How to Apply Oracle Patch on Windows Platform

Step by Step Commands and Scripts

Asfaw Gedamu

25/04/2024

Applying an **Oracle patch** on a **Windows platform** involves several steps. Let's walk through the process:

1. **Prerequisites**:
    - Ensure you have the necessary permissions and backups in place.
    - Download the patch from the official Oracle website.
2. **Shutdown Services**:
    - Stop all Oracle services, including the database and listeners.
3. **Apply the Patch**:
    - Unzip the downloaded patch file.
    - Navigate to the patch directory.
    - Use the **OPatch** utility to apply the patch:
    - opatch apply
4. **Post-Installation Steps**:
    - After applying the patch, execute any required post-installation scripts (such as **datapatch**).
    - Restart the database services and listeners.
5. **Verification**:
    - Verify that the patch was successfully applied.
    - Check for any invalid objects or issues.

Purpose: This guide outlines the steps for applying an Oracle patch on a Windows platform.

Scope: This applies to database administrators responsible for patching Oracle databases on Windows servers.

Assumptions:

- You have downloaded the appropriate patch for your Oracle version and platform.
- You have a basic understanding of Oracle and Windows server administration.
- You have reviewed the patch readme for specific instructions and prerequisites.

Remember:

- Before applying any patch, it's important to create a backup of your system.
- Carefully review the readme file associated with the patch for specific instructions and known issues.
- It's recommended to test the patch in a non-production environment before applying it to your production system.
- If you're not comfortable applying the patch yourself, you can contact Oracle Support or a qualified DBA for assistance.

Procedure:

1. Set oracle_home,patch_home, PATH and ORACLE_SID

```
SET ORACLE_HOME=E:\oracle\11.2.0\dbhome_1
SET PATH=E:\oracle\11.2.0\dbhome_1\bin;E:\oracle\11.2.0\dbhome_1\opatch;%PATH%
SET ORACLE_SID=ORCL
SET PATH=%ORACLE_HOME%\perl\bin;%PATH%
```

2. Check the Patch compatibility.

Go to patch location where it downloaded, unzip it.

```
cd E:\patch
opatch prereq CheckConflictAgainstOHWithDetail -ph ./20233168
```

3. Check the Opatch lsinventory detail

It will give you the already applied patch list

```
opatch lsinventory -detail
```

4. Check the opatch version and check the README of the patch you downloaded.

— Check that your opatch version is greater or same as mentioned in README.

```
opatch version
```

5. Take a snapshot of Oracle Services from SERVICE.MSC

6. Stop the listener.

```
-- Check status of listener
lsnrctl status
-- Stop the listener
lsnrctl stop
```

7. Take the backup of database (optional)

```
run {
allocate channel ch00 type disk;
allocate channel ch01 type disk;
allocate channel ch02 type disk;
backup format 'F:\rman\full_db_%t_%sp%p' filesperset 10 database plus archivelog;
release channel ch00;
release channel ch01;
release channel ch02;
allocate channel ch00 type disk;
backup format 'F:\rman\cntrl_%s_%p_%t' CURRENT CONTROLFILE;
backup format 'F:\rman\spfile_%s_%p_%t' spfile;
release channel ch00;
}
```

8. Create pfile as current Spfile.

```
create pfile='E:\oracle\initpfile.ora' from spfile;
```

9. Check the invalid objects before patching

```
select count(*) from dba_objects where status='INVALID';
```

10. Check the registry$history table for check already patching history.

```
-- Used in case of 11g version
col action_time for a28
col action for a6
col version for a8
col comments for a30
set line 999 pages 999
select action_time,action,version,comments from registry$history;
-- Used in case of 12c version
col action_time for a28
col action for a6
col version for a8
col comments for a30
set line 999 pages 999
select patch_id, version, status, Action, Action_time from dba_registry_sqlpatch order by
action_time;
```

11. Check the DBA Registry component is valid before patching:

```
col comp_id for a10
col version for a10
col status for a7
col comp_name for a50
select comp_id,comp_name,version,status from dba_registry;
```

12. Shutdown the database:

```
shutdown immediate;
```

13. Take the services down in Windows platform:

```
–You can do from services.msc as well

net stop OracleServiceIC
net stop OracleDBConsoleIC
net stop OracleJobSchedulerIC
net stop "Oracle IC VSS Writer Service"
net stop OracleREMExecService
net stop "Oracle Object Service"
net stop ocfs (required only for OCFS installation)
net stop OraFenceService
net stop OracleMTSRecoveryServicenet stop msdtc
net stop winmgmt
sc config Winmgmt start= disabled
```

14. Take the backup of Oracle home

–copy and paste in another folder for backup

15. Take the backup of Oracle Inventory

–copy and paste in another folder for backup

16. Apply the patch

Go to patch directory

```
--Follow the readme steps for Installation the patch
cd 20233168
opatch apply
```

17. Check the opatch log file generated at %ORACLE_HOME%\cfgtoollogs\opatch for error
18. Start the Oracle database Service for Post installation steps mentioned in readme.
19. Execute the Post steps for bundle patch:

```
-- In 11g readme steps need to follow for each patch have different steps:
cd %ORACLE_HOME%\Bundle\Patch36
STARTUP
SQL> @catwinbundle.sql
SQL> QUIT
-- In 12c readme steps need to follow:
cd %ORACLE_HOME%\opatch
datapatch -verbose
```

20. Check the log files for errors:

```
$ORACLE_BASE/cfgtoollogs/catbundle
catbundle_WINBUNDLE__APPLY_.log
catbundle_WINBUNDLE__GENERATE_.log
```

21. Compile the invalid objects and verify with before patching count:

```
cd %ORACLE_HOME%\rdbms\admin
sqlplus /nolog
CONNECT / AS SYSDBA
@utlrp.sql
select count(*) from dba_objects where status='INVALID';
```

22. Check the db_registry:

```
col comp_id for a10
col version for a10
col status for a7
col comp_name for a50
select comp_id,comp_name,version,status from dba_registry;
```

23. Verify the registry$history table for patch applied:

```
-- Used in case of 11g version
col action_time for a28
col action for a6
col version for a8
col comments for a30
set line 999 pages 999
select action_time,action,version,comments from registry$history;


-- Used in case of 12c version
col action_time for a28
col action for a6
col version for a8
col comments for a30
set line 999 pages 999
select patch_id, version, status, Action, Action_time from dba_registry_sqlpatch order by
action_time;
```

24. Start the oracle and windows Services.

```
--you can start from services.msc window
net start OracleServiceIC
net start OracleDBConsoleIC
net start OracleJobSchedulerIC
net start "Oracle IC VSS Writer Service"
net start OracleREMExecService
net start "Oracle Object Service"
net start ocfs (required only for OCFS installation)
net start OraFenceService
net start OracleMTSRecoveryServicenet start msdtc
net start winmgmt
```

25. Check the listener connectivity

```
sqlplus sys@IC as sysdba
```

Rollback plan:

1. Copy the old oracle home back.

- Use a reliable file transfer tool to copy the entire old Oracle home directory to the new location.

- Ensure all permissions and ownership are preserved during the copy process.

2. Restore the database backup

```
--RMAN restore Script

run{
allocate channel t1 type DISK;
set until time "to_date('2015/02/27 12:52:00','yyyy/mm/dd HH24:MI:SS')";
restore controlfile from 'F:\rman\cntr_18_1';
```

```
release channel t1;
}alter database mount;
run {
allocate channel t1 type DISK;
set until time "to_date('2015/02/27 12:52:00','yyyy/mm/dd HH24:MI:SS')";
restore database;
release channel t1;
}
run {
allocate channel t1 type DISK;
set until time "to_date('2015/02/27 12:52:00','yyyy/mm/dd HH24:MI:SS')";
recover database;
release channel t1;
}
alter database open resetlogs;
```

Notes:

- This guide is a general guideline and may need adjustments based on your specific environment and patch requirements.
- Always consult the patch readme for detailed instructions and potential variations.
- Thoroughly test patching in a non-production environment before applying to production systems.
- Document the entire patching process and maintain rollback plans for potential issues.
- Consider scheduling patching during off-peak hours to minimize downtime.

By following these steps and adapting it to your specific needs, you can ensure a smooth and successful Oracle patch application on your Windows platform. Remember to prioritize data integrity and maintain rollback plans throughout the process.

References:

Here are some resources on how to apply Oracle patches on Windows platforms:

Official Oracle Documentation:

- **Installing and Applying Oracle Patch Sets:** https://docs.oracle.com/en/industries/life-sciences/argus-safety/8.4.1/aeoao/install-and-apply-oracle-patch-set.html
- **OPatch User's Guide:** https://docs.oracle.com/cd/E91266_01/OPTCH/toc.htm
- **OPatch Command Reference:** https://docs.oracle.com/cd/E24628_01/doc.121/e39376/opatch_commands.htm
- **Downloading and Installing Patch Updates:** https://docs.oracle.com/database/apex-5.1/HTMIG/downloading-andinstalling-patches.htm

Third-Party Tutorials and Guides:

- **How to apply Oracle Patch in windows #patch #oracle #oracledba:** https://www.youtube.com/watch?v=ODyzpwz115M
- **Apply Oracle Patch on Windows Server 2012 - Step by Step Guide:** https://m.youtube.com/watch?v=60ZAU_h0tLA
- **Patching Your Environment Using OPatch - Oracle Help Center:** https://docs.oracle.com/middleware/12211/lcm/OPATC/GUID-56D6728D-5EDC-482B-B2E4-DDB20A64FA32.htm
- How to Patch Oracle Database 19c on Windows (DBRU 19.14): A step-by-step guide on how to patch Oracle Database 19c on Windows using the Database Release Update (DBRU) 19.14.

Additional Resources:

- **Oracle My Oracle Support:** https://support.oracle.com/
- **Oracle Technology Network (OTN):** https://www.oracle.com/technical-resources/
- **DBA Stack Exchange:** https://dba.stackexchange.com/