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WebLogic Server: Installation Best Practices

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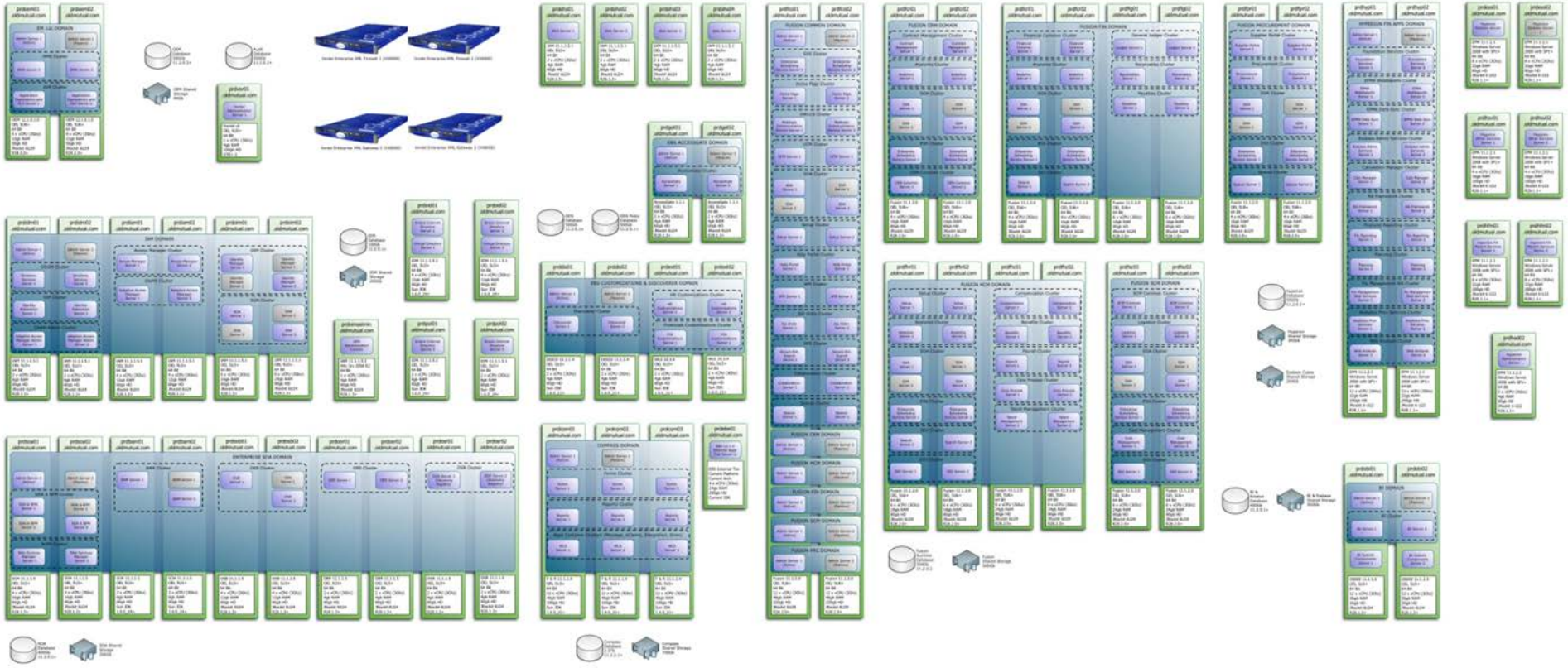
The Goal



Planing

Be Prepared for the Future – Avoid Surprises

- Plan for
  - JDK
  - Directory Structure
  - Network Layout
  - AdminServer
  - ManagedServer
  - Clustering
  - JMS
  - Transactional Logs
  - Identity Store
  - Policy Store

JDK Setup

Do you know this?

- <Sep 11, 2013 2:45:24 AM PDT> <Notice> <Security> <BEA-090898> <**Ignoring the trusted CA certificate "CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR". The loading of the trusted certificate list raised a certificate parsing exception PKIX: Unsupported OID in the AlgorithmIdentifier object: 1.2.840.113549.1.1.11**.>
- <Sep 11, 2013 2:45:24 AM PDT> <Notice> <Security> <BEA-090898> <**Ignoring the trusted CA certificate "CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US". The loading of the trusted certificate list raised a certificate parsing exception PKIX: Unsupported OID in the AlgorithmIdentifier object: 1.2.840.113549.1.1.11**.>

JDK Setup

- Use the latest available JDK
- Use a version number neutral path
- Make it part of the ORACLE_HOME
- Add some entropy
  - `-Djava.security.egd=file:/dev/urandom`
- Install the JCE Unlimited Strength Jurisdication Policy Files

WLS Installer

With or without?

- Always use the generic installer
- Allows the same installer on every platform

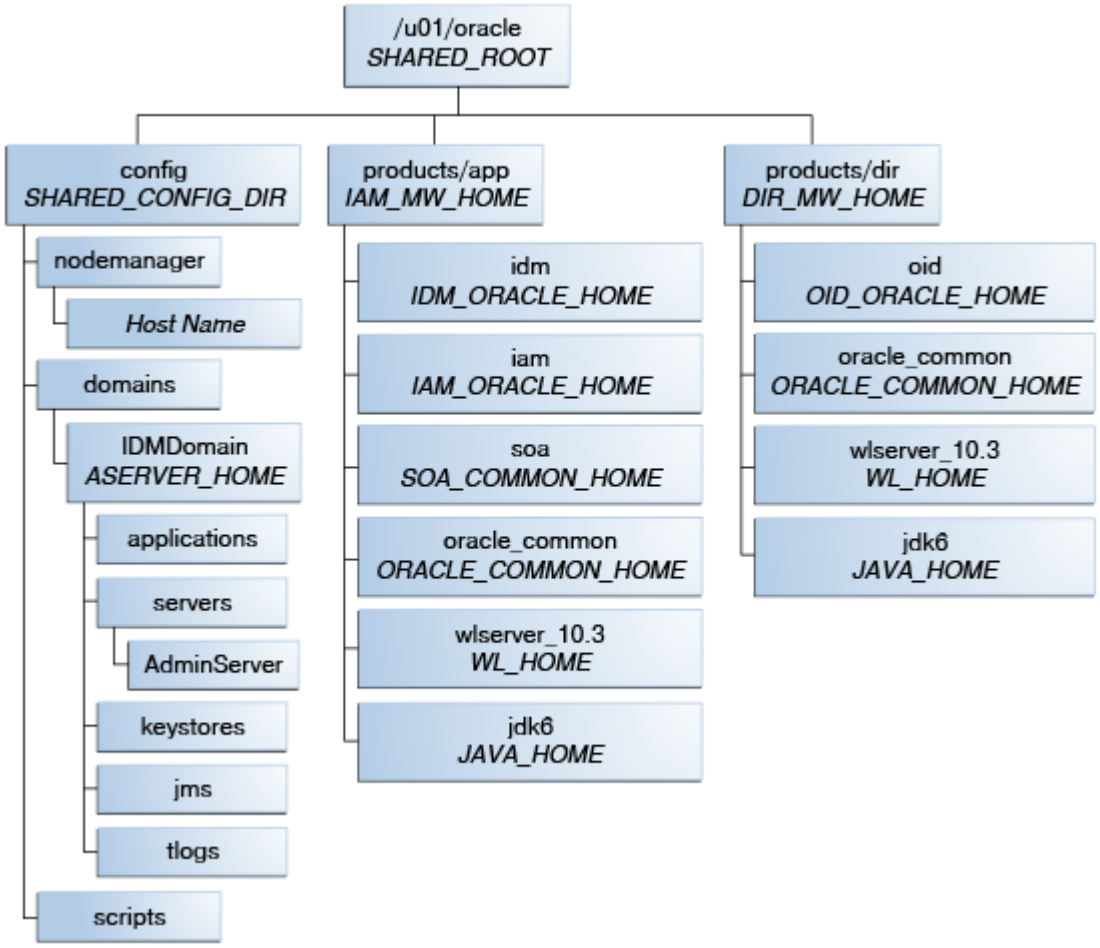
Directory Structure

- Decide on the home structure
- Include the oraInventory, if any.
- Separate binaries from configuration
- Share binaries

Directory Structure

Shared Storage

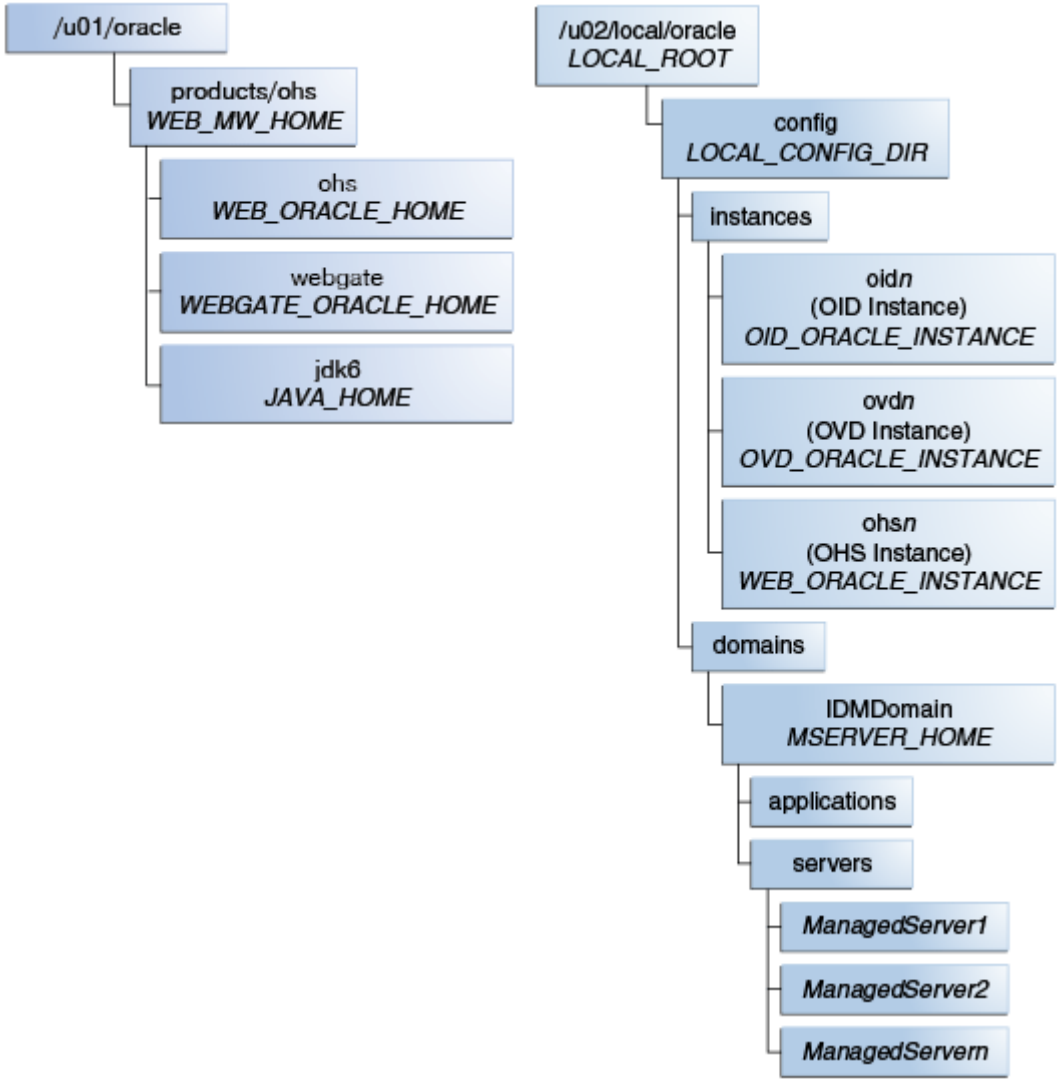
- Common Base
- Shared Everything
- Relies on shared drive performance
- Easy backup
- Easy recovery



Directory Structure

Local Storage

- For configuration only
- Best for DMZ
- Rarely for internal parts



Network

- Plan for Server Migration
- Reserve all expected IPs
- Distinguish between External and Internal IPs
- Plan with Load Balancer
- Plan with OHS Front End
- Use Internal Hostnames for Internal IPs
- Use External Hostnames for External IPs

Network

Internal Hostnames and IPs

- All hostnames used by the environment internally
- Hostnames not available for any normal user
- Internal IPs do not resolve to normal users

Network

External Hostnames and IPs

- Hostnames available for all users
- Resolve through DNS

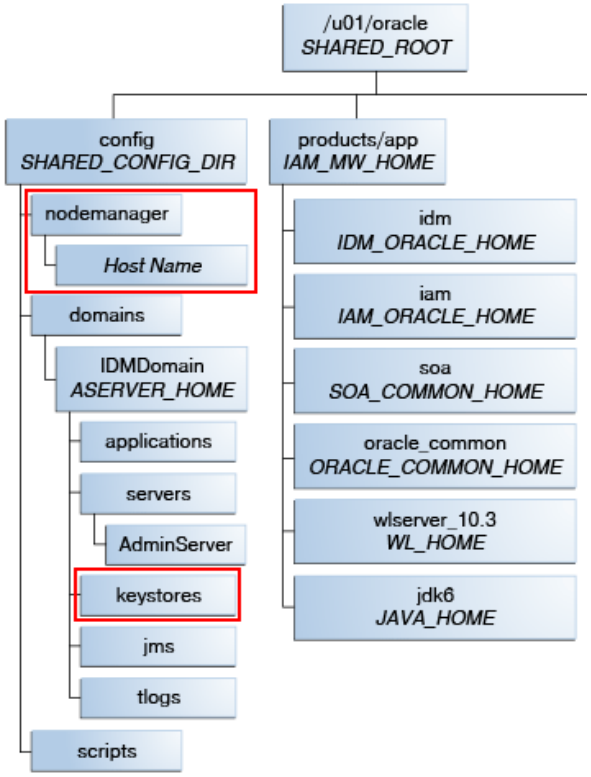
DNS Management

Use A Caching DNS Server

- Avoids Internal hostnames and IP resolution through local files
- One Caching DNS per Environment
  - E.g. dnsmasq
- Configures Internal IPs for Internal Hostnames only
- External IPs in Global DNS only

Nodemanager

- Do not use default structure
- Have configuration separated from binaries
- Use JSSE
- Use separate keystore
- Change default admin user name
  - Do not use „admin“
- Change default password
  - Do not use password of WLS domain admin user

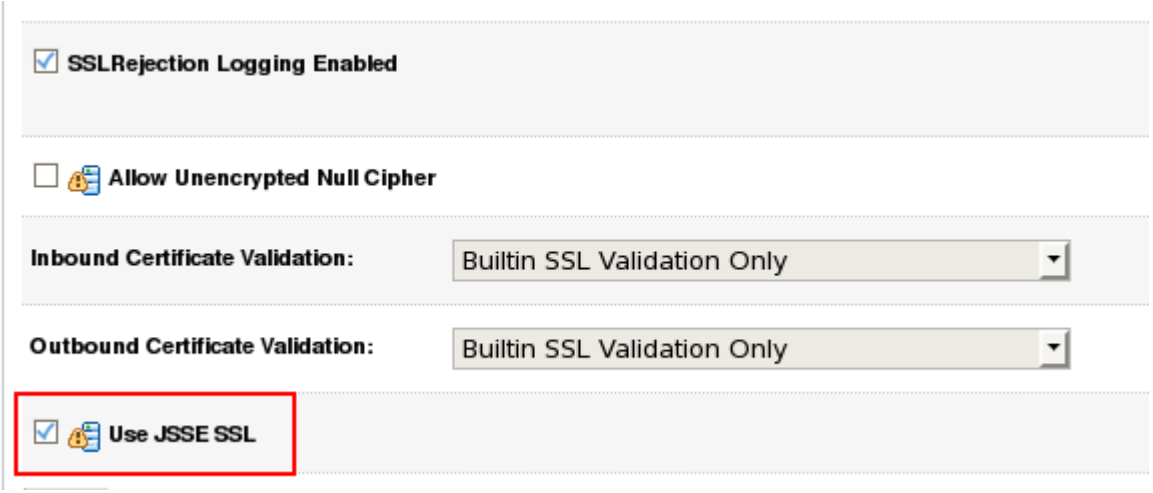


AdminServer

- Configure JSSE
- Avoid Demo Identity and Demo Trust Store
- Plan for OHS integration
- Avoid Network Frontend Setup

AdminServer

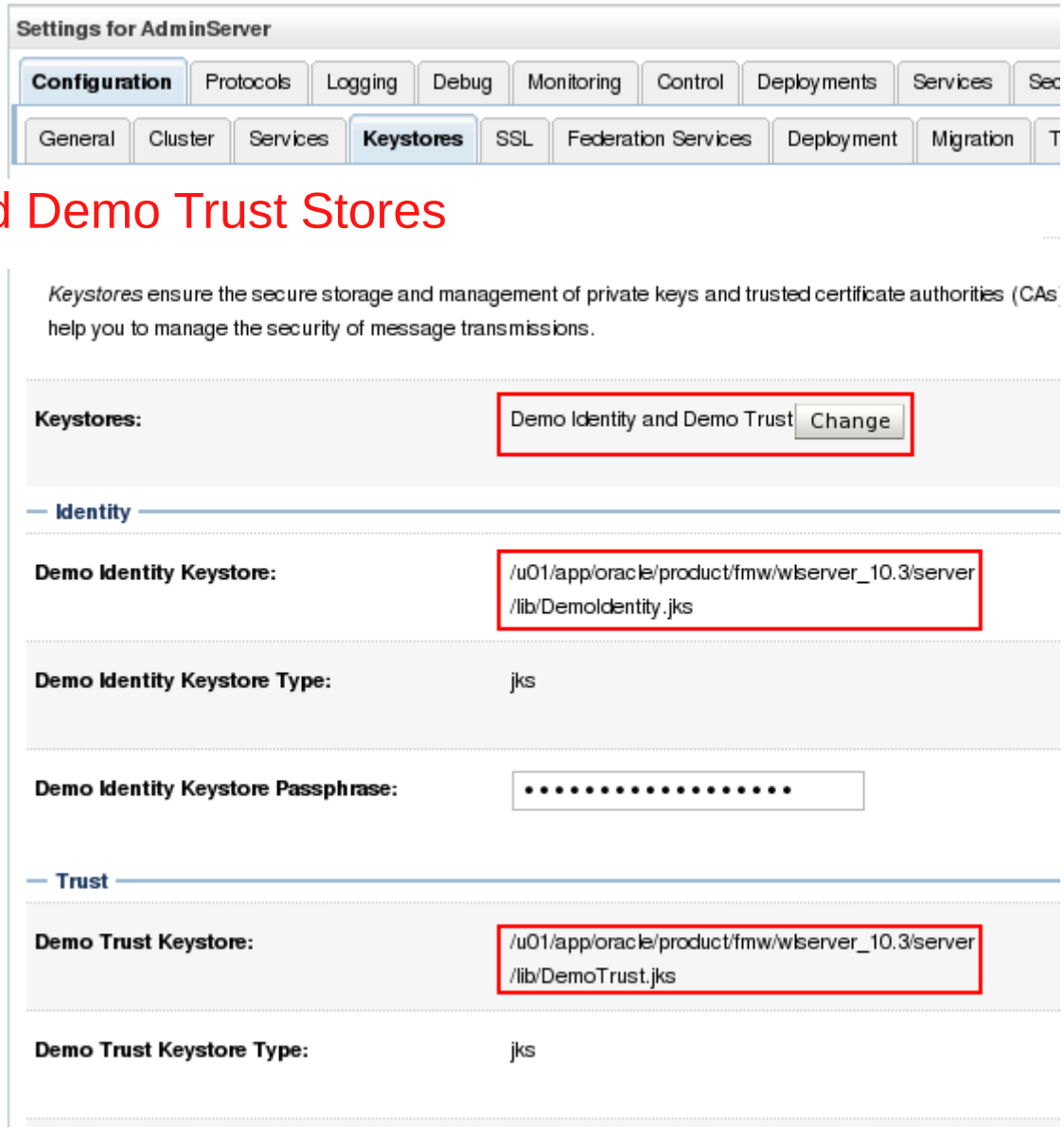
Configure JSSE



- `export CONFIG_JVM_ARGS="-Dweblogic.ssl.JSSEEnabled=true -Dweblogic.security.SSL.enableJSSE=true"`

AdminServer

Avoid Demo Identity and Demo Trust Stores



AdminServer

Plan for OHS Integration

- ```
  <VirtualHost *:7777>
    ServerName ADMIN.mycompany.com:80
    <Location /console>
     SetHandler weblogic-handler
     WebLogicHost ADMINVHN.mycompany.com
     WeblogicPort 7001
    </Location>
    <Location /odsm>
     SetHandler weblogic-handler
     WebLogicCluster admin1.mycompany.com:7006,admin2.mycompany.com:7006
    </Location>
  </VirtualHost>
  ```
- Enable Weblogic Plugin
  ```

AdminServer

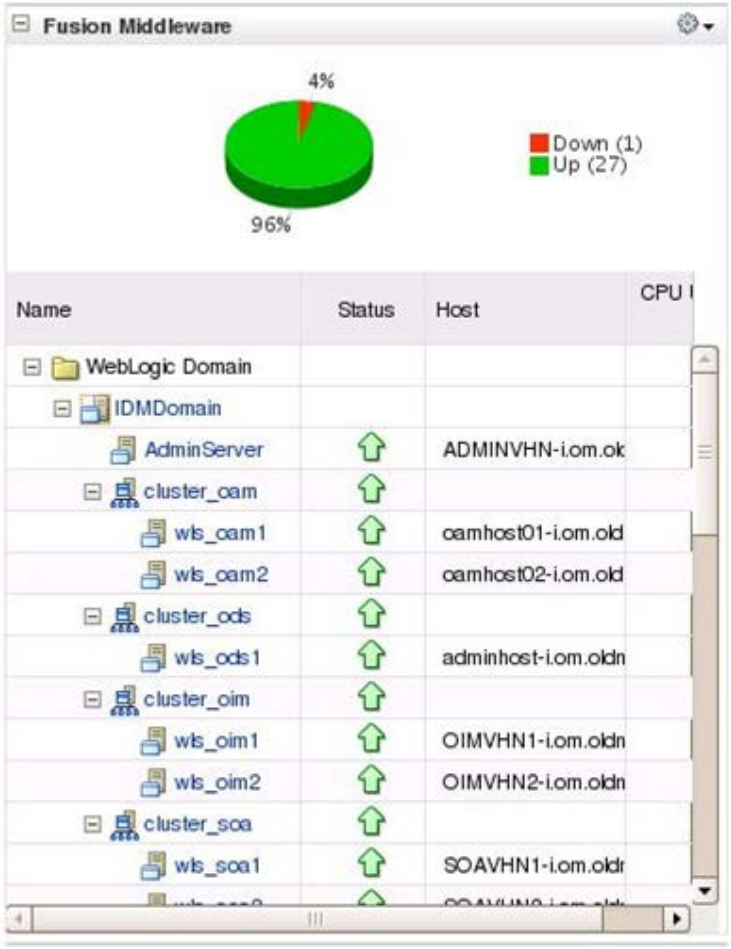
Avoid Network Frontend Setup

ManagedServer

- Put in a Cluster
- Use the correct JMS Distribution Destination type
- Plan for Server Migration

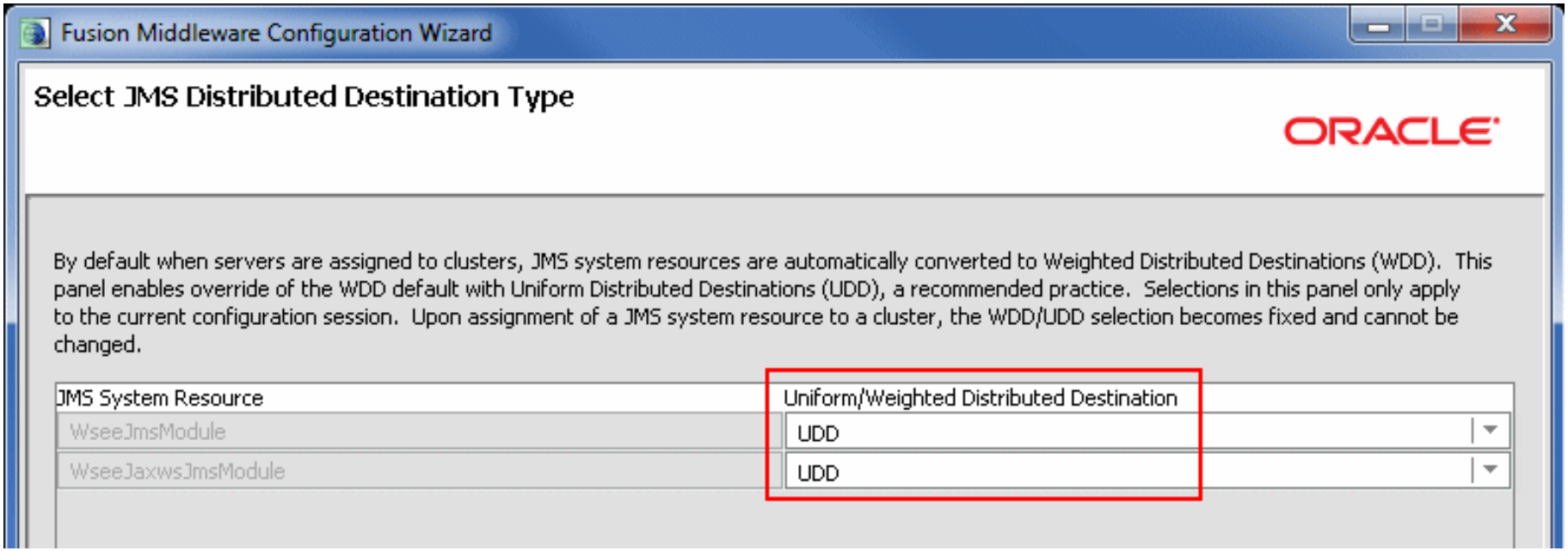
ManagedServer

Put in a Cluster



ManagedServer

Use the Correct JMS Distribution Destination Type



Managed Server

Server Migration: Leasing Table & Data Source

- Leasing Table required
- Data Source *leasing* (*jdbc/leasing*)
  - Multi Data Source for RAC database
  - Targeted to migratable ManagedServers

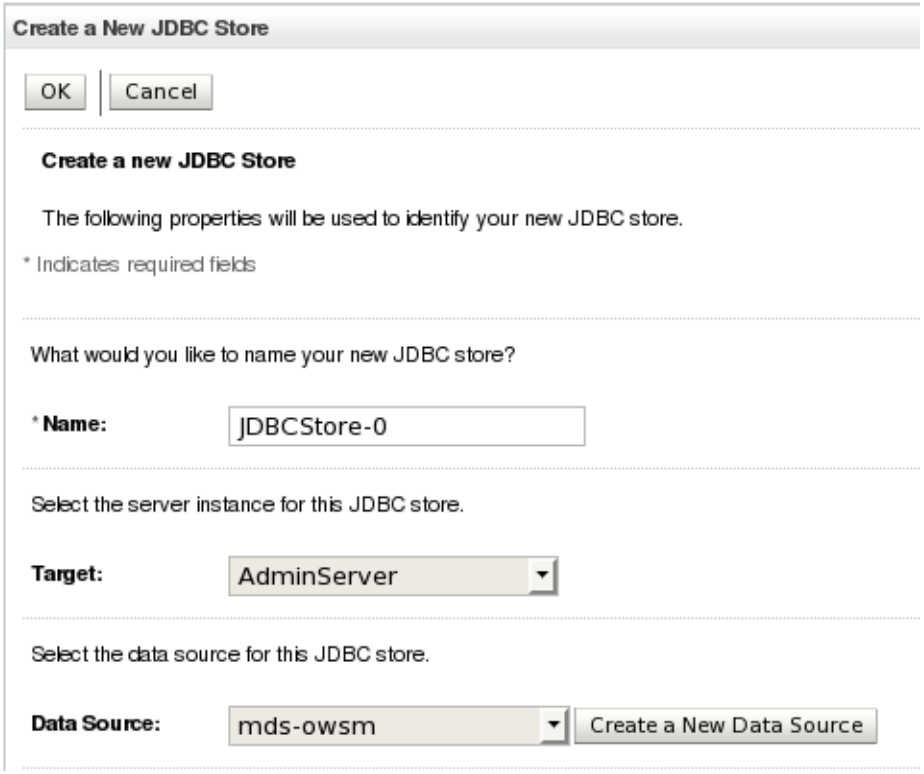
Managed Server

Server Migration: Nodemanager

- File *nodemanager.properties*
  - `Interface: eth0`
    `NetMask: 255.255.255.0`
    `UseMacBroadcast=true`
- Verify startup output
  - `StateCheckInterval=500`
    `eth0=*,NetMask=255.255.248.0`
    `UseMACBroadcast=true`

JMS

- Plan for hot backups
- Use JDBC store for JMS storage



Transaction Logs

- Plan for hot backups
- Use JDBC store for Transaction Logs
  -
```
<server>
 <transaction-log-jdbc-store>
  <data-source>MyDataSource</data-source>
  <prefix-name>TLOG_MS1</prefix-name>
  <create-table-ddl-file>myDDL/myCreateTable.sql</create-table-ddl-
file>
  <max-retry-seconds-before-tlog-fail>120</max-retry-seconds-before-
tlog-fail>
 </transaction-log-jdbc-store>
</server>
```

- Globally-Scoped DataSource
- One JDBC TLOG per server
- Not shared between servers

Miscellaneous

- Install Oracle Application Development Runtime
- Externalize Identity Store
  - OVD
  - OID
  - OUD
- Externalize Single Sign-On
  - OAM
    - Username/Password
    - Kerberos (Windows Native Authentication / SPNEGO)
    - Secure Token Service
    - SAML (w/ OIF)
    - Strong Authentication with Oracle Adaptive Access Manager

Hardware and Software

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