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## **Upgrade von Java Anwendungen von OracleAS 10g auf FMW 11g**

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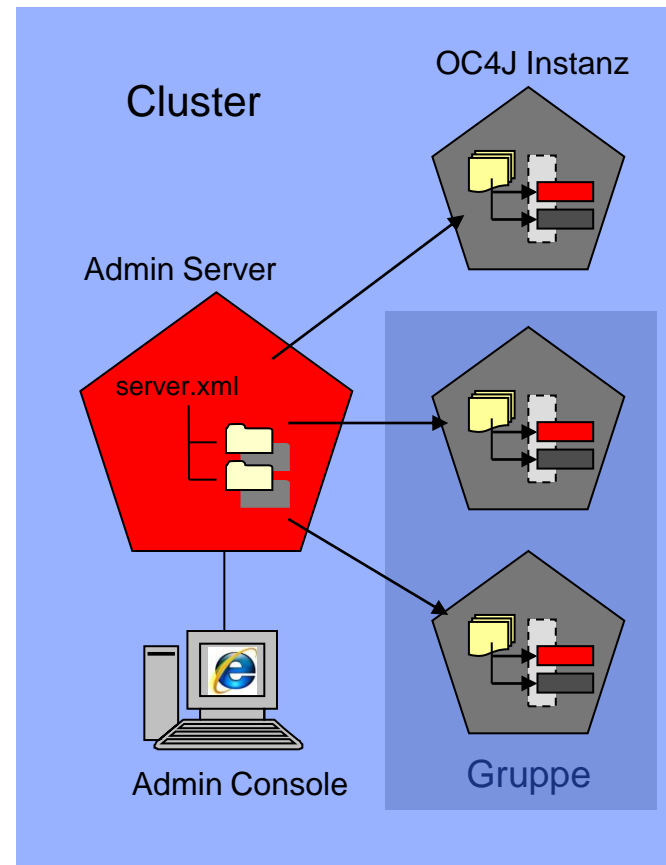
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# Agenda

- Upgrade serverseitiger Java Anwendungen von Oracle AS 10.1.3.1+ auf Oracle WebLogic 10.3.5
  - **Administrationssicht: OC4J vs. WebLogic**
  - Vorgehensweise beim Upgrade einer Anwendung
  - Toolsupport für Upgrade
  - WebLogic Deploymentarchitektur
    - Konfiguration (DataSources, JMS, Shared Libraries)
    - Paketierung und Deploymentpläne
    - Toolunterstützung für Deployment
    - IDE Sicht: Oracle Enterprise Pack for Eclipse, JDeveloper

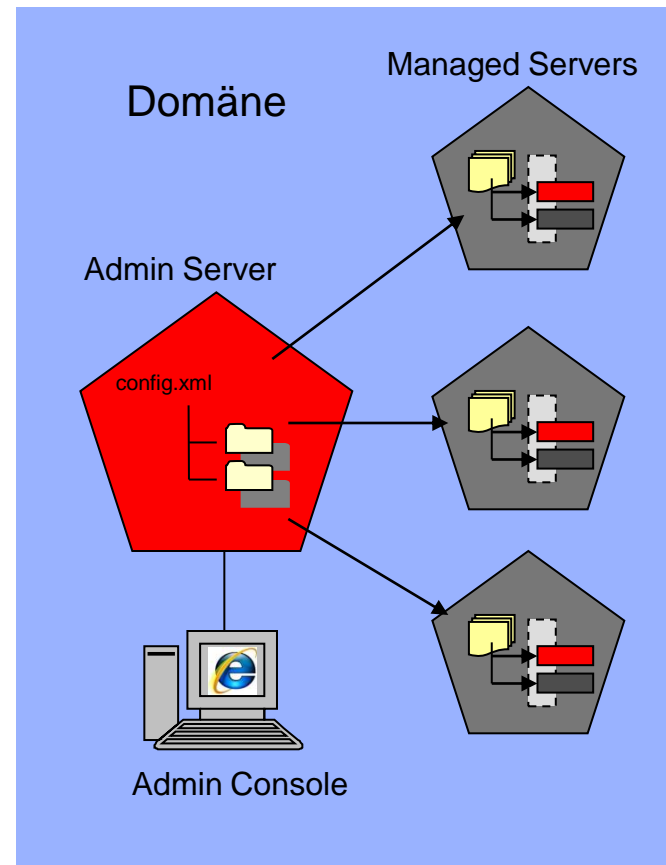
# OracleAS 10.1.3 Topologie

- **Cluster:** Gruppe von OracleAS Installationen, die sich über den OPMN erkennen, für Lastverteilung und Ausfallsicherheit
- **Instanz:** Ein oder mehrere OC4J JVMs (Container)
- **Administrations-Server:** OC4J Instanz in der der Enterprise Manager gestartet ist. Konfigurations- und Überwachungsstelle eines Clusters, Singleton
- **Gruppe:** Mehrere OC4J Instanzen eines Clusters, über die gemeinsame Konfigurations-Aktivitäten durchgeführt werden können
- **OPMN:** Prozess (je Oracle\_Home) zum Starten, Stoppen und Überwachen der Komponenten eines Clusters



# WebLogic Server Topologie

- **Domäne:** Gruppe von Managed Servern die sich untereinander kennen
- **Managed Server:** WLS Instanz (JVM)
- **Administrations-Server:** WLS Server, in der die Konsole deploy ist. Zentrale Konfigurations- und Überwachungsstelle einer Domäne, Singleton
- **Cluster:** Gruppe von Managed Servern innerhalb einer Domäne für Lastverteilung und Ausfallsicherheit
- **Node Manager:** Prozess zum Starten, Stoppen und Überwachen der Managed Server eines Rechners



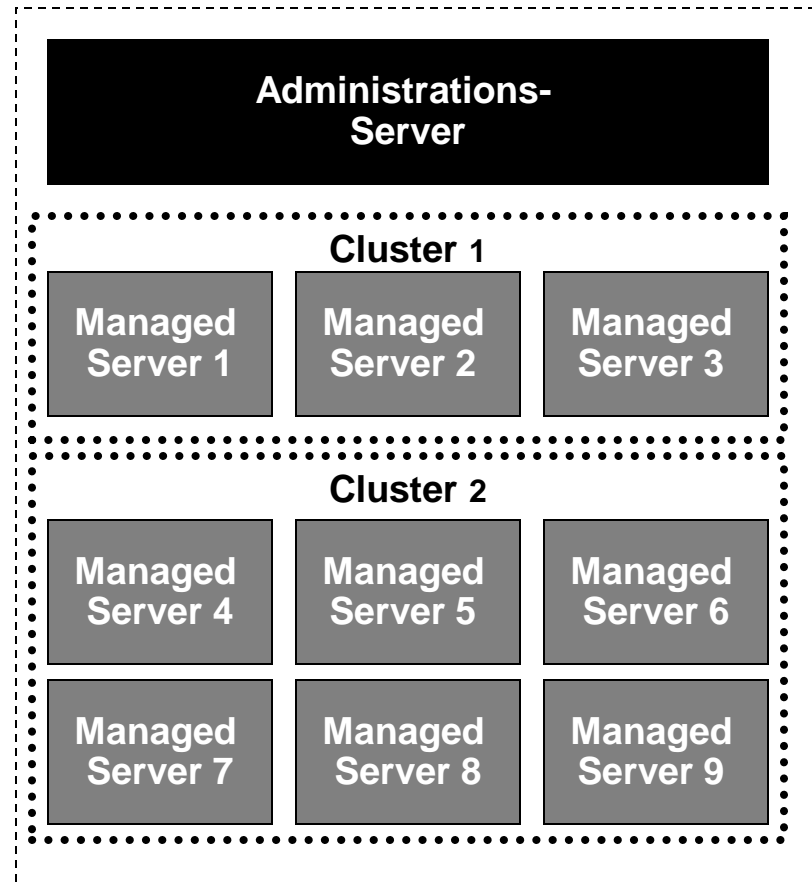
# Neu in FMW 11g

- Trennung von Binaries und Konfigurationen
- OC4J → WLS
  - Farm / Cluster → Domäne
- Node Manager + OPMN für Prozess-Monitoring
  - OPMN für C-Komponenten
  - OPMN → Node Manager für WLS Managed Server (JVMs)
- Data-Sources für RAC
  - JDBC Failover/Loadbalancing → Multi Data Source
  - Multi Data Source
    - kombiniert mehrere „normale“ Data Sources
    - Für Load Balancing, Fehler Erkennung, XA Support
- Netzwerkprotokoll-Handling:
  - Keine AJP Unterstützung in WLS
  - OC4J: ein Port – ein Protokoll → WLS: ein Port für alle Protokolle
  - OC4J: ORMI → WLS: t3

# WebLogic Cluster

- Gruppe von Managed Servern für Skalierbarkeit und Ausfallsicherheit
  - Skalierbarkeit: Parallelität
  - Ausfallsicherheit: Replikation und Redundanz
  - Administration: Konfiguration, Zugriffe und Deployment gegen ein Cluster
- Cluster sind Grundlage für zusätzliche Features wie
  - Whole Server Migration
  - Service Migration
  - JMS Cluster

## WebLogic Domäne





# Oracle WebLogic Administration

- Konfigurations-Änderungen und Deployments
  - Lock and Edit
  - Ziel kann die ganze Domäne, Cluster oder einzelne Managed Server sein
- Konsole
  - Im Admin Server
  - Zur Laufzeit nicht benötigt
  - Für Konfiguration, Deployment und Monitoring
- CLI - WLST
  - JPython basiertes Scripting Tool
  - Unterstützt alle administrativen Tasks

The image shows a composite of three screenshots related to Oracle WebLogic Administration:

- Top Left:** A WordPad window titled "createTimerEG.py - WordPad" containing a Python script. The script is a Jython script for creating and deploying a timer example. It imports modules like `weblogic.Deployer`, `com.bea.wli.nbconnector.time`, `com.bea.wli.management.config`, and `jarray`. It defines constants for the server name and domain, and creates a `timerExampleEG` object with a dictionary of properties.
- Top Right:** A screenshot of the Oracle WebLogic Administration Console in a Mozilla Firefox browser. The browser address bar shows `http://localhost:7001/console/console.portal?_nfpb=true&_pageLabel=Server`. The console displays the "Settings for AdminServer" page, with tabs for Configuration, Protocols, Logging, Debug, Monitoring, Control, Deployments, Services, Security, and Notes. The "Configuration" tab is active, showing fields for Name, Machine, Cluster, and Listen Address.
- Bottom:** A "Change Center" dialog box with the text: "Click the Lock & Edit button to modify, add or delete items in this domain." It features a blue "Lock & Edit" button and a grey "Release Configuration" button. Below it, another "Change Center" dialog box shows "View changes and restarts" and states "No pending changes exist. Click the Release Configuration button to allow others to edit the domain." It features a grey "Lock & Edit" button and a blue "Release Configuration" button.

# Fusion Middleware Administration

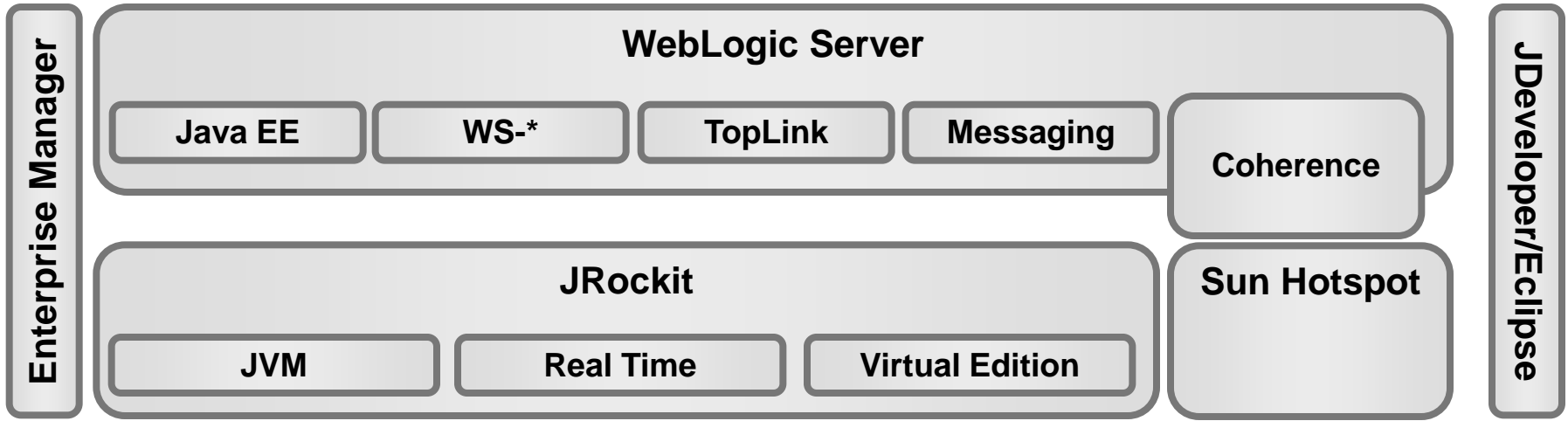
The screenshot displays the Oracle Enterprise Manager 11g Fusion Middleware Control interface. The main window shows the 'Farm\_soa\_domain' configuration. On the left, a tree view lists various components including 'Anwendungs-Deployments', 'SOA', 'WebLogic-Domain', and 'Web-Tier'. The central pane shows a 'Deployments' table with columns for Name, Status, and Ziel. A green pie chart indicates that 100% of the components are 'Hochgefahren' (Up). The right pane shows a 'Fusion Middleware' table with columns for Name, Status, Host, and CPU-Auslastung (%). A red pie chart indicates that 64% of the components are 'Hochgefahren' (Up) and 36% are 'Heruntergefahren' (Down). The CPU usage for the 'soa\_server1' is 3,04%.

Name	Status	Ziel
Anwendungs-Deployments		
Interne Anwendungen		
Ressourcenadapter		
composer (soa_server1)	↑	soa_server1
DefaultToDoTaskFlow (soa_server1)	↑	soa_server1
worklistapp (soa_server1)	↑	soa_server1
SOA		
soa-infra (soa_server1)	↑	soa_server1
SimpleComposite [2.0]	↑	soa_server1
SimpleComposite [3.0]	↑	soa_server1
SimpleComposite [4.0]	↑	soa_server1
SOAComposite1 [1.0]	↑	soa_server1

Name	Status	Host	CPU-Auslastung (%)
WebLogic-Domain			
soa_domain			
AdminServer	↑	stufmw1.de.oracle.c	
bam_Cluster			
bam_server1	↓		
bam_server2	↓		
soa_Cluster			
soa_server1	↑	stufmw1.de.oracle.c	3,04
soa_server2	↓		
Messaging Service für Benutzer			
usermessagingdriver-email (soa_server1)	↑	stufmw1.de.oracle.c	
usermessagingserver (soa_server1)	↑	stufmw1.de.oracle.c	
Metadaten-Repositorys			
mds-owsm		stufmw1.de.oracle.c	
mds-soa		stufmw1.de.oracle.c	
Web-Tier			
ohs1	↓	stufmw1.de.oracle.c	

- Administration und Monitoring der nicht-WLS Komponenten
  - OHS
  - BPEL, Mediator, ...
  - SOA Composites
- Monitoring der WLS Managed Server

# WLS Architektur

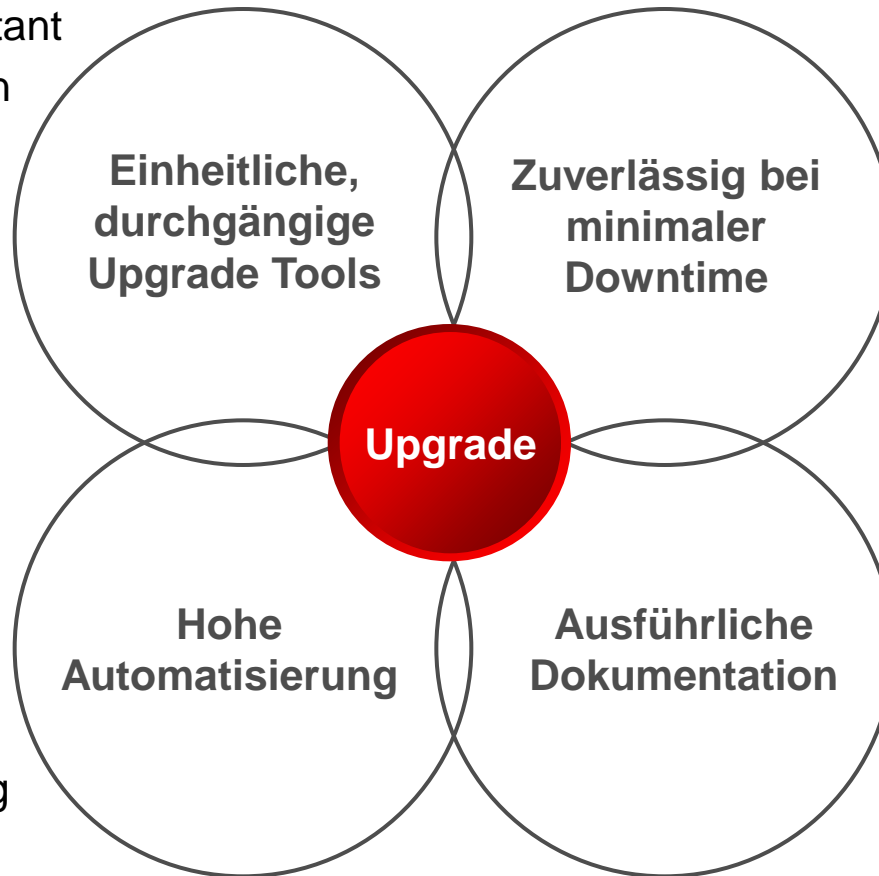


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# Oracle FMW Upgrade Überblick

- OFM Upgrade Assistant
- JDeveloper Migration Wizards
- WebLogic SmartUpgrade



- Geringe Anzahl manueller Schritte
- Automatische Post-Upgrade Überprüfung

- Out-of-place Upgrades
- Two-Phase Upgrade
- Wieder-aufsetzbar

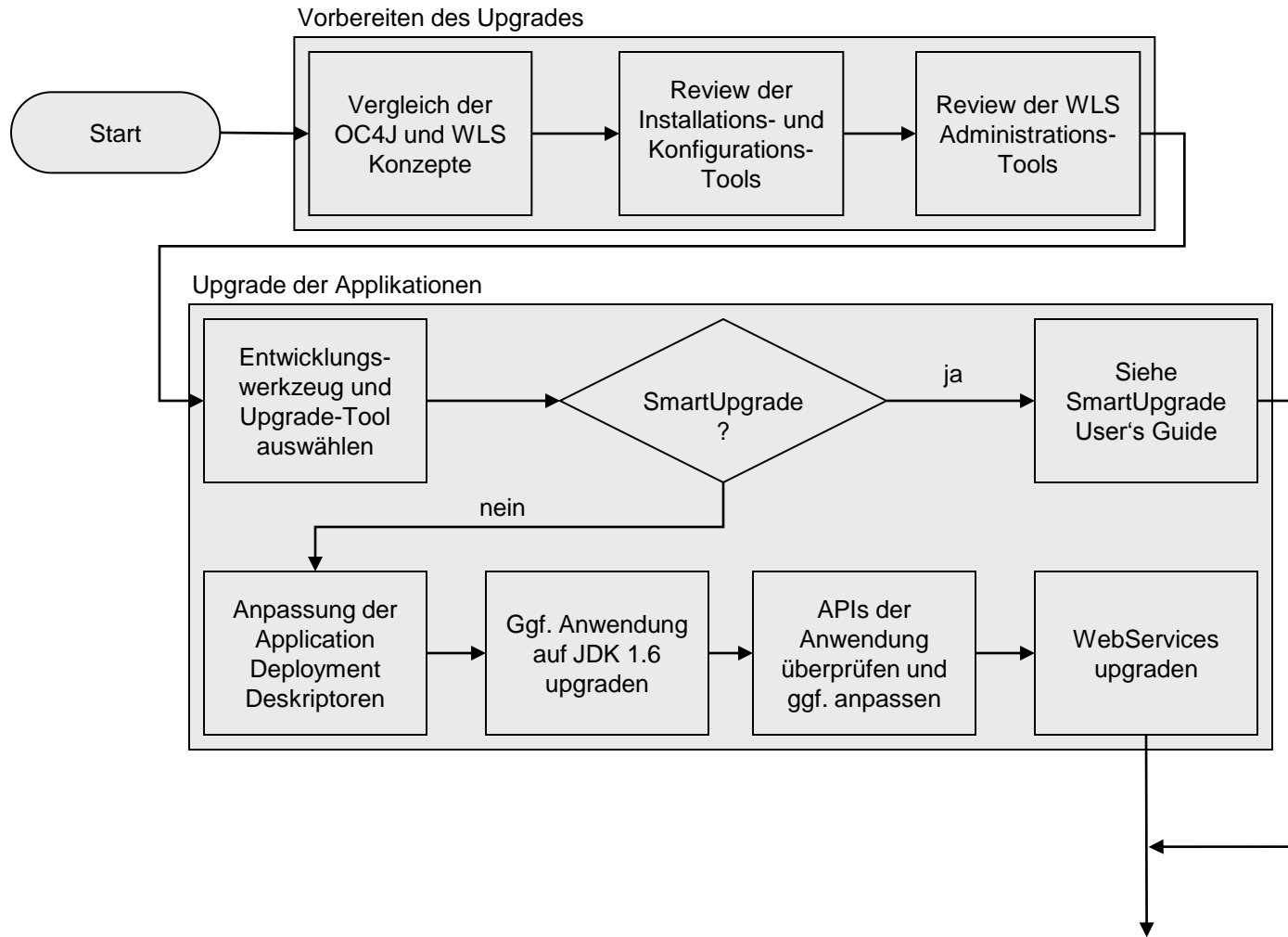
- Upgrade Guides
  - Step-by-step Anleitungen
  - Beispiele

# Oracle Fusion Middleware 11gR1 Upgrade Starting Points

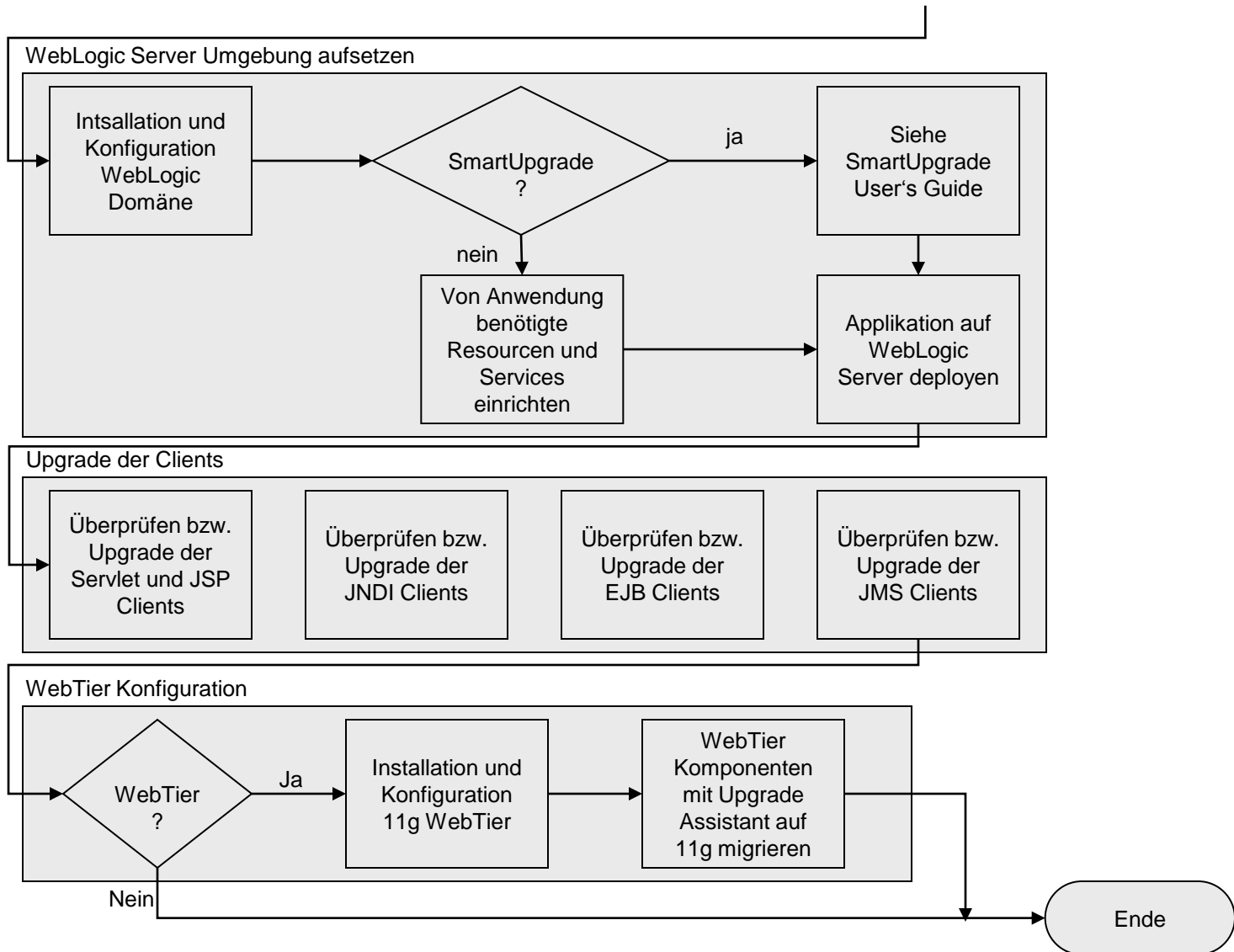
11gR1 Produkt	Notwendige Version
Oracle Discoverer, Reports und Forms	10.1.2.x
Oracle Portal	10.1.2.x oder 10.1.4.0
Oracle IdM	10.1.2.x oder 10.1.4.x
Oracle SOA Suite	10.1.3.x
Oracle Business Activity Monitoring	10.1.3.x
Oracle Business-to-Business Integration	10.1.2.x
Oracle WebCenter	10.1.3.x
Oracle Application Server (for Custom JEE Apps)	10.1.3.x or 10.1.2.x

Empfohlen wird das jeweils letzte 10.1.x Patchset

# JavaEE Upgrade Prozess Flow Chart (1)



# JavaEE Upgrade Prozess Flow Chart (2)



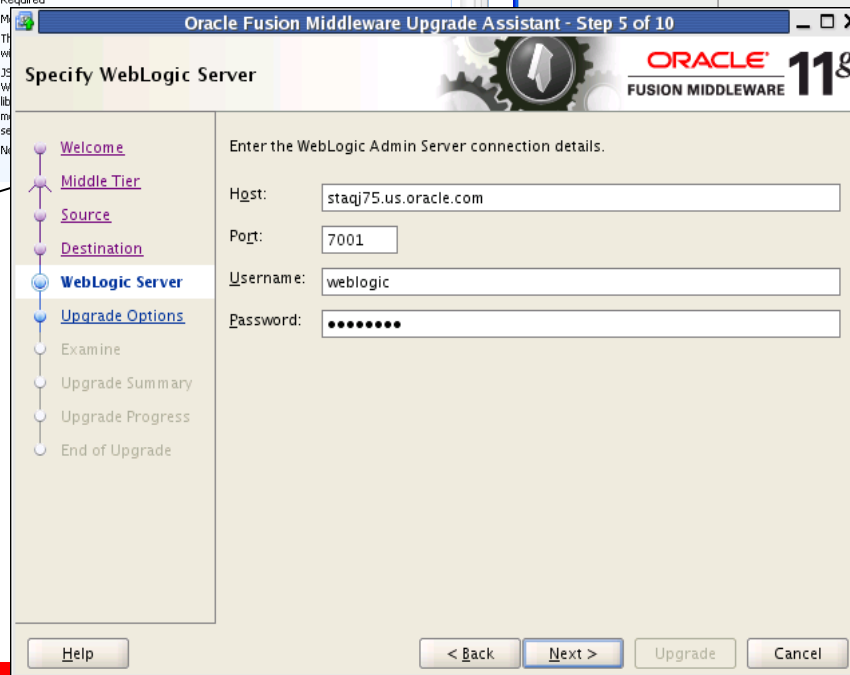
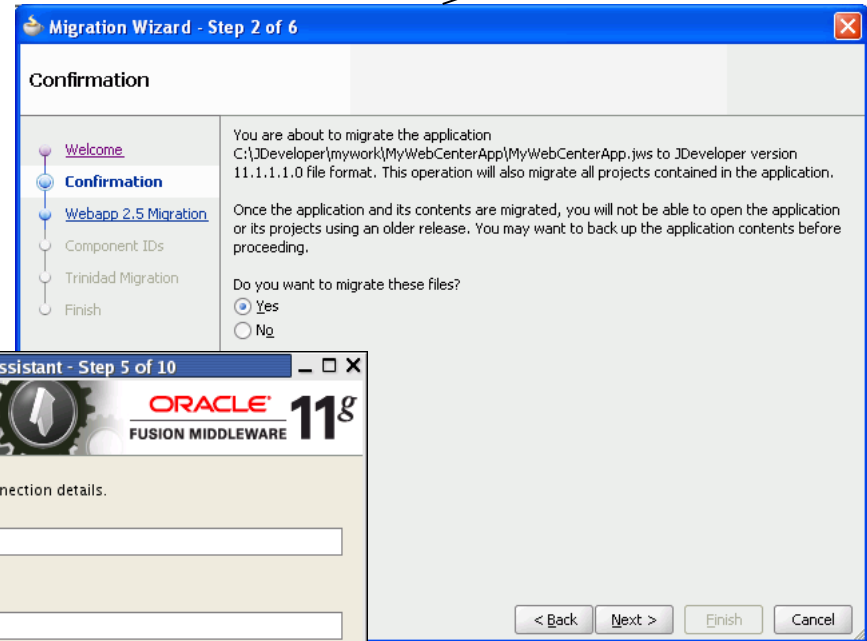
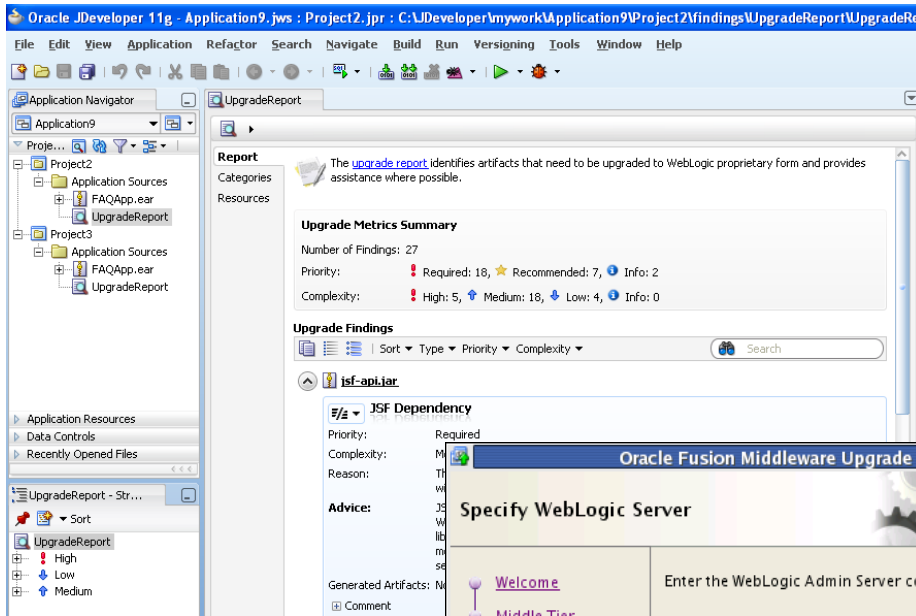


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# Oracle FMW Upgrade Tools

**JDeveloper Upgrade Wizard**  
für Upgrade von  
SOA, WebCenter und ADF  
Anwendungen



**WebLogic SmartUpgrade**  
für Upgrade von  
OC4J Java Applikationen  
und Umgebungen auf den  
WebLogic Server

**Upgrade Assistant**  
für Upgrade von  
SOA, IDM, Forms, Reports,  
Discoverer und Portal  
Umgebungen

# Upgrade Assistant – Beispiel

The image displays three overlapping screenshots of the Oracle Fusion Middleware Upgrade Assistant, illustrating the progression through steps 3, 4, and 5 of a 10-step process. Each window features the Oracle 11g logo and a progress indicator.

- Step 3 of 10: Specify Source Home**
  - Left sidebar: Welcome, Middle Tier, **Source**, Destination, WebLogic Server, Upgrade Options, Examine, Upgrade Summary, Upgrade Progress, End of Upgrade.
  - Buttons: Help
- Step 4 of 10: Specify Destination Instance**
  - Left sidebar: Welcome, Middle Tier, Source, **Destination**, WebLogic Server, Upgrade Options, Examine, Upgrade Summary, Upgrade Progress, End of Upgrade.
  - Buttons: Help
- Step 5 of 10: Specify WebLogic Server**
  - Left sidebar: Welcome, Middle Tier, Source, Destination, **WebLogic Server**, Upgrade Options, Examine, Upgrade Summary, Upgrade Progress, End of Upgrade.
  - Main content: Enter the WebLogic Admin Server connection details.
    - Host:
    - Port:
    - Username:
    - Password:
  - Buttons: Help, < Back, Next >, Upgrade, Cancel

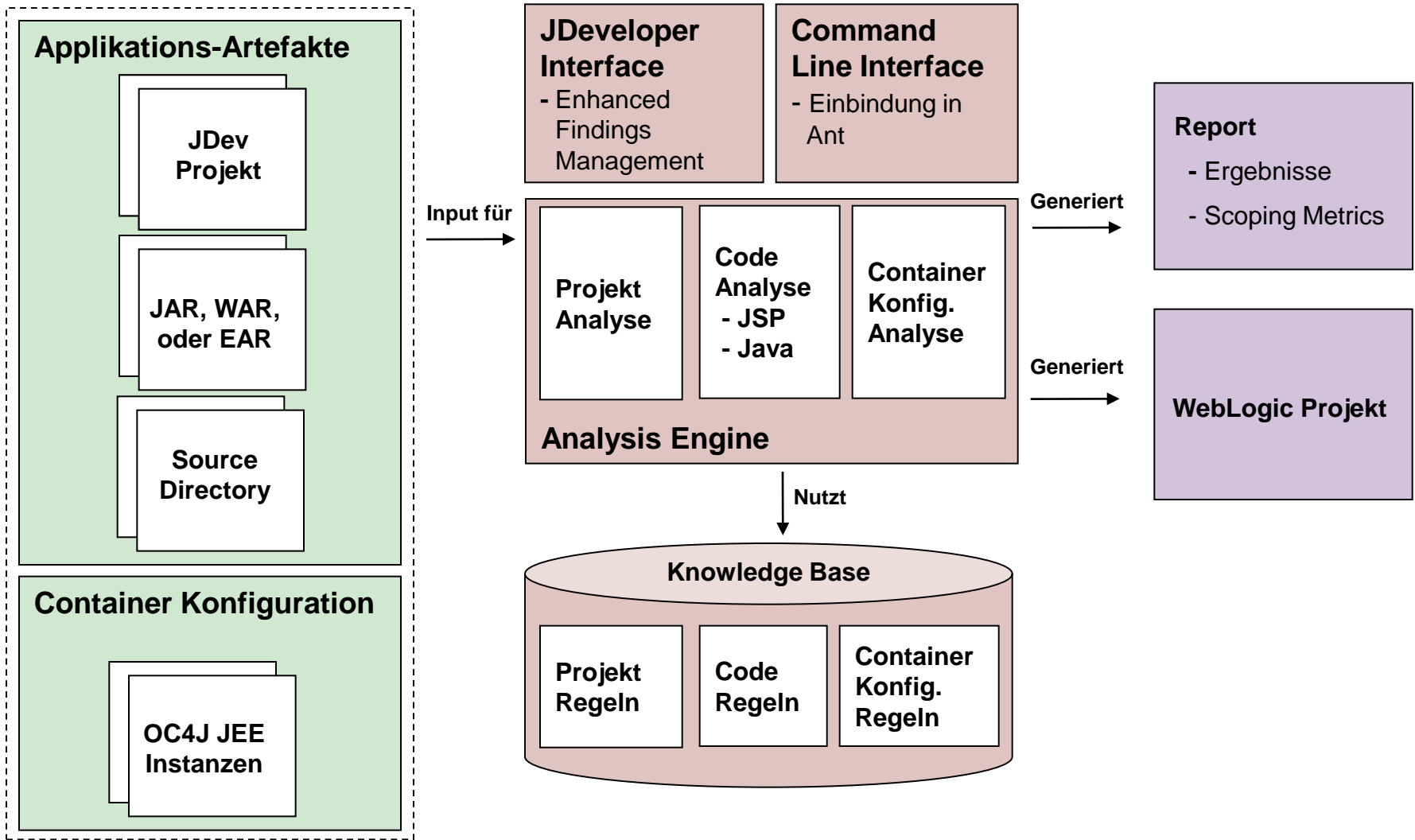
# Upgrade von Java EE Applikationen

- Oracle WebLogic SmartUpgrade
  - Upgrade von OC4J Java EE Applikationen auf WebLogic Server 11g
- Ausführliche Dokumentation
  - [Upgrade Planning Guide](#)
  - [SmartUpgrade Users Guide](#)
  - [Upgrade Guide for Java EE](#)
  - [OC4J to WLS Upgrade White Paper](#)
- Consulting Angebote
  - Oracle Fusion Middleware 11g Upgrade Service

# SmartUpgrade

- Tool zur Analyse von Paketen, JDeveloper Projekten und Oracle AS Installationen
- Analysiert Strukturen und macht Vorschläge, speziell für reine JavaEE 1.4/5.0 Anwendungen
  - orion-application.xml → weblogic-application.xml
  - orion-ejb-jar.xml → weblogic-ejb-jar.xml
  - orion-web.xml → weblogic.xml
- Iterative Vorgehensweise
- Ersetzt keine Upgradevorgehensweise bzgl. Testing etc.

# WebLogic SmartUpgrade 11g Design



# SmartUpgrade JDeveloper Interface

Oracle JDeveloper 11g - Application9.jws : Project2.jpr : C:\JDeveloper\mywork\Application9\Project2\findings\UpgradeReport\UpgradeRep

File Edit View Application Refactor Search Navigate Build Run Versigning Tools Window Help

Application Navigator

Application9

Project2

Application Sources

FAQApp.ear

UpgradeReport

Project3

Application Sources

FAQApp.ear

UpgradeReport

Application Resources

Data Controls

Recently Opened Files

UpgradeReport - Str...

Sort

UpgradeReport

High

Low

Medium

Report

The [upgrade report](#) identifies artifacts that need to be upgraded to WebLogic proprietary form and provides assistance where possible.

Categories

Resources

**Upgrade Metrics Summary**

Number of Findings: 27

Priority: ! Required: 18, ★ Recommended: 7, i Info: 2

Complexity: ! High: 5, ↑ Medium: 18, ↓ Low: 4, i Info: 0

**Upgrade Findings**

Sort Type Priority Complexity Search

**jsf-api.jar**

**JSF Dependency**

Priority: Required

Complexity: Medium

Reason: The application C:\FAQApp.ear:webAppProfile.war:WEB-INF/lib/jsf-api.jar is bundled with JSF libraries.

**Advice:** JSF is available as war libraries in WebLogic Server installation, WL\_HOME/common/deployable-libraries. You need to first deploy JSF as shared war libraries, and include <library-ref> in the weblogic.xml of the web applications or web modules, and remove jsf jar bundled in the WEB-INF/lib directory. For more information, see [Configuring JSF and JSTL Libraries](#).


Generated Artifacts: None available.

Comment


# SmartUpgrade Utility

Oracle JDeveloper 11g - ITInsuranceApp.jws : Project1.jpr


Sort ▾

 **ejb-xml-bean-deployment-max-instances**


**Rank:** 50  
**Priority:** Unknown  
**Complexity:** Unknown  
**Reason:** The configuration file C:\JDeveloperSmartUpgrade\Demo\application\ITInsuranceApp\Model\src\META-INF\orion-ejb-jar.xml contains a bean deployment element with a max-instances attribute.  
**Advice:** The maximum size of a bean pool in weblogic-ejb-jar.xml is set via the pool/max-beans-in-free-pool element. See [Pooling for Stateless Session EJBs](#) for more information on bean pooling with WebLogic Server  
**Implication:** The application contains customized bean pooling settings  
**Comment:**

 **ejb-xml-bean-deployment-min-instances**

**Rank:** 50  
**Priority:** Unknown  
**Complexity:** Unknown  
**Reason:** The configuration file C:\JDeveloperSmartUpgrade\Demo\application\ITInsuranceApp\Model\src\META-INF\orion-ejb-jar.xml contains a bean deployment element with a min-instances attribute.  
**Advice:** The minimum size of a bean pool in weblogic-ejb-jar.xml is set via the pool/initial-beans-in-free-pool element. See [Pooling for Stateless Session EJBs](#) for more information on bean pooling with WebLogic Server  
**Implication:** The application contains customized bean pooling settings  
**Comment:**

C:\JDeveloperSmartUpgrade\Demo\application\ITInsuranceApp\Project1\findings\UpgradeReport\UpgradeReport.wuf  Editing





# **WebLogic Smartupgrade Demo**

# Erste Überprüfungen und Updates

- Applikation muss Java Development Kit (JDK) 6 unterstützen
- Anpassen der Application Deployment Deskriptoren



## 4.4.1 Comparison of OC4J and Oracle WebLogic Server Deployment Descriptors

If you are familiar with the standard deployment descriptors and the OC4J-specific descriptors, you can use [Table 4–1](#) to locate the equivalent deployment descriptor files in the Oracle WebLogic Server environment.

**Table 4–1 J2EE, OC4J, and WebLogic Server Deployment Descriptors**

J2EE Standard Descriptor	OC4J Proprietary Descriptor	WebLogic Proprietary Descriptor
application.xml	orion-application.xml	weblogic-application.xml
web.xml	orion-web.xml	weblogic.xml
ejb-jar.xml	orion-ejb-jar.xml	weblogic-ejb-jar.xml
application-client.xml	orion-application-client.xml	weblogic-appclient.xml
ra.xml	oc4j-ra.xml	weblogic-ra.xml
webservices.xml	oracle-webservices.xml	weblogic-webservices.xml

## 4.4.2 Guidelines and Resources for Upgrading Deployment Descriptors for Oracle WebLogic Server

To prepare your applications for WebLogic Server deployment, you must remove OC4J-specific deployment descriptors and replace them with their equivalent

# Weitere Schritte ...

- Anpassen der Startup und Shutdown Klassen
- Security im Oracle WebLogic Server einrichten
- Logging im Oracle WebLogic Server einrichten

# Upgrade der JNDI Zugriffe

- Anpassen der JNDI Properties in Standalone JNDI Clients:
  - OC4J: `opmn:ormi://127.0.0.1:6003:oc4j1/myapplication`
  - WLS: `t3://127.0.0.1:7001`
- Ändern der Initial Context Factory auf die Oracle WebLogic Server `WLInitialContextFactory`
- Entfernen der Referenzen auf proprietäre JNDI Environment Properties

# Zusammenfassung

- Reporting
  - OC4J 10.1.3 und 10.1.2 Regeln
  - Multi-Applikations Analyse
    - Archive, Directories und JDeveloper Projekte
  - Single Instance Environment Analyse
  - Kategorisierung von Regeln und Metrik Zusammenfassung
  - Report-Formate:
    - Text, HTML oder JDev
  - JDev/Command Line
- Automatische Generierung für
  - Web Services
  - EJBs
  - Web Applikationen
  - Data Sources
  - Deployment Descriptoren
  - JCA Konfigurationen

# Fusion Middleware Upgrade Center

The screenshot shows the Oracle Fusion Middleware Upgrade Center website in a Mozilla Firefox browser window. The browser title is "Oracle Fusion Middleware Upgrade - Mozilla Firefox". The address bar shows the URL "http://www.oracle.com/technology/products/middleware/upgrade/index.html". The page features the Oracle logo and "TECHNOLOGY NETWORK" branding. A navigation menu includes "shortcuts", "GETTING STARTED", "DOWNLOADS", "DOCUMENTATION", "FORUMS", "ARTICLES", "SAMPLE CODE", and "TUTORIALS". The main content area is titled "ORACLE FUSION MIDDLEWARE - UPGRADE" and contains three sections: "Upgrading Oracle Portal, Forms, Reports, and BI Discoverer", "Upgrading Oracle SOA Suite, WebCenter, and Application Development Framework Applications", and "Upgrading Oracle Identity Management". Each section lists relevant documents for download. A "FREE DOWNLOAD" button is prominently displayed, linking to the "Oracle WebLogic SmartUpgrade" download. A "Getting Started" sidebar lists various upgrade guides and data sheets. At the bottom right, there is a banner for "ORACLE FUSION MIDDLEWARE 11g" with the text "Get New Resources Now".

Oracle Fusion Middleware Upgrade - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.oracle.com/technology/products/middleware/upgrade/index.html

Oracle Websites

Welcome Michael (Account | Manage Subscriptions | Sign Out)

secure search Technology Network

PRODUCTS

- Database
- Middleware
- Developer Tools
- Enterprise Management
- Applications Technology
- Products A-Z

TECHNOLOGIES

- BI & Data Warehousing
- Embedded
- Java
- Linux
- .NET
- PHP
- Security
- Technologies A-Z

ARCHITECTURE

- Enterprise Architecture
- Enterprise 2.0
- Grid
- Service-Oriented Architecture
- Virtualization

COMMUNITY

- Join OTN
- Oracle ACEs
- Oracle Mix
- Oracle Wiki
- Blogs
- Podcasts
- Events

shortcuts GETTING STARTED DOWNLOADS DOCUMENTATION FORUMS ARTICLES SAMPLE CODE TUTORIALS

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## ORACLE FUSION MIDDLEWARE - UPGRADE

Upgrade to Oracle Fusion Middleware 11g is greatly simplified by a set of tools designed to maximize the automation of the upgrade process. Oracle designed this tooling to ensure a highly reliable upgrade process that minimizes application downtime and allows for rapid and seamless uptake of the Oracle Fusion Middleware 11g features and capabilities. This tooling is complemented with comprehensive documentation that guides you through the 11g upgrade experience.

**FREE DOWNLOAD**

Download  
Oracle WebLogic SmartUpgrade  
(See All Middleware Downloads)

### Getting Started

- Oracle Fusion Middleware Upgrade Planning Guide 11g Release 1
- Upgrading Oracle Application Server Solutions Data Sheet
- Oracle WebLogic SmartUpgrade Data Sheet
- Oracle Consulting Fusion Middleware 11g Upgrade Offering Data Sheet
- Upgrading Custom Java EE Applications from Oracle Application Server to WebLogic Server White Paper

### Upgrading Oracle Portal, Forms, Reports, and BI Discoverer

- Upgrading Oracle Application Server Solutions Data Sheet (PDF)
- Oracle Fusion Middleware Upgrade Guide for Oracle Portal, Forms, Reports, and Discoverer 11g Release 1

### Upgrading Oracle SOA Suite, WebCenter, and Application Development Framework Applications

- Oracle Fusion Middleware Upgrade Guide for Oracle SOA Suite, WebCenter, and ADF 11g Release 1
- Migrating the 10.1.3 SRDemo Sample to JDeveloper / ADF 11g

### Upgrading Oracle Identity Management

- Upgrading Oracle Application Server Solutions Data Sheet (PDF)
- Oracle Fusion Middleware Upgrade Guide for Oracle Identity Management

ORACLE FUSION MIDDLEWARE 11g Get New Resources Now



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