System Landscape Recommendations for SAP NetWeaver Gateway

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May 2012
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Agenda

Introduction
- Methodology & Scope of Landscape Recommendations

Basic Landscape Setups
- Recommendations for SAP NetWeaver Gateway
Introduction

Methodology & Scope of Landscape Recommendations
SAP Business Suite Reference Landscape Baseline For Governance Measures

Architectural Guidelines

Improve Product Capabilities

Manage Exceptions

Landscape Standards

Ease Landscape Management

SAP’s internal Development & Test Landscape

Ease Landscape Planning

SAP System Landscape Governance Board:
Central unit within SAP to trigger and monitor concrete landscape related improvements across SAP products

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Technical Deployment of SAP NetWeaver
Foundation Capabilities

Options for implementing the technology foundation of SAP NetWeaver

• ABAP single stack system
• JAVA single stack system
• Dual stack system (not recommended any longer, where not technically required)

Examples:

Definition for Dual Stack:

SAP system containing Application Server ABAP and Application Server Java
A dual-stack system has the following characteristics:
• Common SID for all application servers and the database
• Common startup framework
• Common database (with different schemas for ABAP and Java)
Technical Deployment of SAP NetWeaver Integration Capabilities

Options for implementing integration capabilities of SAP NetWeaver

- Embedded deployment within an SAP Business Suite system
- Deployed as a local “sidecar” system to an SAP Business Suite system
- Deployed as a central hub system shared by different SAP Business Suite systems

Examples:

SAP NetWeaver Portal technically deployed within the SAP ERP system*

*SAP NetWeaver Portal deployed as a local sidecar to an SAP ERP system

*SAP NetWeaver Portal deployed as a central hub shared by an SAP ERP and an SAP SRM system

* only to support existing setups
Ease Landscape Setups By Stronger Guidance
Used Methodology

Clear recommendations by categorization of deployment options

**Possible Exception**
- Only useful for specific use cases
- Supported by SAP, but limitations might occur

**Reasonable Alternative**
- Useful choice for certain use cases or customer scenarios
- Supported and confirmed by SAP’s strategy

**General Recommendation**
- Best choice for majority of typical landscape use cases
- Recommended by SAP’s strategy
- Accepted by a wide base of customers

**Goal**
- Outlining main important aspects
- Optimal trade-off between flexibility and simplicity
- Applied to main building blocks of SAP products

**Consider**
- Alternative deployment options might have different benefits
- Customer individual assessment not be compensated
Scope of Landscape Recommendations – Overview SAP NetWeaver Gateway 2.0

Considered main usage scenarios
- Enables UI-centric applications to consume SAP Business Suite data in an easy and standards-based way
- Enables online scenarios on mobile devices
- Enables a new “light-weight” consumption across different kind of application backend systems based on OData

Considered main building blocks
- SAP NetWeaver Gateway containing
  - Gateway Server Add-On to provide complete gateway infrastructure
  - Optional Gateway Content Add-On for centrally produced and provided content
  - Optional Gateway Enablement Add-On to provide Gateway infrastructure services that are required by local application content
- Local Application Content
  - Optional content Add-On to consume applications via Gateway e.g. Mobile Add-On for SAP Business Suite, HCM Renewal
  - Requires locally deployed Gateway Enablement Add-On
Legend

- **mandatory component**
- **optional component**

Overview main Installation
Add-Ons for SAP NW Gateway

**Gateway Server**
- IW_FND
- GW_CORE

**Central Gateway Content**
- IW_CNT
- IW_CBS

**Gateway Enablement**
- IW_BEP
Basic Landscape Setups

Recommendations for SAP NetWeaver Gateway –
Dependent of aimed main use cases
Landscape Use Case I: OData Enablement of SAP Applications

Typical Characteristics of this Landscape Setup

Main use cases

- online mobile scenarios as provided by SAP Business Suite Add-Ons for mobile applications
- support HTML5 based UI access to SAP Business Suite systems

Main required SAP NetWeaver Gateway components

- Gateway Server and Gateway Enablement as SAP NetWeaver AS ABAP Add-Ons
- SAP NetWeaver Gateway used
  - to enable OData based access to SAP Business Suite applications
  - to reduce development costs by using local business logic and dictionary objects
- Local OData content delivered for dedicated SAP applications
- User/access management for mobile user could be managed via Sybase Unwired Platform

Example: OData enablement of SAP ERP system
Deployment of SAP NetWeaver Gateway
Embedded deployment within application system

General Recommendation

- SAP NetWeaver Gateway Server & Enablement Add-Ons deployed in each application backend system that shall be enabled for light-weight consumption
- Avoid deployment of central SAP NetWeaver Gateway Content in application system

Benefits

- Direct local access to metadata and business data
- Simplified deployment when using mobile applications provided by SAP
- No additional SAP NetWeaver Gateway system

Considerations

- Lifecycle of SAP NetWeaver Gateway content determined by update frequency of backend
- Backend system must be based on SAP NetWeaver 7.0 SP25, 7.01 SP10, 7.02 or higher
- Point-to-point integration of consuming application with application system
- No usage of central SAP NetWeaver Gateway content, only local application-specific content used
Deployment of SAP NetWeaver Gateway
Central single hub deployment

**Reasonable Alternative**
- Gateway Server & optional central Gateway content deployed as central hub
- Gateway Server provides OData based or HTML5 based access for multiple application backend systems

**Benefits**
- Central management of connectivity
- Gateway Server deployed only once
- SAP NetWeaver Gateway system could be implemented in DMZ to serve specific security needs
- Software update frequency of SAP NetWeaver Gateway Server decoupled from application backend system

**Considerations**
- Additional SAP NetWeaver Gateway system
- Reverse proxy mandatorily req. for HTML5 based scenarios
- Gateway enabl. component additionally to be installed in each application system that requires local OData content
- Limited version interoperability until SAP Netweaver Gateway 2.0 SP4: Gateway Server version must be >= version of Gateway enabl. (planned to be removed with SP5)
Deployment of SAP NetWeaver Gateway
Sidecar deployment

Possible Exception
- SAP NetWeaver Gateway deployed as redundant separate systems for local usage only
- Application specific content is deployed within application backend system

Benefits
- Update of SAP NetWeaver Gateway system does not impact application backend system
- Support of application systems based on a lower version than SAP NetWeaver 7.0 SP25 or 7.01 SP10

Considerations
- Landscape complexity increases significantly with increasing number of application systems
- Highest administration effort
- Reverse proxy mandatorily req. for HTML5 based scenarios

Example

*SAP NetWeaver Gateway
**Gateway Server
Gateway Enabl.
Consumer specific Content
AS ABAP

*SAP NetWeaver Gateway
**Gateway Server
Gateway Enabl.

*SAP NetWeaver Gateway
**Gateway Server
Gateway Enabl.

*SAP R/3 Enterprise
R/3

*SAP ERP
**ERP content*
Gateway Enab.
**ECC Server

*SAP SRM
**SRM content*
Gateway Enab.
**SRM Server

* e.g. Mobile Add-On, Consumer Grade UI
Change Deployment of SAP NetWeaver Gateway
Later move to embedded deployment

**Scale-in Option**
- Temporarily more complex landscape at the beginning of the product lifecycle of SAP NetWeaver Gateway to reduce impact on SAP Business Suite application system
- Move at a later state to the embedded deployment setup

**Benefits**
- Customer can start with separate SAP NetWeaver Gateway system to reduce impact on SAP Business Suite application system
- Reduce landscape complexity after piloting phase

**Considerations**
- Gateway Server component needs to be moved to the SAP Business Suite application system (additional Add-On deployment)
- Configuration data of all involved components need to be changed manually

**Example**

![Diagram of SAP NetWeaver Gateway deployment options](image-url)

- **SAP R/3 Enterprise**
  - SAP NetWeaver Gateway
  - SAP ERP
  - SAP SRM

- **Gateway Systems**
  - Customer specific prepackaged
  - Gateway systems locally linked to single backend system

- **Benefits**
  - Reduce landscape complexity after piloting phase

- **Considerations**
  - Gateway Server component needs to be moved to the SAP Business Suite application system (additional Add-On deployment)
  - Configuration data of all involved components need to be changed manually
Change Deployment of SAP NetWeaver Gateway
Central hub deployment combined with local deployment

Scale-out Option

- Gateway Server & central Gateway content deployed as central hub
- Gateway Server & Gateway enablement for individual SAP Business Suite systems
- Central hub enables central consumption across different applications
- Local Gateway used for individual OData enablement

Benefits

- Customer can start with simple landscape setup and scale out later
- Central management of routing & connectivity
- Central and local Gateway content can be separated due to aimed use cases
- Redundant deployment of metadata could be avoided

Considerations

- Gateway Server component deployed multiple times (local and central usage combined)
- Separation of local and central Gateway usage need to be configured
Landscape Use Case II: Enable Central Consumption For Multiple Backends

**Typical Characteristics of this Landscape Setup**

**Main use cases**
- enable a central “light-weight” consumption across different kind of application backend systems

**Main required SAP NetWeaver Gateway building blocks**
- Gateway Server based on SAP NetWeaver AS ABAP [mandatory]
- Gateway Enablement, Central Gateway Content [optional]
- SAP NetWeaver Gateway used as a development framework to enable people centric applications for consuming business data out of different kind of application systems based on OData standard
- Consuming business data without disruptive changes in the application system
- Central SAP NetWeaver Gateway hub can be additionally used for OData enablement of SAP Business Suite systems (might require deployment of Gateway Enablement Add-On in SAP Business Suite system for local application content)

Example:
dedicated SAP NetWeaver Gateway hub with central content
Deployment of SAP NetWeaver Gateway
Central single hub deployment

General Recommendation
- Gateway Server deployed as central hub
- Additional central or consumer specific content could be exposed by the SAP NetWeaver Gateway Hub as well

Benefits
- Decoupled lifecycle of consumer apps from applications
- Central management of routing & connectivity
- Gateway Server deployed only once
- SAP NetWeaver Gateway system could be implemented in DMZ to serve specific security needs
- Lifecycle of SAP NetWeaver Gateway system decoupled from lifecycle of application system

Considerations
- Central SAP NetWeaver Gateway content available, but limited scope today
- Redundant deployment of metadata or Data Dictionary structures
- Optional deployment of Gateway enablement in application system to simplify local OData content development

Example

Central routing and connectivity of Duet/Alloy scenarios against multiple application systems

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