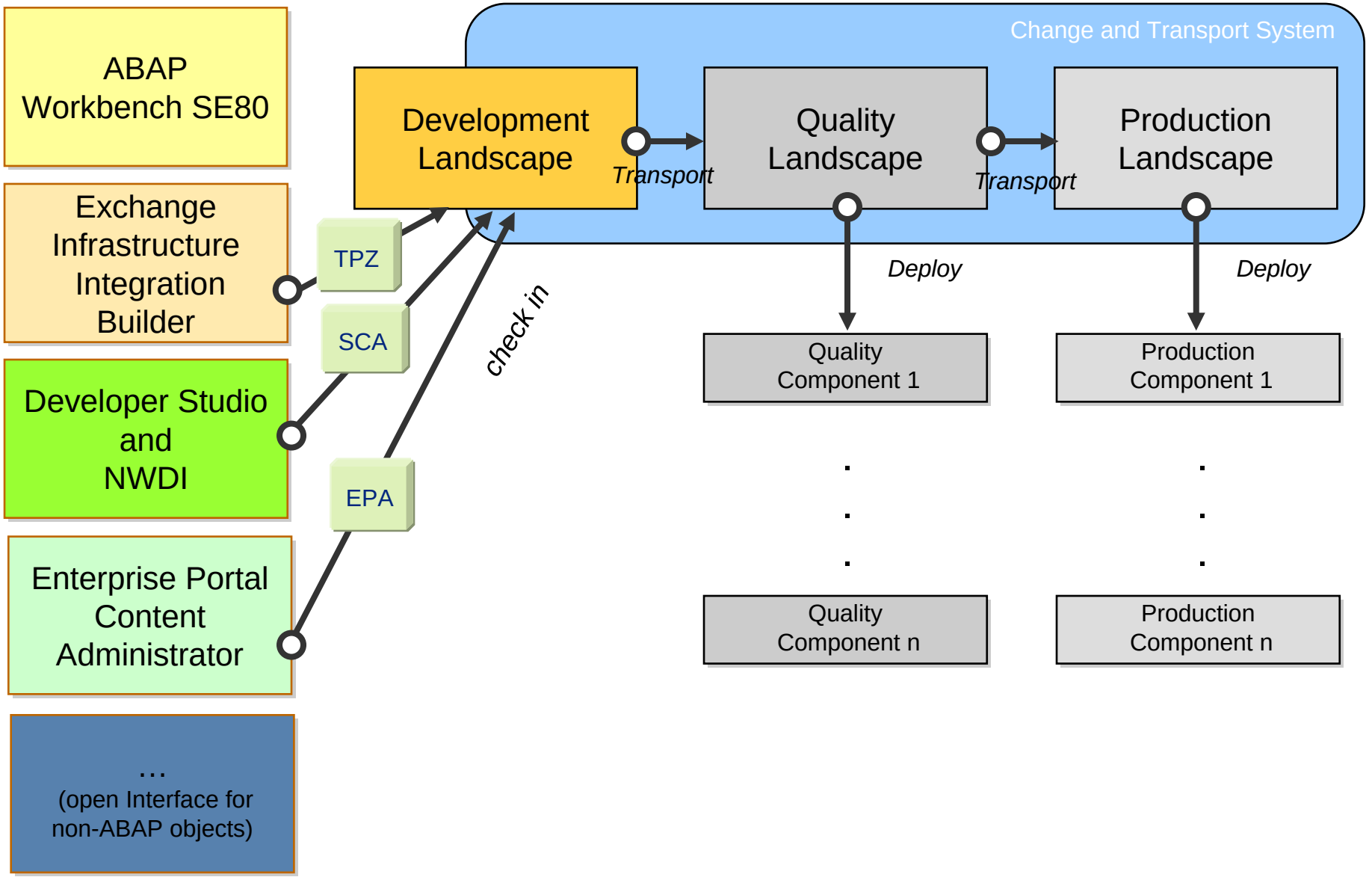
Details in LCM263

Three methods offered by SAP

- Change and Transport System (CTS) – for ABAP *and* Java content; CTS+ (enhancements based on SAP NetWeaver 7.0 SPS 13)
  - provides transport logistics for portal content: par, ear, sca and sda-files can be transported and deployed
  - can easily be used from within existing portal landscapes
  - CTS+ is THE transport Tool at SAP for both worlds, ABAP and Java
- Export/Import Mechanism – for portal content (epa or XML-file)
  - Transport package contains coding or portal content only
- SAP NetWeaver Development Infrastructure (NWDI) – for Java content

Through use of the tools and manual process, implement a coherent transport management strategy

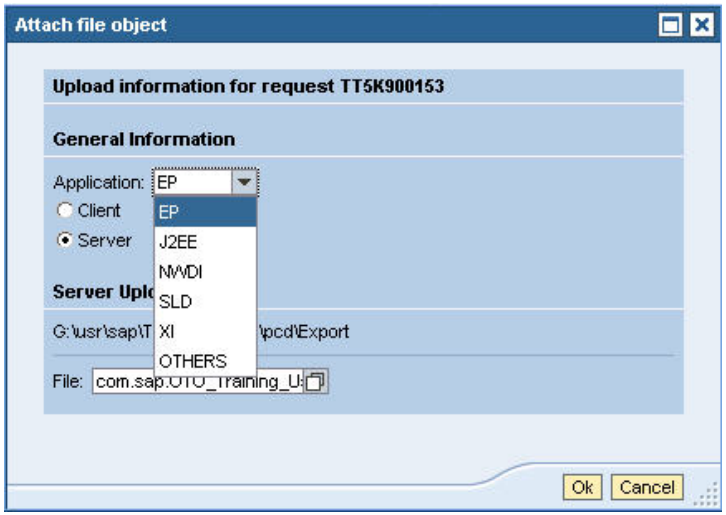
One Transport Order



Supported Solutions and Deployment Options

Transport of:

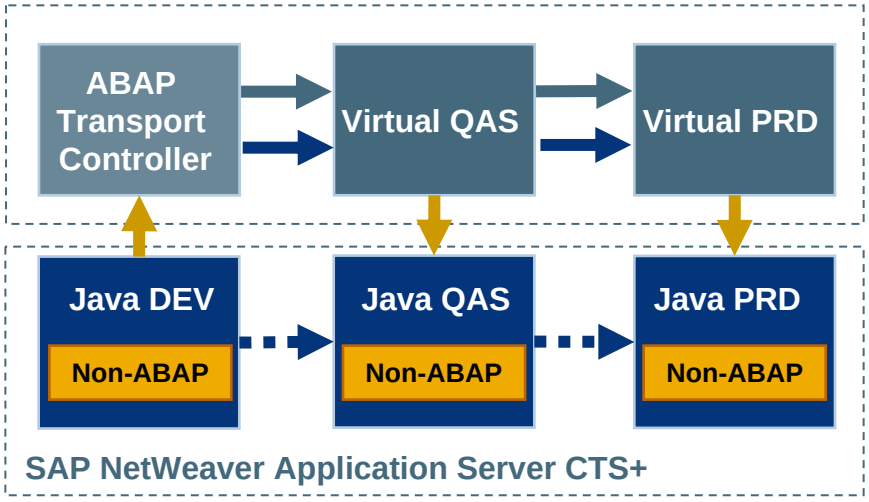
- **Java-based and J2EE-based objects**
  - Software Component Archives (SCAs)
  - Software Deployment Archives (SDAs)
  - Enterprise Application Archives (EARs)
- **Portal-based objects**
  - Enterprise Portal Archives (EPAs)
  - Portal Application Archives (PARs)
  - Knowledge Management objects (KM Content and KM Configurations) **(SPS14)**
- **PI/XI-based objects**
  - Integration Builder Objects (TPZs)
- **SLD Content (SPS13)**
- **any Files (.doc, .xls, .xml, …)**



Deployment Options:

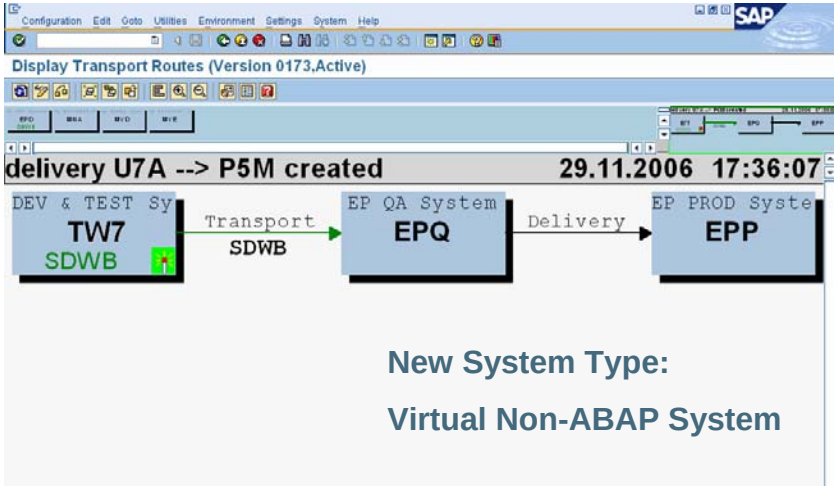
- SDM
- XI
- SLD
- FS

Transporting Non-ABAP Changes



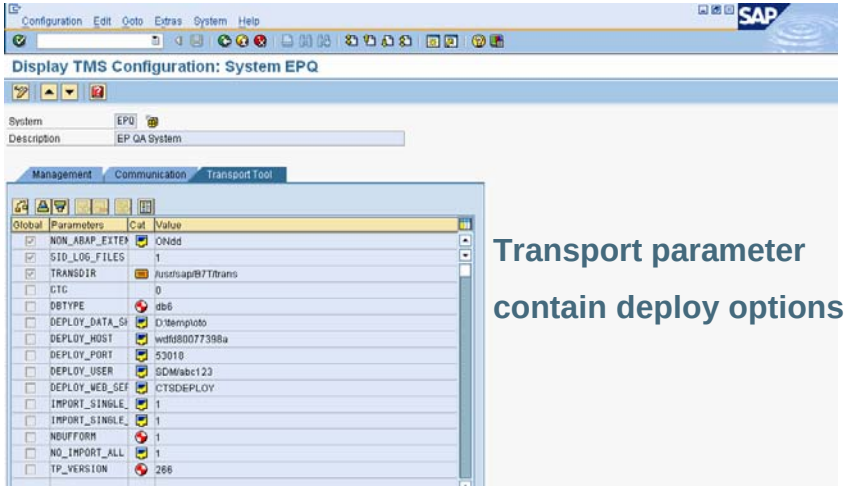
Legend

- logical transport route of non-ABAP objects
- physical transport route of non-ABAP objects
- check-in/check-out of non-ABAP objects
- transport route of ABAP objects



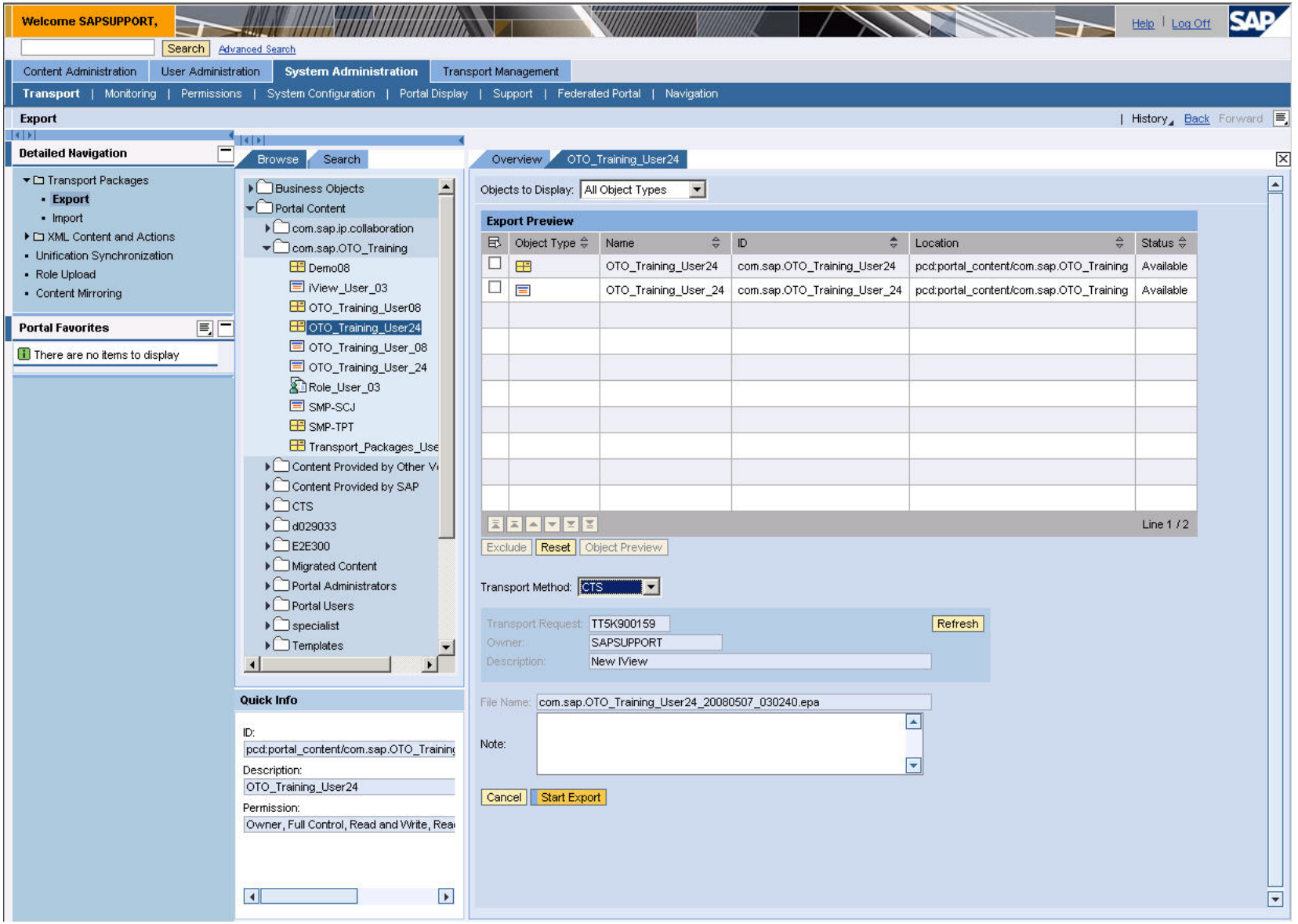
New System Type:

Virtual Non-ABAP System



Transport parameter contain deploy options

Export Java Archive to CTS (Close Coupling)

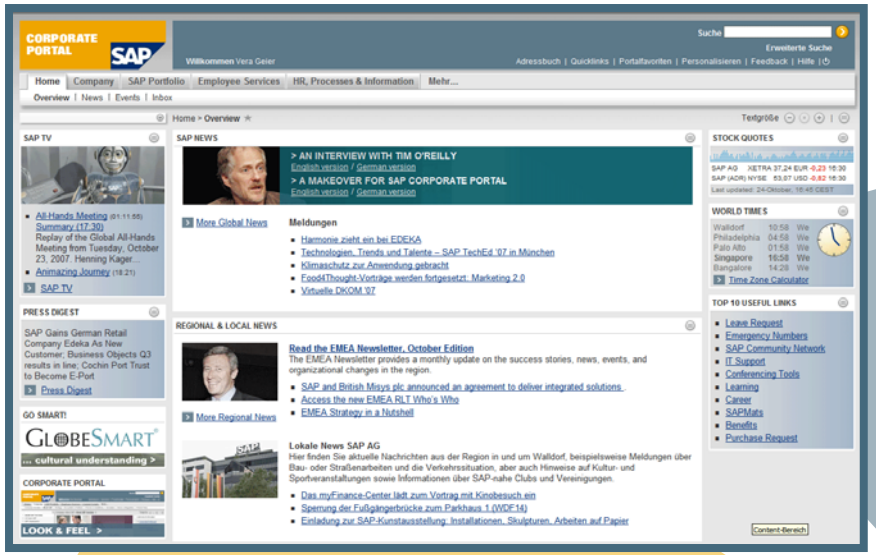


Agenda

1. Overview
   - 1.1. Portal Implementation Scenarios
   - 1.2. Focus Area Corporate Portals
2. User Productivity Infrastructure
   - 2.1. Portal Deployment Options
   - 2.2. Portal Scaling
3. Building the Portal Infrastructure
   - 3.1. Security Aspects, HA, Scheduled Downtimes
   - 3.2. Sizing, Monitoring, Transporting
   - **3.3. Figures from SAP Corporate Portal**
4. Summary
   - 4.1. Summary
   - 4.2. Further Information, Notes, Blogs

SAP Corporate Portal Key Facts

Details in UP110

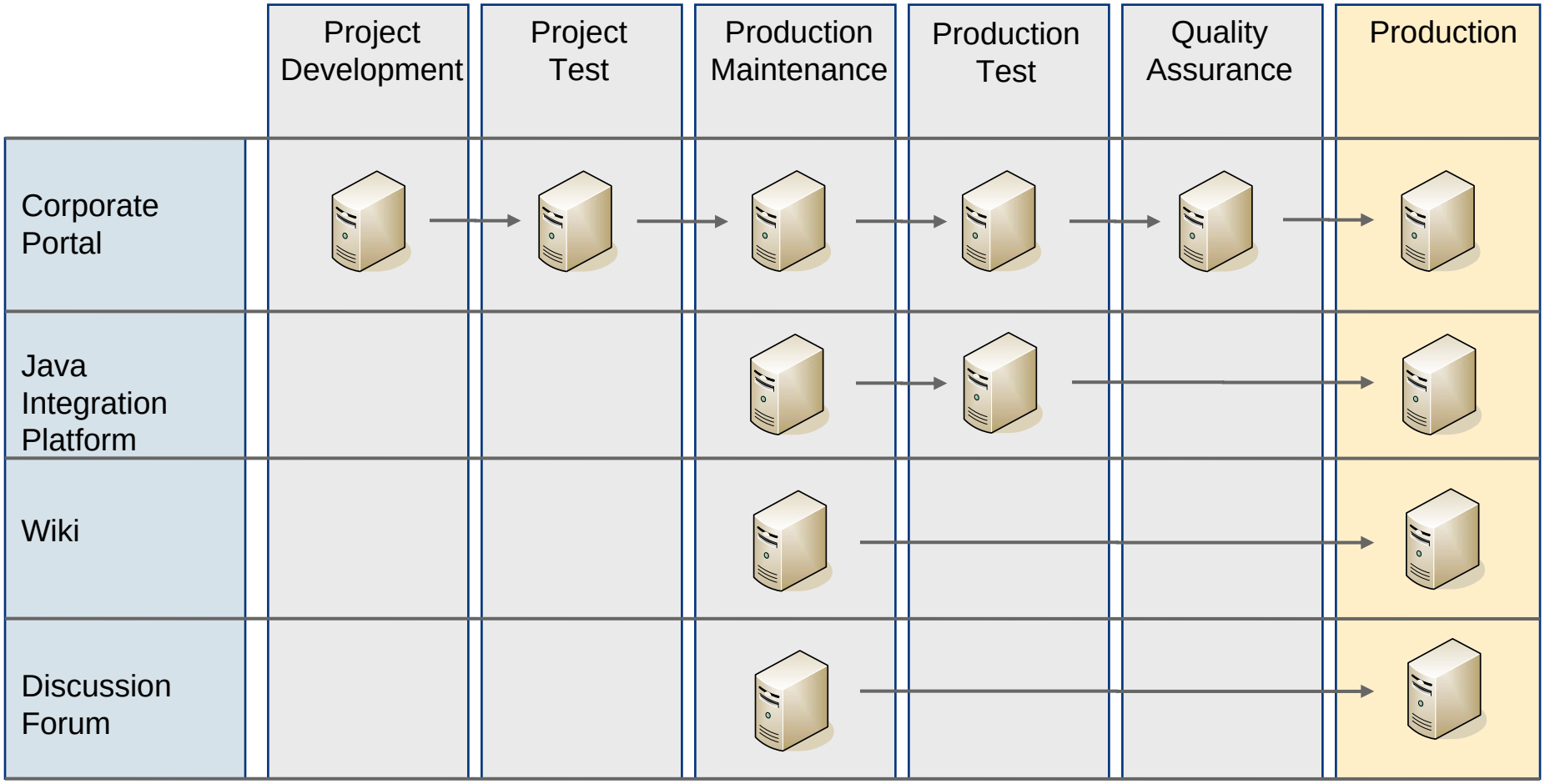


- 60,000 end-users
- Available in 70 countries
- 500,000 documents in managed content, 1,000,000 documents in collaboration rooms
- 35,000 managed web pages
- Penetration rate: 99.6 % of potential users

- 25+ Backend systems integrated:
  - SAP ERP (HR/FI)
  - Business Suite (CRM/RPM)
  - NetWeaver BI/XI
  - Legacy/3rd Party
- Process Integration
  - Sales/Marketing
  - Manager & Employee Self Services
  - Executive/Management Reporting
- Content Publishing environment:
  - Document upload (KM)
  - Online web page editing (Custom online web editing tool – WCMS)
- 80+ Workflows
- Community Tools:
  - Virtual workspaces for Teams & Projects
  - Discussion forums
  - Wiki
  - Podcasts

… another evidence that SAP runs SAP

Corporate Portal Solution Landscape



6 Tier Design determined to be best practice allowing:

- Rock solid release cycles
- Flexibility on continuous improvements
- Quality assurance

SAP Corporate Portal - Transport Details

- Transports are categorized by analyzing their type and impact to the system
- Transports have different set of testing criteria based on category
- Transports have different release schedule based on category

Transport Types:

Category	What is it?	Release Schedule	Testing Required		
			Business	Regression	Load
1	New applications	Scheduled dates 6 x per year	✓	✓	✓
2	Bug fixes / Minor application updates Any transport that requires restart	Weekly ✦	✓	✓	
3	Application maintenance	Weekly ✦	✓	✓	
4	Content only	Weekly	✓		

✦ Restrictions exist based on critical business support. (e.g. Quarter End Close)

Agenda

1. Overview
   - 1.1. Portal Implementation Scenarios
   - 1.2. Focus Area Corporate Portals
2. User Productivity Infrastructure
   - 2.1. Portal Deployment Options
   - 2.2. Portal Scaling
3. Building the Portal Infrastructure
   - 3.1. Security Aspects, HA, Scheduled Downtimes
   - 3.2. Sizing, Monitoring, Transporting
   - 3.3. Figures from SAP Corporate Portal
4. **Summary**
   - 4.1. Summary
   - 4.2. Further Information, Notes, Blogs

Summary

- Uniqueness – Every portal project deals with totally customer-specific scenarios and requirements.
- SAP Support – SAP provides various capabilities, tools and services to support your specific business scenarios.
- Flexibility – You can use different building blocks to enhanced your infrastructure smoothly step-by-step.
- Strategy – A well defined platform and portal strategy is the basis for all project activities.
- Project planning – A proper preparation phases is the key to a successful implementation.
- Scope – Portal projects typically cover real cross-enterprise topics that might span departments and functional roles.
- Alignment – You need to talk to various persons to align all the different topics and requirements.

Summary

- Content – Content is what matters to the users – not technology.
- User – Your users have special preferences in terms of intuitive navigation, usability and content they expect to find in the portal.
- Value – A portal project can only be successful if it delivers significant value to the end users. That is the reason why a portal is much more than just a trendy GUI.
- Subsequent projects – A portal often acts as originator for a number of other use cases. SAP NetWeaver projects trigger subsequent implementation projects.
- Knowledge – A SAP NetWeaver project requires a wide range of skills and knowledge within and outside of the project team.
- Business Case – A solid business case is vital to any SAP NetWeaver project!

Further Information

SAP Public Web:

SAP Developer Network (SDN): http://www.sdn.sap.com/

Business Process Expert (BPX) Community: http://www.bpx.sap.com/

General Portal Information: https://www.sdn.sap.com/irj/sdn/netweaver

Portal on SDN: http://www.sdn.sap.com/irj/sdn/nw-portalandcollaboration

SAP Help Portal: http://help.sap.com/

Search for SAP Notes: http://service.sap.com/notes

Product Availability Matrix http://service.sap.com/pam

SP Stack Schedule http://service.sap.com/sp-stacks

CTS+: https://www.sdn.sap.com/irj/sdn/cts

http://www.sap.com/platform/netweaver/itpractices/userproductivity.epx

Related SAP Education and Certification Opportunities

http://www.sap.com/education/

Further Information

Technical Documentation:

- Master Guide: http://service.sap.com/~sapidb/011000358700005412792005E.pdf
- High Availability: http://service.sap.com/HA
- Security: http://service.sap.com/security
- Sizing: http://service.sap.com/sizing -> Sizing SAP NetWeaver Portal
- SLD Planning Guide: http://service.sap.com/SLD > Media Library
- Technical Infrastructure Guide: http://service.sap.com/~sapidb/011000358700005531212005E.pdf
- Portal Security Guide http://help.sap.com/saphelp_nw70/helpdata/en/5c/429f00a14aa54195b1c63ae1512d10/frameset.htm
- Technical Operations Manual for SAP NetWeaver Portal http://help.sap.com/saphelp_nw70/helpdata/en/c2/9826405f2c1a5de10000000a1550b0/frameset.htm
- Monitoring Setup Guide for NW 7.0 SP Stack 12 http://service.sap.com/~form/sapnet?_SHORTKEY=01100035870000659947&_OBJECT=011000358700000067022007E
- Portal Documentation http://help.sap.com/saphelp_nw70/helpdata/en/a9/76bd3b57743b09e10000000a11402f/frameset.htm

Further Information

Technical Documentation:

- Minimizing Effects of Planned Downtime
  https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/901c5703-f197-2910-e290-a2851d1bf3bb
- How To guide "Optimizing Network Traffic in EP 6.0“ available in
  http://service.sap.com/nw-howtoguides
- SAP NW Support Platform
  http://help.sap.com/saphelp_nw70/helpdata/en/43/0f55d0a1c52ba8e10000000a1553f6/frameset.htm
- KM Finetuning: http://service.sap.com/~sapidb/011000358700004976172005E
- Portal Finetuning: http://service.sap.com/~sapidb/011000358700001480992005E.PDF
- KMC in EFP
  https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/60fd3fc2-e0a4-2910-80bc-a45987574922
- SAP Best Practices for Portals V1.70
  http://help.sap.com/content/bestpractices/crossindustry/bestp_based_netweaver.htm
- SAP Web Dispatcher and SSL
  http://help.sap.com/saphelp_nw70/helpdata/en/d8/a922d7f45f11d5996e00508b5d5211/frameset.htm
- Release Notes
  http://help.sap.com/saphelp_nw70/helpdata/en/57/a21f407b402402e10000000a1550b0/frameset.htm
- ASAP Methodology https://service.sap.com/roadmaps
- Restriction notes: 853509, 916545

SAP Notes and SDN Blogs

Technical Documentation:

Notes

- 916545 - Central Note for External-Facing Portal (NW04s)
- 877188 - Central Note for External-Facing Portal (NW04)
- 837898 - CM >= NW04 SPS12: How to configure anonymous CM access
- 913367 - Anonymous users unable to open specific pages
- 870247 - Using named anonymous users
- 933452 - External-Facing Portal and Search Engine Indexing
- 893855 - EFP -hotfix for suppport of Quick links for anonymous user

Blogs

- Nuts and Bolts of the External Facing Portal https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2484
- EFP: Navigation and Framework Tag Libraries https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2453
- EFP: Layout Tag Library https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2441
- EFP: Navigation Caching https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2449
- EFP: Short URLs https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2452
- EFP: Quick Links https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/2447
- Short(ening) Portal URLs https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/1871
- Changes in the Navigation Cache https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/5679
- Multilingual External Facing Portal with Different Contents https://www.sdn.sap.com/irj/sdn/weblogs?blog=/pub/wlg/5894

Thank you!

Fuel your Career with SAP Certification

What the industry is saying

- **"Teams with certified architects and developers deliver projects on specification, on time, and on budget more often than other teams."**
  2008 IDC Certification Analysis

- **"82% of hiring managers use certification as a hiring criteria."**
  2008 SAP Client Survey

- **"SAP Certified Application Professional status is proof of quality, and that's what matters most to customers."***
  Conny Dahlgren, SAP Certified Professional

Take advantage of the enhanced, expanded and multi tier certifications from SAP today!

Feedback

Please complete your session evaluation.

Be courteous — deposit your trash,
and do not take the handouts for the following session.

Thank You !