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**Oracle Enterprise Manager Grid Control 10g
Daylight Savings Time Patching Overview and Process**



Contents

- **Background:** Why is patching be required at all?
 - **What** needs to be patched (and what doesn't)?
 - **Impact of not patching** & what to do about it
 - **Agent Patching:** Rolling-out the agent patches
 - **Where to find patch details** for your specific environment
-
- *Note: This presentation covers patching of Enterprise Manager 10.1.0.X and 10.2.0.X*
 - *For Enterprise Manager 9.2.0.X refer to Metalink Note 415057.1*



Background: Daylight Savings Time Changes

Why Patching May Be Required

- Under the Energy Policy Act of 2005 the American and Canadian governments announced changes to the 2007 daylight savings transition (DST) dates.
 - Various other countries have followed
- The new transition date to DST will be the second Sunday in March, which is Sunday, March 11th, 2007.
- The daylight savings time will also end one week later in November
- ***Any application that relies on the use of time zone information could be affected by the change to the daylight savings time transition.***



What Time Zones Are Affected?

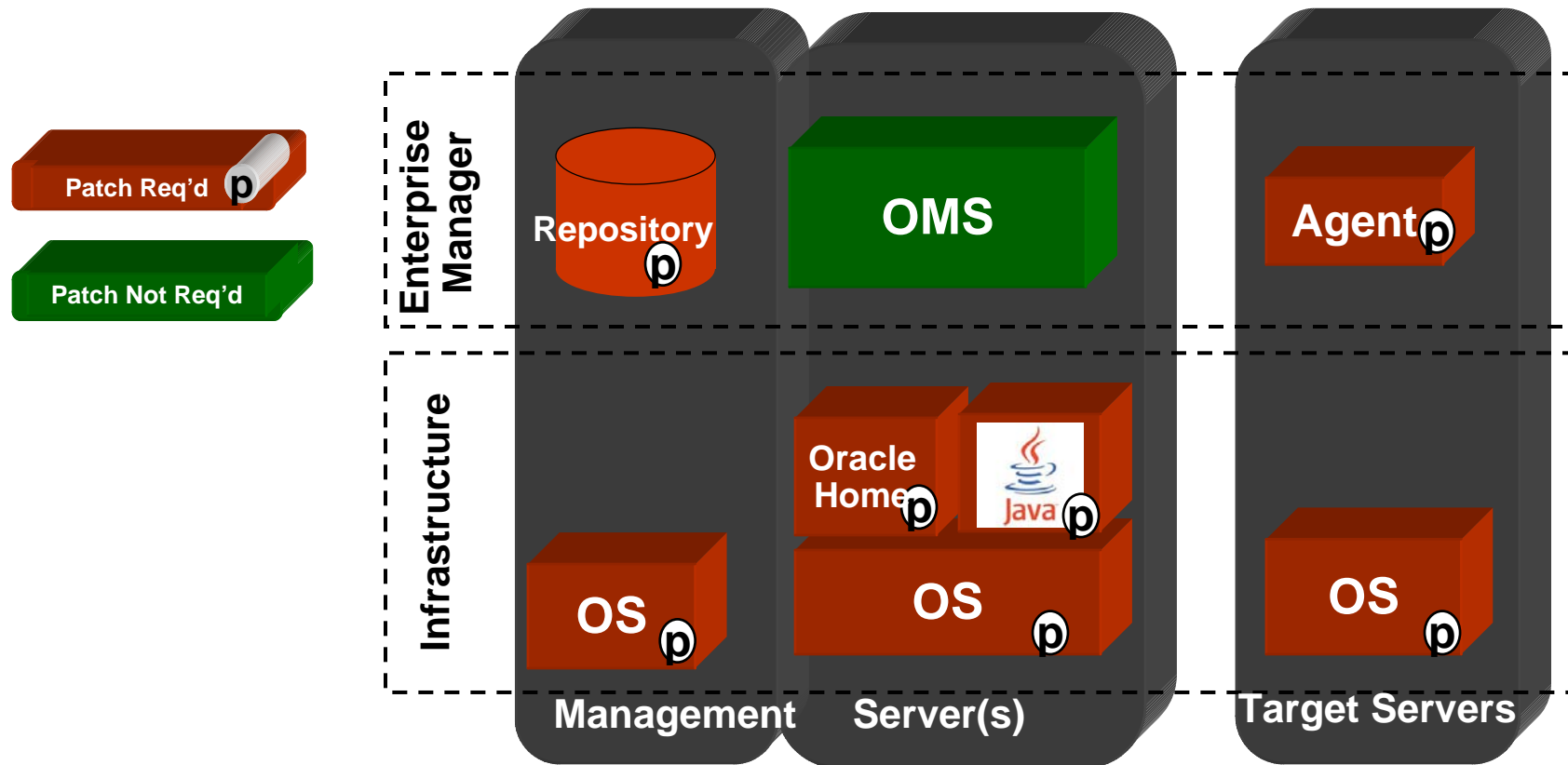
- Major time zones adopting these changes:
 - United States & U.S. Territories
 - Canada
 - Bermuda
 - Western Australia
 - Other geographies may be affected based on on-going governmental adoption of this change
 - *Note: As of this time, Mexico has NOT adopted these changes*



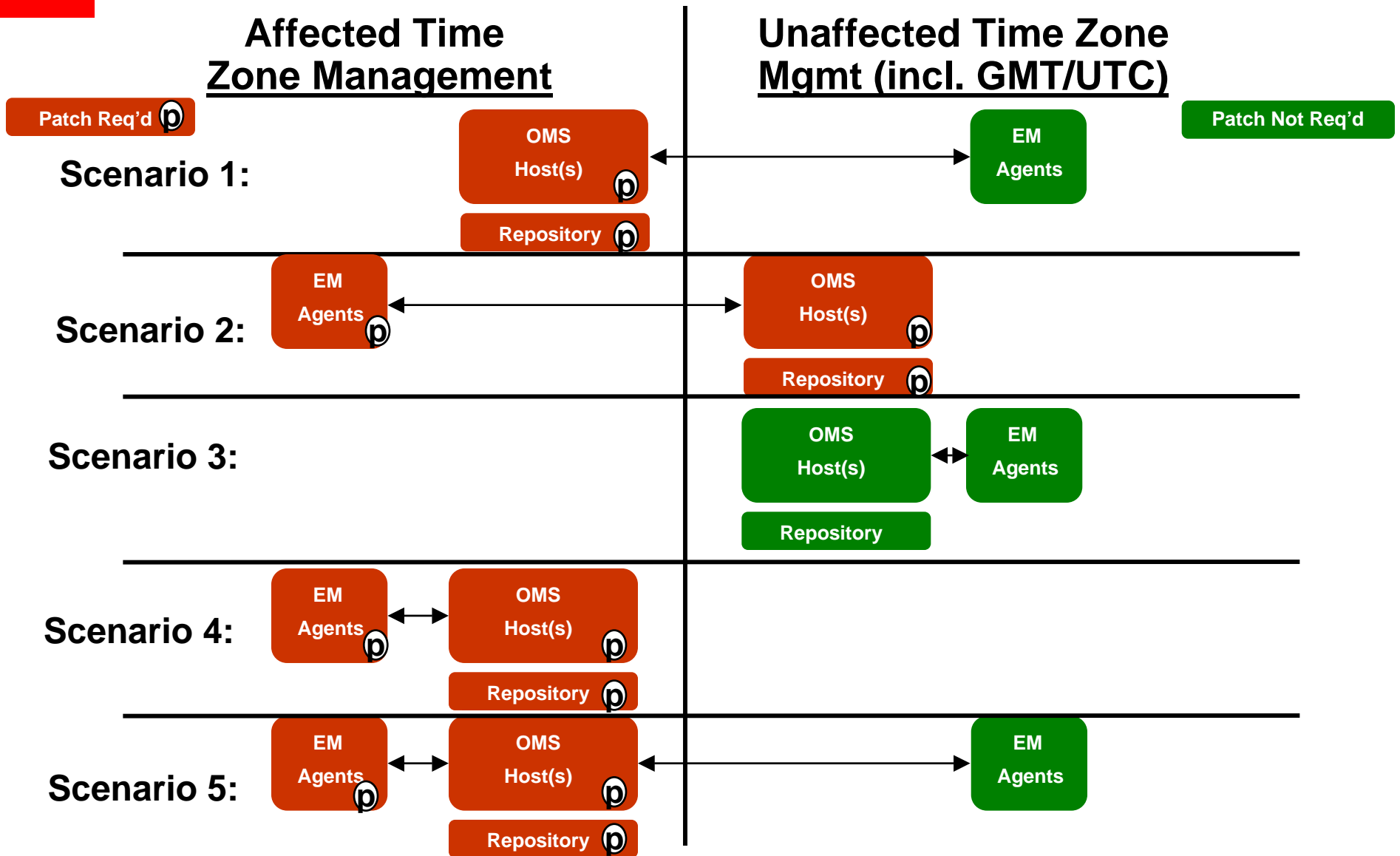
What May Need Patching?

- In general, if any of servers with an EM agent installed are to be managed as part of any of the affected time zones, EM will need to be patched
 - If even one agent/agent host is patched, then the OMS host server and repository DB/host server will need to be patched
- ***If these components are not made DST compliant some timed activities may occur at the incorrect time.***

Oracle Enterprise Manager What May Need Patching?



Overview: What May Need Patching?





OMS Host Servers & Repository

- Recommend patching of OMS host servers and Repository DB by default
 - Must be patched if EM itself or any target server is managed as part of an affected-time zone
- OMS software itself does not require patching but upgrade/patching of the following components is required
 - Repository DB for OMS
 - Oracle OMS Home Core Required Support Files
 - OMS host server JRE (Java Runtime Environment)
 - OMS host OS (OS vendor patches)
 - Also Repository DB host OS if separate from OMS host



Target Host Servers with EM Agents

- Must patch if any targets, including the host server/OS will be managed as a part of the affected time zone
 - Includes agents for remotely monitored targets, i.e. targets that are not located on the same host server as the agent
 - Examples: Storage and network devices or other targets with a remote management option such as SQL Server
- Beacon agents for Service Level Management should be patched by default due to dependence on Service timestamps



Summary: When Don't I Have to Patch?

- No patching is required **if** the OMS and related repository DB...
 - Are not being managed as a part of an affected time zone, AND...
 - Are not managing **any** agents as a part of an affected time zone
- Agent patching is not required...
 - If the Agent server/targets are not being managed (remotely or locally) as a part of an affected time zone
- Remember to consider your physical architecture:
 - You may have multiple OMS servers in a single EM instance
 - You may have the repository on a separate server from the OMS
 - You may have a multiple server node RAC server for a repository
 - You may have replicated DR/failover sites that need to be patched



Summary: Impact of Not Patching

- If OMS and/or repository are not patched...
 - Jobs and black-outs will not work as expected (wrong times)
 - Change Time Zone feature may not work properly
- If agents are not patched but are managed as part of an affected time zone:
 - The agent may not start correctly if the OS has been patched but the agent has not (or vice versa)
 - Severities (Critical and Warning messages) and notifications will be recorded at the wrong times
- Patching of EM post-March 11 but prior to the first Sunday in November should result in the correct reporting of current and historical data
 - No other action is required for remediation
 - Impact of patching after DST period in November currently being investigated



Special Considerations for EM 10.2.0.3 Using 10.2.0.3 to Manage In An Affected Time Zone

- EM 10.2.0.3 includes some DST patches, potentially reducing, but not eliminating, the amount of patching required as follows:
- OMS host servers upgraded to EM 10.2.0.3:
 - OS vendor and JRE patches still required
 - U.S. time zone basis only: no additional patching required (Version 3 zones included)
 - Non U.S. affected time zone management: must apply Version 4 Oracle Core Required Support Files to OMS Home
 - Note: 10.2.0.3 or other DST patched repository required for 10.2.0.3 OMS
- Repository upgraded to EM 10.2.0.3:
 - OS vendor patches still required
 - U.S. time zone basis only: no additional patching (Version 3 zones included)
 - Non U.S affected time zone management: apply Version 4 DST DB patch
- Agent:
 - OS vendor patches still required
 - U.S. time zone basis only: no additional patching (Version 3 zones included)
 - Non U.S. affected time zone management: apply Version 4 DST agent patch



Other Tips

- If you haven't started patching yet...
 - Verify you have the Oracle patches with the latest time zone files
 - Currently "Version 4" patches are the latest available
- If you have already applied "Version 3" patches:
 - No additional patching is required if you are only managing on a U.S. time zone basis
 - If you are managing as part of an other (non U.S.) affected timezone (e.g. Canada, Australia, etc.):
 - Apply the latest, (Version 4) patches
 - Applying Version 4 patches to Version 3 patched hosts does not cause any issues



Other Tips

- Using the EM Console to Apply agent patches
 - Application of agent patches from the EM console requires different patch numbers from normal oracore/rdbms patch (see following slides and support notes for details)
- Testing:
 - ***Important Note: Do not test in a production environment by rolling dates ahead prior to March 11***
 - Results in future timestamps causing EM to ignore metric data between the rollback to current date and March 11

Patching Process Summary

<p>1. Patch all Operating Systems for DST 2007</p>	<ul style="list-style-type: none"> • Get these patches from your OS Vendor • OMS, Repository, and Agent Host Servers
<p>2. Upgrade/Patch Repository Database</p>	<ul style="list-style-type: none"> • May need to update DB version before applying DST patch • Version 3 files (U.S.): <ul style="list-style-type: none"> • Oracle Patch 4689959 • Version 4 files: (Ver3 + Canada, W. Australia) <ul style="list-style-type: none"> • Oracle Patch 5632264
<p>3. Patch the OMS JRE and Oracle Core Required Support Files</p>	<ul style="list-style-type: none"> • Java JRE updates available from your OS vendor or Sun Microsystems • CORE file patches from Oracle: • For EM 10.1.0.x with 9.0.1.5.0 Core files: <ul style="list-style-type: none"> • Oracle Home Patch 5632264 • Note: Must be applied to OMS Home if separate from the Repository DB Home • For EM 10.2.0.x with 10.1.0.x Core files: <ul style="list-style-type: none"> • Database patch 4505133 (patchset 10.1.0.5) • Oracle OMS Home Patch 5632264
<p>4. Patch the agents as described in the following slides</p>	<ul style="list-style-type: none"> • Version 3 agent patch: 5872134 • Version 4 agent patch: 5884103

DST Agent patches – Availability Matrix as-of 26 Feb '07

Version 4		Patch No:5884103		Version3	Patch No:5872134
10.1.0.5	10.2.0.2	10.2.0.3		10.1.0.5	10.2.0.2
Linux x86	Linux x86	Linux x86		Linux x86	Linux x86
Linux x86-64	Linux x86-64	Linux x86-64		Linux x86-64	Linux x86-64
	Linux-IA64				
					Linux-zSer
Solaris-64	Solaris-64	Solaris-64		Solaris-64	Solaris-64
					Solaris86-64
win32		win32		win32	win32
		Win64		Win64	Win64
		MSWIN-x86-64			MSWIN-x86-64
HPUX_64	HPUX_64			HPUX_64	HPUX_64
HPUX_IA64	HPUX_IA64				HPUX_IA64
AIX5L	AIX5L				AIX5L
					Tru64

- Version 4 DST = Version 3 DST + Fixes specific to Canada + western Australia.
- If the targets are in US, it is enough if you apply Version 3 DST
- Applying/reapplying the Version 4 DST on top of Version 3 will not cause problems



Agent Patch Selection

- Select the Version 4 DST (5884103) Patch
 - Ver4 DST includes Ver3 changes
 - If the affected target is in US and the platform or version is not available use the Version 3 DST (5872134)

Reference : Step 7 of Metalink Note : 409225.1



Agent Patching Method Options

- Automated Application from the EM Console :
 - If the patch is available on your platform and version
 - Use Connected or Disconnected mode from Enterprise Manager
- Manual Application options:
 - 'opatch' Apply :
 - If you are not able to upgrade your agents to the version in which the patches are available
 - Manual Copying of DST Files:
 - If you are not doing the manual opatch apply because of reasons ranging from opatch package not found or the patch is not available in the version you are looking for
 - Bounce the Agent on copying of the files for the changes to take effect

Reference : Step 7 of Metalink Note : 409225.1



Applying Agent DST Patches from the EM Console



DST Patching

- Oracle OMS Home cannot be patched from the console
 - Use opatch from the OMS ORACLE_HOME
- Agent can be patched from the console



Agent Patching: Online Mode

- Assumes OMS is configured with *Metalink* connection
 - Go to Setup->Patching Setup and configure *Metalink* credentials and proxy.
 - Test the connection from "Proxy and Connection settings"
- Go to Deployments tab->Patch Oracle Software
 - The patch once selected will be automatically downloaded from *Metalink*

Search Patch

- Search for patch 5884103

The screenshot shows the Oracle Enterprise Manager 10g Grid Control interface. At the top, there is a navigation bar with tabs for Home, Targets, Deployments (selected), Alerts, Compliance, Jobs, and Reports. Below this is a sub-navigation bar with 'General' and 'Provisioning'. A progress indicator shows six steps: Select Patch (active), Select Destination, Set Credentials, Stage or Apply, Schedule, and Summary. The main content area is titled 'Patch: Select Patch' and includes a 'Cancel' button, 'Step 1 of 6', and a 'Next' button. A text block explains that users should enter search criteria at Oracle MetaLink and click Search. It also mentions advanced features like multiple patch application and PAM support, with a link to 'Deployment Procedures' documentation. Below this is a 'Search by Number' section with a 'Search by Criteria' button. The search form includes a 'Patch Number' field with '5884103', a 'Platform' dropdown menu set to 'Any', and a 'Language' dropdown menu set to 'Any'. A note below the Platform dropdown states: '(If you run a 32-bit Oracle product on a 64-bit operating system, choose a 32-bit platform.)'. At the bottom of the search form are 'Search' and 'Clear' buttons.

ORACLE Enterprise Manager 10g
Grid Control

Home Targets **Deployments** Alerts Compliance Jobs Reports

General | Provisioning

Select Patch Select Destination Set Credentials Stage or Apply Schedule Summary

Patch: Select Patch Cancel Step 1 of 6 Next

To look up patches at OracleMetaLink, enter search criteria and click Search. This may take a few moments depending on the number of matches found. From Search Results, select the patch to be applied and click Next.

For advanced features like multiple patch application, patch flow customization, sudo and PAM support please use the "[Deployment Procedures](#)" functionality. For details on Deployment Procedures, consult the relevant [documentation](#)

Search by Number Search by Criteria

* Patch Number

Platform ▼
(If you run a 32-bit Oracle product on a 64-bit operating system, choose a 32-bit platform.)

Language ▼

Select patch

- Select the patch for your platform and version
 - Example shown: Agent version 10.2.0.3 on Linux x86

ORACLE Enterprise Manager 10g
Grid Control

Home Targets **Deployments** Alerts Setup Preferences Help Logout
Compliance Jobs Reports

General | Provisioning

Select Patch Select Destination Set Credentials Stage or Apply Schedule Summary

Patch: Select Patch

Cancel Step 1 of 6 Next

To look up patches at Oracle MetaLink, enter search criteria and click Search. This may take a few moments depending on the number of matches found. From Search Results, select the patch to be applied and click Next.
For advanced features like multiple patch application, patch flow customization, sudo and PAM support please use the "Deployment Procedures" functionality. For details on Deployment Procedures, consult the relevant [documentation](#).

Search by Number

Search by Criteria

Patch Number: 5884103
Platform: Any (If you run a 32-bit Oracle product on a 64-bit operating system, choose a 32-bit platform.)
Language: Any

Search Clear

Search Results

View Details View ReadMe Previous 1-10 of 20 Next 10

Select	Patch Number	Created On	Type	Product	Platform	Release	Interim Patch Applicable On	Description	Status
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Solaris Operating System (SPARC 64-bit)		10.2.0.2	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	HP-UX Itanium		10.2.0.2	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	HP-UX PA-RISC (64-bit)		10.1.0.5	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	AXSL Based Systems (64-bit)		10.2.0.2	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Linux x86-64 (AMD64/EM64T)		10.2.0.2	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Linux x86-64 (AMD64/EM64T)		10.2.0.3	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Linux x86		10.1.0.5	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	HP-UX Itanium		10.1.0.5	DST BUG 5632264 FOR AGENT	available
<input checked="" type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Linux x86		10.2.0.3	DST BUG 5632264 FOR AGENT	available
<input type="radio"/>	5884103	Feb 22, 2007	Patch	Intelligent Agent	Linux x86-64 (AMD64/EM64T)		10.1.0.5	DST BUG 5632264 FOR AGENT	available

Select destination

- Targets that match the patch metadata are automatically pre-selected

The screenshot displays the Oracle Enterprise Manager 10g Grid Control interface. At the top, there is a navigation bar with tabs for Home, Targets, Deployments (selected), Alerts, Compliance, Jobs, and Reports. Below this is a sub-navigation bar with 'General' and 'Provisioning' tabs. A progress indicator shows six steps: Select Patch, Select Destination (current), Set Credentials, Stage or Apply, Schedule, and Summary.

The main content area is titled 'Patch: Select Destination'. It includes a breadcrumb trail: Cancel > Back > Step 2 of 6 > Next. Below this is a descriptive paragraph: 'The available targets have been filtered by the *target type*, the *platform*, the *release*, and the *address size* of the operating system platform. If there are no available targets to choose from or you want to specify a host location to stage your patch to, choose Host and Directory from the Destination Type choices.'

Metadata for the current patch is shown:

- Release: 10.2.0.3
- Platform: Linux x86
- Address Size: 32-bit Operating System
- Selected Patch: 5884103

The 'Destination Type' is set to 'Agent Targets' via a dropdown menu. Below this, there is a 'View' section with a dropdown set to 'All Targets' and a 'Go' button.

The interface is divided into two main panels:

- Available Targets:** A list of ten targets, all marked as '(Unpatched)'. The targets are: stang14.us.oracle.com:1831, stang13.us.oracle.com:3872, stang02.us.oracle.com:1830, staca29.us.oracle.com:3872, stacc04.us.oracle.com:3872, stado63.us.oracle.com:3872, stams03.us.oracle.com:3872, stamt18.us.oracle.com:3872, stanb12.us.oracle.com:3872, and stapp04.us.oracle.com:1834.
- Selected Targets:** An empty list box.

Between these two panels are four action buttons: 'Move' (right arrow), 'Move All' (right arrow with plus), 'Remove' (left arrow), and 'Remove All' (left arrow with plus).

Select destination

- Specify credentials
 - You can specify credentials for each home or the same credentials for all agent homes (depending on your environment)
 - At this point agent patching does not support sudo/pbrun for switching users

The screenshot shows the Oracle Enterprise Manager 10g Grid Control interface. The top navigation bar includes 'Home', 'Targets', 'Deployments', 'Alerts', 'Compliance', 'Jobs', and 'Reports'. The 'Deployments' tab is active. Below the navigation bar, a progress bar shows six steps: 'Select Patch', 'Select Destination', 'Set Credentials', 'Stage or Apply', 'Schedule', and 'Summary'. The 'Set Credentials' step is currently selected and highlighted in blue. Below the progress bar, the page title is 'Patch: Set Credentials'. There are buttons for 'Cancel', 'Back', 'Step 3 of 6', and 'Next'. An 'Information' section contains the following text: 'Agent check information - You are trying to patch agent(s) in standalone mode. It is strongly recommended that you perform patching as the operating System user that did the install. Patching as other user may cause unpredictable behavior. The patch will be staged to the **EMStagedPatches/5884103** subdirectory of the Oracle home or Staging Directory of the selected Host. Supply a username and password to allow Enterprise Manager to have read and write access to stage the patch. When overriding credentials, select the option to override for All Homes with a single credential or Each Home with different credentials.' Below this text, there are two radio buttons: 'Override Oracle Home Preferred Credentials' (which is selected) and 'Use Oracle Home Preferred Credentials'. A dropdown menu labeled 'Specify Credentials For' is set to 'All Homes'. There are two input fields: 'Username' with the value 'agentuser' and 'Password' with masked characters '*****'.

Select action

- You can specify pre and post patching scripts if you wish to

The screenshot shows the Oracle Enterprise Manager 10g Grid Control interface. The top navigation bar includes 'Home', 'Targets', 'Deployments', 'Alerts', 'Compliance', 'Jobs', and 'Reports'. The 'Deployments' tab is active, and the 'Stage or Apply' step is highlighted in the process flow. The main content area is titled 'Patch: Stage or Apply' and contains the following options:

- Stage: The patch will be downloaded to the **EMStagedPatches/5884103** subdirectory of the Oracle home.
- Apply: The patch will be downloaded to the **EMStagedPatches/5884103** subdirectory and then applied to the Oracle home. Be sure to review the patch ReadMe to determine the steps to apply the patch. Custom scripts can be optionally executed in the Pre-Patch and Post-Patch steps. [View ReadMe](#)

Apply Patch from Staged Location (optional)

Staged Location

Step 1: Pre-Patch (optional)

Custom Pre-Command/Script Use sudo

Step 2: Patch

- Use default patching script
- Provide custom patching script

Step 3: Post-Patch (optional)

Custom Post-Command/Script Use sudo

TIP There are variables for target properties that can be used for parameters to any of the scripts above or for any directory location.

[Hide Variables for Target Properties](#)

Specify schedule

- You can specify the schedule for patch application

The screenshot displays the Oracle Enterprise Manager 10g Grid Control interface. At the top, there is a navigation bar with tabs for Home, Targets, Deployments (selected), Alerts, Compliance, Jobs, and Reports. Below this is a sub-navigation bar with 'General' and 'Provisioning' tabs. A progress indicator shows six steps: Select Patch, Select Destination, Set Credentials, Stage or Apply, Schedule (current step), and Summary. The main content area is titled 'Patch: Schedule' and includes a breadcrumb trail: Cancel > Back > Step 5 of 6 > Next. A text block states: 'A job will be submitted with the following default name and description. This name is referenced in the Jobs table. You can optionally change the default values.' Below this, there are two input fields: 'Job Name' with the value 'Patch Job 2/25/07 9:26 AM' and 'Description' with the value 'Apply 5884103 to stang14.us.oracle.com:1831, stang13.us.oracle.com:3872, stang'. The 'Schedule Patch Job' section follows, with instructions: 'Specify when you would like the patch to be applied. You can apply the patch now or schedule a future date and time.' There are two radio buttons: 'Immediately' (selected) and 'Later'. Under 'Later', there is a 'Date' field with the value '2/25/07' and a calendar icon. Below the date is an example '(Example: 12/15/02)'. The 'Time' field consists of two dropdown menus for hours and minutes, currently showing '9' and '25', followed by radio buttons for 'AM' (selected) and 'PM'. The 'Time Zone' field is a dropdown menu showing '(UTC-08:00) Canada Pacific Time (PST)'.



Agent Patching: Offline Mode

- Use this method when the OMS does not have connection with *Metalink*
- Download patch 5884103 for the right Agent version and platform and save the zip file on your desktop
- On EM console go to Deployments->View Patch Cache->Upload Patch File
 - You can now upload the saved zip file to the patch cache, select the patch and invoke the patching wizard
- **IMPORTANT:** It is important to key in the right information for the targets to be selected automatically (See screenshot in the next page)
- For details on Offline patching see:
 - http://www.oracle.com/technology/products/oem/pdf/patching_r2.pdf

Upload to Patch Cache

- Note that the zip file has a number(5632264) different from the patch number (5884103). Ignore this.

The screenshot shows the Oracle Enterprise Manager 10g Grid Control interface. The top navigation bar includes links for Home, Targets, Deployments, Alerts, Compliance, Jobs, and Reports. The main content area is titled "Add Patch File to Patch Cache" and contains the following fields and options:

- Patch File:** A text input field containing "C:\p5632264_10203_LINUX.zip" and a "Browse..." button. Below the field is the text "Example: patchFileName.zip".
- Patch Attributes:** A section with the instruction "It is important that you carefully review the ReadMe file. The ReadMe file may contain the attribute information required below." and several input fields:
 - Patch Number:** 5884103
 - Patch Type:** Patch (dropdown menu)
 - Created On:** 2/25/07 (calendar icon)
 - Description:** Agent DST patch
 - Product Family:** Oracle System Management Products (dropdown menu)
 - Product:** Intelligent Agent
 - Release:** 10.2.0.3
 - Platform:** Linux x86 (dropdown menu)
 - Language:** American English (dropdown menu)
 - Comments:** (empty text area)
- Buttons:** "Cancel" and "Upload" buttons are located at the top right of the form.
- Checkbox:** "Create Oracle Software Update Component" checkbox is located at the bottom of the form.

Results Verification

- The Job results page will show the status for all the targets that are getting patched
 - Drill downs available for each target (see screenshot below)

Grid Control Home Targets Deployments Alerts Compliance **Jobs** Reports

Job Activity | Job Library

Execution: [stacg14.us.oracle.com](#) Page Refreshed Feb 25, 2007 9:44:38 AM PST

Summary

Status	Succeeded	Type	PatchAgentTargets
Scheduled	Feb 25, 2007 9:40:34 AM (UTC-08:00)	Owner	SUPER
Started	Feb 25, 2007 9:40:34 AM (UTC-08:00)	Description	Apply 5884103 to stacg14.us.oracle.com:3872
Ended	Feb 25, 2007 9:42:46 AM (UTC-08:00)		
Elapsed Time	132 seconds		
Notification	No		

Apply Patch Results

Staged Patch Location	Host	Agents	Listeners	Status	Telnet
/scratch/sdatta/product/10.1.0/em/agent10g/EMStagedPatches/5884103	stacg14.us.oracle.com	stacg14.us.oracle.com:3872		✓ Succeeded	

Targets:
 Status:

Name	Targets	Status	Started	Ended	Elapsed Time (seconds)
Execution: stacg14.us.oracle.com	stacg14.us.oracle.com	Succeeded	Feb 25, 2007 9:40:34 AM (UTC-08:00)	Feb 25, 2007 9:42:46 AM (UTC-08:00)	132
▶ Task: StageAgentPatchTargetsJob	stacg14.us.oracle.com	Succeeded	Feb 25, 2007 9:40:36 AM (UTC-08:00)	Feb 25, 2007 9:40:57 AM (UTC-08:00)	21
Step: prereqCheck	stacg14.us.oracle.com	Succeeded	Feb 25, 2007 9:40:59 AM (UTC-08:00)	Feb 25, 2007 9:40:59 AM (UTC-08:00)	0
▶ Task: PatchAgentJob	stacg14.us.oracle.com	Succeeded	Feb 25, 2007 9:40:59 AM (UTC-08:00)	Feb 25, 2007 9:42:46 AM (UTC-08:00)	107



For More Information

- For full details on the patching process and related information, refer to the following support notes:
 - Enterprise Manager 9.2.0.X: See Metalink note 415057.1
 - EM 10.1.0.x: See Metalink note 415701.1
 - EM 10.2.0.x: See Metalink note 409225.1