



**ciber**  
committed to the limit.

## OGh DBA dag

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Patching met OEM Provisioning Pack

13 september 2010

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Ron van der Post

# Introductie

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Welkom en over de spreker

## Welkom

### Ron van der Post

- HTS-Energietechniek Haagse Hogeschool
- KPN testcoördinator / KPN.com DBA
- CIBER DBA Ziggo

- Motoren / Sporten



- Vergeet niet:



# Agenda

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Over het onderwerp

- **Start vragen**
- **Deployment Procedures**
- **Voordat we beginnen**
- **Patchen via procedures**
- **Aandachtspunten**
- **Customizing procedures**
- **Voor- en nadelen**
- **Demo**
- **Vragen**

# Start vragen

Start vragen ? Ja, vragen van mij aan U.

- **Wie beheert zijn omgeving met OEM ?**
- **Wie installeert de laatste patchset ?**
- **Wie installeert momenteel de CPU patches ?**
- **Wie gebruikt hiervoor OEM Deployment Procedures ?**

The screenshot displays the Oracle Enterprise Manager Grid Control 11g interface. At the top, the Oracle logo is followed by 'Enterprise Manager' and 'Grid Control 11g'. Below this is a navigation bar with 'General', 'Provisioning', and 'Patches & Updates'. The main content area is titled 'Deployments' and contains a section for 'Recommended Security Patches' with a link to 'Security Recommendations 5'. Below that is a 'Deployments Summary' section with a 'View' dropdown menu set to 'Database Installations'. A notification icon indicates 'Software Targets Without Inventory: 1 of 6'. A table lists the following database installations:

Database Installations
Oracle Database 10g 10.2.0.3.0
Oracle Database 10g 10.2.0.4.0
Oracle Database 11g 11.1.0.7.0

# Deployment Procedures

Deployment Procedures: Wat zijn dat eigenlijk ?

- Procedure → aanéenschakeling van steps
- Een step kunnen we:  
**Enable / Disable / Delete / Insert / Edit**

Enable   Disable   Delete   Insert   Edit Step	
Select All   Select None   Expand All   Collapse All	
Select	Name
<input type="checkbox"/>	▼ Demo Patch Oracle Database oracle
<input type="checkbox"/>	Initialize
<input type="checkbox"/>	Run Prerequisite Checks
<input type="checkbox"/>	▼ For all hosts
<input type="checkbox"/>	▼ For all homes
<input type="checkbox"/>	OHPreProcess
<input type="checkbox"/>	<u>Run opatch lsinventory</u>

# Deployment Procedures

Deployment Procedures: Wat zijn dat eigenlijk ?

- Een step heeft een:  
**Naam / Beschrijving**  
**Type / Run Privilege / Error Handling**

Enable Disable Delete Insert Edit Step			
Select All   Select None   Expand All   Collapse All			
Select	Name	Type	Description
<input type="checkbox"/>	▼ Demo Patch Oracle Database oracle		Demo procedure for patching standalone Oracle Database installations patches, and patchsets as user oracle
<input type="checkbox"/>	Initialize	Computational	Initializes the runtime data. The step also downloads patch from My C library components, for all patches selected to run from My Oracle Sup step.
<input type="checkbox"/>	Run Prerequisite Checks	Computational	Performs prerequisite checks for procedure.
<input type="checkbox"/>	▼ <a href="#">For all hosts</a>	Parallel	Iterates over a list of Hosts.
<input type="checkbox"/>	▼ <a href="#">For all homes</a>	Rolling	Iterates over a list of Oracle Homes.
<input type="checkbox"/>	OHPreProcess	Computational	Initializes each Oracle Home. Do not disable or delete this step.
<input type="checkbox"/>	<a href="#">Run opatch lsinventory</a>	Directive	Run opatch lsinventory and set output in /home/oracle/local /log/run_opatch_lsinventory_<SIDs>_<YYYYMMDD_HH24MISS>.out

# Deployment Procedures

Deployment Procedures: Wat zijn dat eigenlijk ?

## Steps worden uitgevoerd via een job

ORACLE Enterprise Manager  
Grid Control 11g

Job Activity | Job Library

### Job Activity

#### Advanced Search

Name	<input type="text"/>	Job 1
Owner	RVDPOST	Target 1
Status	All	Target N
Scheduled Start	All	

[Show jobs scheduled to start during or after the selected period.](#)

View

<input type="button" value="View Results"/>	<input type="button" value="Edit"/>	<input type="button" value="Create Like"/>	<input type="button" value="Copy To Library"/>	<input type="button" value="Suspend"/>	<input type="button" value="Resume"/>	<input type="button" value="Stop"/>	<input type="button" value="Delete"/>	<input type="button" value="Create Job"/>	<input type="button" value="OS Command"/>
Select	Name	Status (Executions)	Scheduled						
<input checked="" type="radio"/>	<a href="#">HOST_CONFIG_COLL_JOB_8F275FF9BBF70472E04400144F9DB4D0</a>	1 Succeeded	01-Sep-2010 01:59:07						
<input type="radio"/>	<a href="#">RUN_STAGE_CLEANUP_8F275FF9BBE0472E04400144F9DB4D0</a>	1 Succeeded	01-Sep-2010 01:58:00						
<input type="radio"/>	<a href="#">RUN_OPATCH_CLEANUP_8F275FF9BBE50472E04400144F9DB4D0</a>	1 Succeeded	01-Sep-2010 01:57:00						
<input type="radio"/>	<a href="#">RUN_CHECK_SQL_8F275FF9BBD0472E04400144F9DB4D0</a>	1 Succeeded	01-Sep-2010 01:56:25						

# Voordat we beginnen

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Instellingen voordat we beginnen met Patchen

- **Software Library**
- **Update Opatch job**
- **Refresh from MOS job**
- **Creëren eigen Deployment Procedure**



# Voordat we beginnen

Instellingen voordat we beginnen met Patchen

- **Software Library**

**Bevat: software components, directives, images**

**Instellen: Deployments → Provisioning →**

**Administration → Software Library Configuration**

## Software Library Configuration

Manage the directory paths that the software library uses to store binary data. All directory paths should be accessible from all Oracle Mana Use 'Purge' to free up space in the software library by purging the deleted entities. Use the Export/Import functionalities to export entities pre

<a>Edit</a> <a>Remove</a>   <a>Add</a> <a>Check Accessibility</a> <a>Refresh</a> <a>Purge</a>				
Select	Directory Location	Free Space (KB)	Used Space (KB)	Used Space
	/db/stage/provisioning	7,549,176	3,619,589	0
<a>Components</a> <a>Directives</a> <a>Networks</a> <a>Images</a> <a>Suites</a> <a>Assignments</a> <a>Hardware</a> <a>Cluster</a> <a>Suite Instance</a> <a>Adm</a>				

Home | Targets | Deployments | Alerts | Compliance | Jobs | Re

# Voordat we beginnen

Instellingen voordat we beginnen met Patchen

- **Update OPatch job**

**Download dagelijks laatste versie OPatch**

**Out Of The Box Job**

**Jobs → Job Type: OPatch Update → Target Type: Targetless**

View

|

Select	Name	Status (Executions)	Scheduled ▾
<input checked="" type="radio"/>	<a href="#">OPATCH PATCH UPDATE JOB</a>	1 Scheduled	31-Aug-2010 00:00:00
<input type="radio"/>	<a href="#">OPATCH PATCH UPDATE JOB</a>	1 Succeeded	30-Aug-2010 00:00:00
<input type="radio"/>	<a href="#">OPATCH PATCH UPDATE JOB</a>	1 Succeeded	29-Aug-2010 00:00:00
<input type="radio"/>	<a href="#">OPATCH PATCH UPDATE JOB</a>	1 Succeeded	28-Aug-2010 00:00:00
<input type="radio"/>	<a href="#">OPATCH PATCH UPDATE JOB</a>	1 Succeeded	27-Aug-2010 00:00:00

# Voordat we beginnen

Instellingen voordat we beginnen met Patchen

- Refresh from MOS job

Download dagelijks laatste aanbevolen patchlist

Out Of The Box Job

Jobs → Job Type: Refresh from MOS job → Target Type: Targetless

View

|

Select	Name	Status (Executions)	Scheduled
<input checked="" type="radio"/>	<a href="#">REFRESH FROM METALINK JOB</a>	1 Scheduled	31-Aug-2010 12:59:00
<input type="radio"/>	<a href="#">REFRESH FROM METALINK JOB</a>	1 Succeeded	30-Aug-2010 12:59:00
<input type="radio"/>	<a href="#">REFRESH FROM METALINK JOB</a>	1 Succeeded	29-Aug-2010 12:59:00
<input type="radio"/>	<a href="#">REFRESH FROM METALINK JOB</a>	1 Succeeded	28-Aug-2010 12:59:00
<input type="radio"/>	<a href="#">REFRESH FROM METALINK JOB</a>	1 Succeeded	27-Aug-2010 12:59:00

# Voordat we beginnen

Instellingen voordat we beginnen met Patchen

- Creëren eigen Deployment Procedure  
Standaard procedures (Oracle)  
Create like → No Edit / Revert / Delete

ORACLE Enterprise Manager  
Grid Control 11g

General | Provisioning | Patches & Updates

### Deployment Procedure Manager

Procedures | Procedure Completion Status | Recycle Bin

Deployment procedures are best practices provided by Oracle for various Provision environment. For more details click Help.

Search Text Fields

Type

Last Modified by

Select	Procedure	Type	Description
<input checked="" type="radio"/>	<a href="#">Patch Oracle Database</a>	Patch Oracle Software	Procedure for patching for example, DB 10.1

Setup | Preferences | Help | Logout

Home | Jobs | Reports | My Oracle Support

at you can customize the procedure to fit your

Last Modified By	Version	Last Updated
Oracle	6.0	19-Apr-2010 14:42:40 MEST

# Voordat we beginnen

Instellingen voordat we beginnen met Patchen

- **Creëren eigen Deployment Procedure**
  - Duidelijke naamgeving**
  - Default stage path (waar niet unix?)**
  - Default sudo command**

ORACLE Enterprise Manager  
Grid Control 11g

General | Provisioning | Patches & Updates

Procedures > Status: Patch Oracle Database R6 >

Create Like Procedure

Name	<input type="text" value="Demo Patch Oracle Database oracle"/>
Description	<input type="text" value="Procedure for patching standalone Orac"/>
Procedure Utilities Staging Path	<input type="text" value="/var/tmp"/> <small>Enter the target's complete path to place binaries when running this procedure (e.g., /tmp/or</small>
Sudo Command	<input type="text" value="/opt/sfw/bin/sudo su - oracle"/> <small>Enter sudo command. If it is not in default path, specify full path (e.g., /usr/local/bin/sudo).</small>

# Patchen via procedures

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Welke steps bevat de patch procedure op hoofdlijnen (1/2)

- **Stage patch**
- **Unzip patch**
- **Update Opatch**
- **Start blackout targets**
- **Stoppen targets**

# Patchen via procedures

---

Welke steps bevat de patch procedure op hoofdlijnen (2/2)

- **Patch target**
  - **Run catcpu**
  - **Starten targets**
  - **Stoppen blackout targets**
- 
- **Hoe wordt de patch procedure gestart ?**  
**Dit komt straks in de demo**

# Aandachtspunten

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Waar moet we rekening houden

- Patch readme
- Testen
- Centrale oraInventory (lock)
- Stage directory
- Belasting OMS
- Hardware clusters
- Dataguard omgevingen



# Customizing procedures

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Wat missen we ? Stappen toevoegen aan procedure

## Wat doet de procedure niet ?

- **Versie / patch level Oracle Home voor uitvoer**
- **Versie / patch level / status database voor uitvoer**
- **Versie / patch level Oracle Home na uitvoer**
- **Versie / patch level / status database na uitvoer**
- **Uitvoeren OPatch cleanup**
- **Verwijderen staged patch**

# Customizing procedures

Stappen toevoegen aan procedure

- Step toevoegen  
Create directive  
Voeg step toe met type directive

General | Provisioning | Patches & Updates

## Provisioning

Provision a full stack of software ranging from Operating System to applications onto a Hardware Server.

[Components](#) | **Directives** | [Networks](#) | [Images](#) | [Suites](#) | [Assignments](#) | [Hardware](#) | [Cluster](#) | [Suite Instance](#)

Upload scripts to stage and install Components and Images.

View   [Advanced Search](#)

Select	Name	Type	Revision	Status	Maturity	Product
<input checked="" type="radio"/>	▼ Directives					
<input type="radio"/>	▼ Custom Directives					
<input type="radio"/>	Rollback Patches		10.9	Active	Production	
<input type="radio"/>	Run check SQL		0.6	Active	Production	
<input type="radio"/>	Run check working directories		1.0	Active	Production	
<input type="radio"/>	Run opatch cleanup		0.4	Active	Production	

# Customizing procedures

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Verdere optimalisatie

**Wat zouden we nog meer kunnen optimaliseren ?**

- **Vooraf inventories scheiden**
- **Vooraf stagen**
- **Vooraf opatch**

# Voor- en nadelen

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Voor- en nadelen patchen via procedures

- **Voordelen**

- Altijd identiek
- Parallel uit te voeren
- Sneller
- Mogelijkheid tot schedulen

- **Nadelen**

- Extra kosten Provisioning pack
- Succeeded ?
- Belasting OMS

# Demo

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Een demo om het in de praktijk te zien

- **Demo omgeving**
- **Host 1** : emn-dbadb-ts1-01
  - Oracle Home** : /opt/oracle/db/YAMAHA/11.1.0
  - Database** : R1
  - Versie** : 11.1.0.7 (no PSU/CPU)
- **Host 2** : emn-dbadb-ts1-02
  - Oracle Home** : /opt/oracle/db/YAMAHA/11.1.0
  - Database** : R6
  - Versie** : 11.1.0.7 (no PSU/CPU)
- **Opdracht** : Patch omgeving naar CPU Jul 2010

# Demo

Demo Resultaten

## Hoe ziet de uitgevoerde procedure eruit ?

ORACLE Enterprise Manager  
Grid Control 11g

General | Provisioning | Patches & Updates

### Deployment Procedure Manager

[Procedures](#)

**Procedure Completion Status**

[Recycle Bin](#)

All deployment procedures in various stages of their lifecycle are shown below. Set the refresh settings to update the page automatically.

Search Text Fields

Go

[Advanced Search](#)

[Stop](#) [Suspend](#) [Resume](#) [Retry](#) [Delete](#) [Schedule Deployment...](#)

Select	Run	Status	Procedure
<input type="checkbox"/>	Demo Patch Oracle Database oracle R1 R6	Succeeded	Demo Patch Oracle Database oracle

# Demo

## Demo Resultaten

### Status Detail

<a href="#">Steps</a> <a href="#">Job Details</a> <a href="#">OMS Log</a>			
<a href="#">Expand All</a>   <a href="#">Collapse All</a>			
Name	Status	Type	Description
▼ Demo Patch Oracle Database oracle	Succeeded		Demo procedure for patching standalone Oracle Database instances, patches, and patchsets as user oracle
<a href="#">Initialize</a>	Succeeded	Computational	Initializes the runtime data. The step also downloads patch library components, for all patches selected to run from My step.
<a href="#">Run Prerequisite Checks</a>	Succeeded	Computational	Performs prerequisite checks for procedure.
▼ <a href="#">For all hosts</a>	Succeeded	Parallel	Iterates over a list of Hosts.
▼ <a href="#">For all homes</a>	Succeeded (2)	Rolling	Iterates over a list of Oracle Homes.
<a href="#">OHPreProcess</a>	Succeeded (2)	Computational	Initializes each Oracle Home. Do not disable or delete this s
<a href="#">Run opatch lsinventory</a>	Succeeded (2)	Directive	Run opatch lsinventory and set output in /home/oracle/loc /log/run_opatch_lsinventory_<SIDs>_<YYYYMMDD_HH24I
<a href="#">Run check SQL</a>	Succeeded (2)	Directive	Run check SQL per SID and set output in /home/oracle/loc /log/run_check_SQL_<SID>_<YYYYMMDD_HH24MISS>.oi
<a href="#">Upgrade OPatch</a>	Succeeded (2)	Job	Upgrades opatch to the latest version
<a href="#">Stage Patches</a>	Succeeded (2)	Job	Stages selected patches into Oracle Homes. Please ensure permissions in the Staging Location. Stage Location Exampl
<a href="#">Start Blackout</a>	Succeeded (2)	Computational	Starts Blackout of Oracle Database Instances in an Oracle H
<a href="#">Stop Database in Normal Mode</a>	Succeeded (2)	Directive	Stops Oracle Database instances in an Oracle Home in Norm
Stop CSS daemon		Directive	Stops CSS daemon running on the node. Requires sudo pri
Stop Services		Directive	Directive to shutdown the database services on the windo
Custom Prereq Check		Directive	Directive to check whether all the services of the database
<a href="#">Apply Patches</a>	Succeeded (2)	Directive	Applies staged patches in Oracle Homes.

# Demo

## Demo Resultaten

### Step Status

#### General Information

Step Name **Apply Patches**  
Type **Directive**  
Description **Applies staged patches in Oracle Homes.**  
Error Handling Mode **Stop On Error**  
Run Demo Patch Oracle Database oracle R1 R6  
Status **Succeeded (2)**  
Start Date **11-Sep-2010 13:05:52 MEST**  
Completed Date **11-Sep-2010 14:11:12 MEST**

#### Targets

[Select All](#) | [Select None](#)

Select	Target	Status	Note
<input type="checkbox"/>	emn-dbadb-ts1-01.tst.it.zesko.nl - emn-dbadb-ts1-01.tst.it.zesko.nl	Succeeded	
<input type="checkbox"/>	emn-dbadb-ts1-02.tst.it.zesko.nl - emn-dbadb-ts1-02.tst.it.zesko.nl	Succeeded	

 **TIP** The note field is only saved when an action is taken on the selected step.



# Demo

## Demo Resultaten

ORACLE Enterprise Manager  
Grid Control 11g

Home

Job Activity | Job Library

Procedure Completion Status > Status: Demo Patch Oracle Database Oracle R1 R6 > Step Status: Apply Patches >

**Job Run: APPLY\_PATCHES\_DIRECTIVE\_8F275FF9BD500472E04400144F9DB4D0**

### Summary

Status **Succeeded**  
Scheduled **11-Sep-2010 13:06:07 GMT+02:00**  
Started **11-Sep-2010 13:06:08 GMT+02:00**  
Ended **11-Sep-2010 13:23:27 GMT+02:00**  
Elapsed Time **17 minutes, 19 seconds**  
Notification **No**

De

Targets

Status

Go

[Expand All](#) | [Collapse All](#)

Name	Targets	Status	Started
Execution: emn-dbadb-ts1-01.tst.it.zesko.nl	emn-dbadb-ts1-01.tst.it.zesko.nl	Succeeded	11-Sep-2010 13:06:08
Step: Transfer binaries and properties file	emn-dbadb-ts1-01.tst.it.zesko.nl	Succeeded	11-Sep-2010 13:06:10
Task: Execute directive and clean up (Perl)	emn-dbadb-ts1-01.tst.it.zesko.nl	Succeeded	11-Sep-2010 13:06:14
Step: Remove timestamp	emn-dbadb-ts1-01.tst.it.zesko.nl	Succeeded	11-Sep-2010 13:06:16
Step: Check password policy for sudo. If status of this step is	emn-dbadb-	Succeeded	11-Sep-2010 13:06:19

# Demo

## Demo Resultaten

ORACLE Enterprise Manager  
Grid Control 11g

Job Activity | Job Library

Procedure Completion Status > Status: Demo Patch Oracle Database oracle R1 R6 > Step Status: Apply Patches > Job Run: APPLY\_PATCHES\_DIRECTIVE

### Step: Execute command using sudo

Status **Succeeded**  
Exit Code **0**  
Step ID **1088781**  
Targets **emn-dbadb-ts1-01.tst.it.zesko.nl**

Started **11-Sep-2010 13:06:20 GMT+02:00**  
Ended **11-Sep-2010 13:23:23 GMT+02:00**  
Step Elapsed Time **17 minutes, 3 seconds**  
Management Service **emn-dbadb-ts1-01.tst.it.zesko.nl:4889\_**  
 **TIP** Management Service from which the job step was dispatched.

#### Output Log

```
Step is being run by operating system user : 'oinstall'  
Run privilege of the step is : Sudo
```

```
All commands in the step are run (using sudo) as : /opt/sfw/bin/sudo -S,-u,oracle
```

```
This is Provisioning Executor Script
```

```
Input PropertyFilePath is /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/properties  
Input directiveScriptFilePath is /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0  
/pa_patch_oraclehome.pl  
Input directiveTypeProperty is NAME_Executor
```

# Demo

## Demo Resultaten

```
Execution of 'sh /var/tmp/YAMAHA/9655014/9655014/9655014/custom/scripts/post -apply 9655014 ':
```

```
Return Code = 0
```

```
The local system has been patched and can be restarted.
```

```
UtilSession: N-Apply done.
```

```
OPatch succeeded.
```

```
Sat Sep 11 13:23:22 2010 -
```

```
Apply of Interim Patch(es) successful
```

```
Sat Sep 11 13:23:22 2010 - Patching completed.
```

```
Cleaning up files after successful run...
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/pa_patch_oraclehome.pl
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/setup_env
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/provisioningUtil.pl
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/properties
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/invoke.pl
```

```
unlink /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0/invoke.sh
```

```
rmdir /var/tmp/PAF/Job_8f275ff9bd510472e04400144f9db4d0
```

```
Successfully deleted all leftover files and directories.
```

# Vragen

Dankwoord en gelegenheid tot het stellen van vragen

- Bedankt voor de aandacht
- Tijd voor vragen

