Staged APPL_TOP approach - Key to achieve tolerable downtime for Oracle Apps migrations

Nikhil Kumar
Infosys Technologies Limited

Nagarjuna Cherukuri
Navo Systems Inc.

Learning Objectives

- As a result of this presentation you will be able to:
  - Appreciate the need and benefits of Staged APPL_TOP approach for Oracle Apps migrations
  - Understand the basic concepts of the approach
  - Learn the pre-requisites, step by step procedure to implement staged APPL_TOP
  - Understand the challenges and limitations of the approach

Speaker's Qualifications

- Nikhil is a Principal Consultant in Enterprise Solutions group of Infosys Technologies Limited
- Nikhil has around 12 years of IT management & implementation experience including 8 years in Oracle Applications package implementation and migration projects in a global, distributed team model of a consulting service environment
- Nikhil is also a Certified Professional Consultant for Oracle E-Business Suites 11i Financials
- Infosys Technologies Limited (NASDAQ: INFY) is a global leader in Consulting and IT services
- Enterprise Solutions (ES) group at Infosys provides Consulting and End-to-End implementation solutions for almost all the ERP packages
- Oracle Applications practice in ES provides Oracle Consulting services to world's leading corporations across various industry verticals
- Infosys is a "Certified Advantage Partner (CAP- Worldwide)" of Oracle in i-Platform and E-Business Suite track

Speaker's Qualifications

- Nagarjuna has over 8 years of professional in Oracle database administration including 5 years in Oracle applications administration.
- Nagarjuna is also Oracle certified DBA for Oracle 8i, 9i and Sun certified system administrator for Solaris 8 administration.
- Nagarjuna is currently consulting for AT&T through Navo Systems Inc.
- Nagarjuna has worked for Oracle IDC and Infosys technologies Limited prior to his current role in Navo.

Agenda

- Introduction – What is Staged APPL_TOP
- Methodology
- Step by Step Procedure to Implement
- Best Practices
- Limitations and Challenges
- Conclusion

What is Staged APPL_TOP

One of the approaches available to reduce patch down time during Oracle Applications migrations and/or major patch updates.

- Exact copy of production environment
- Created by means of rapidclone
- Has same APPL_TOP name as production environment
- Patches are applied to it while production is up

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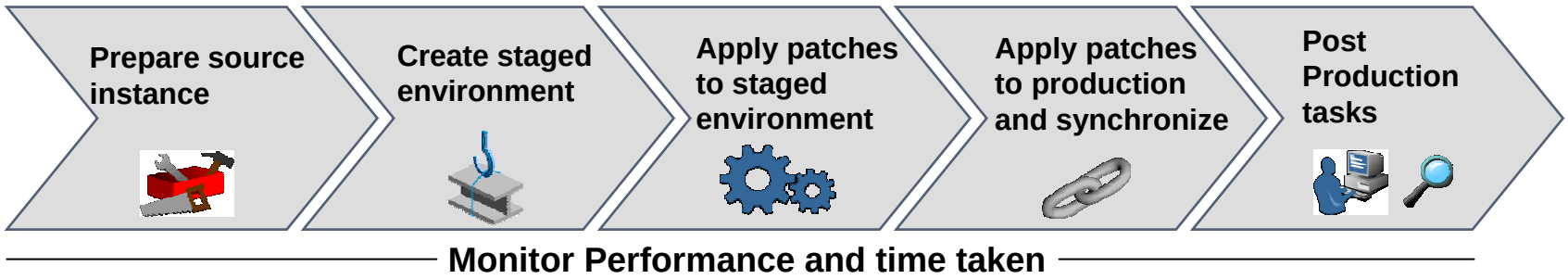
Staged APPL_TOP Methodology

- The approach includes performing following steps:

1. Preparing the source environment
2. Creating the staged environment
3. Applying patches to the staged environment
4. Applying patches to the production environment and Synchronize
5. Post tasks on the production environment



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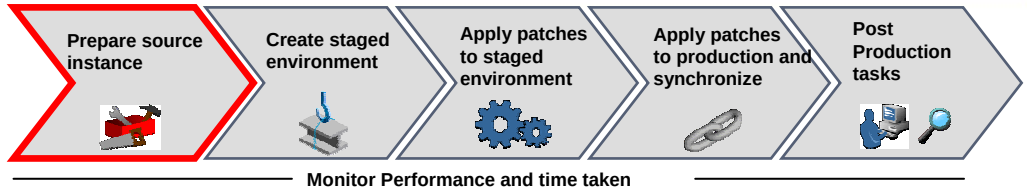
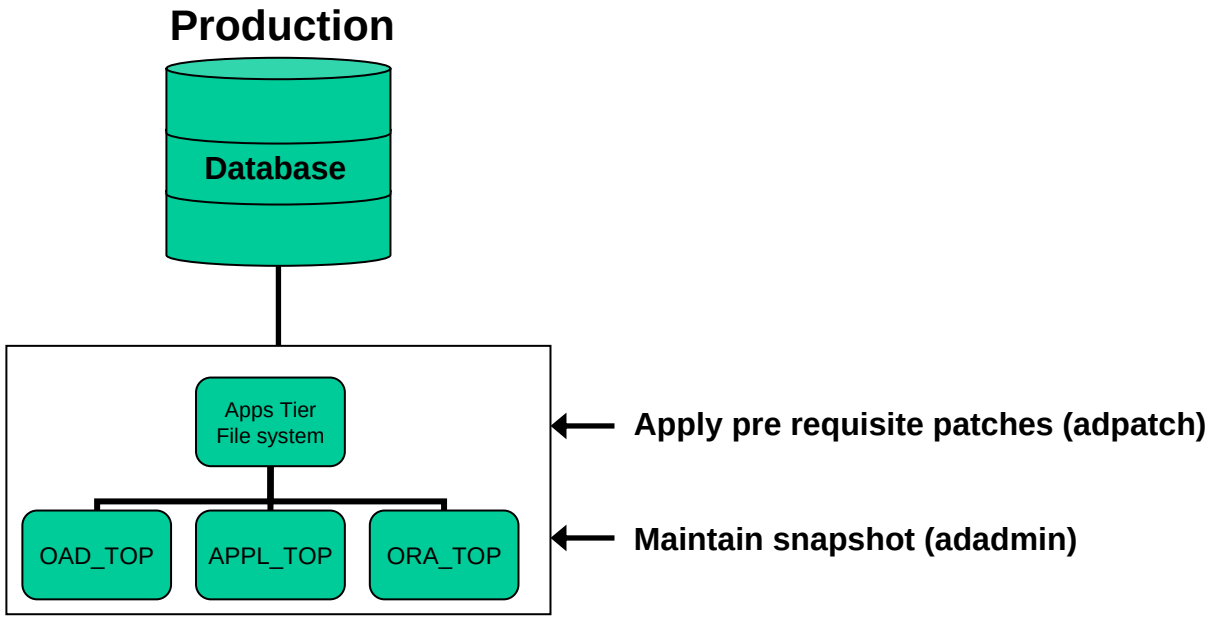
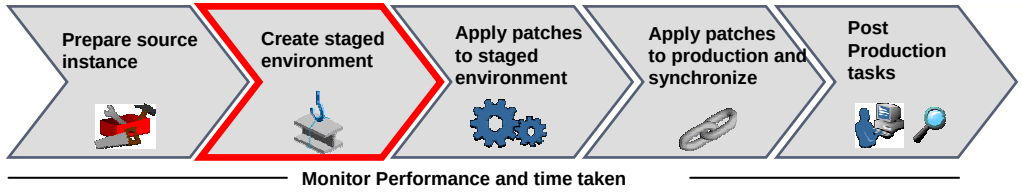
Methodology



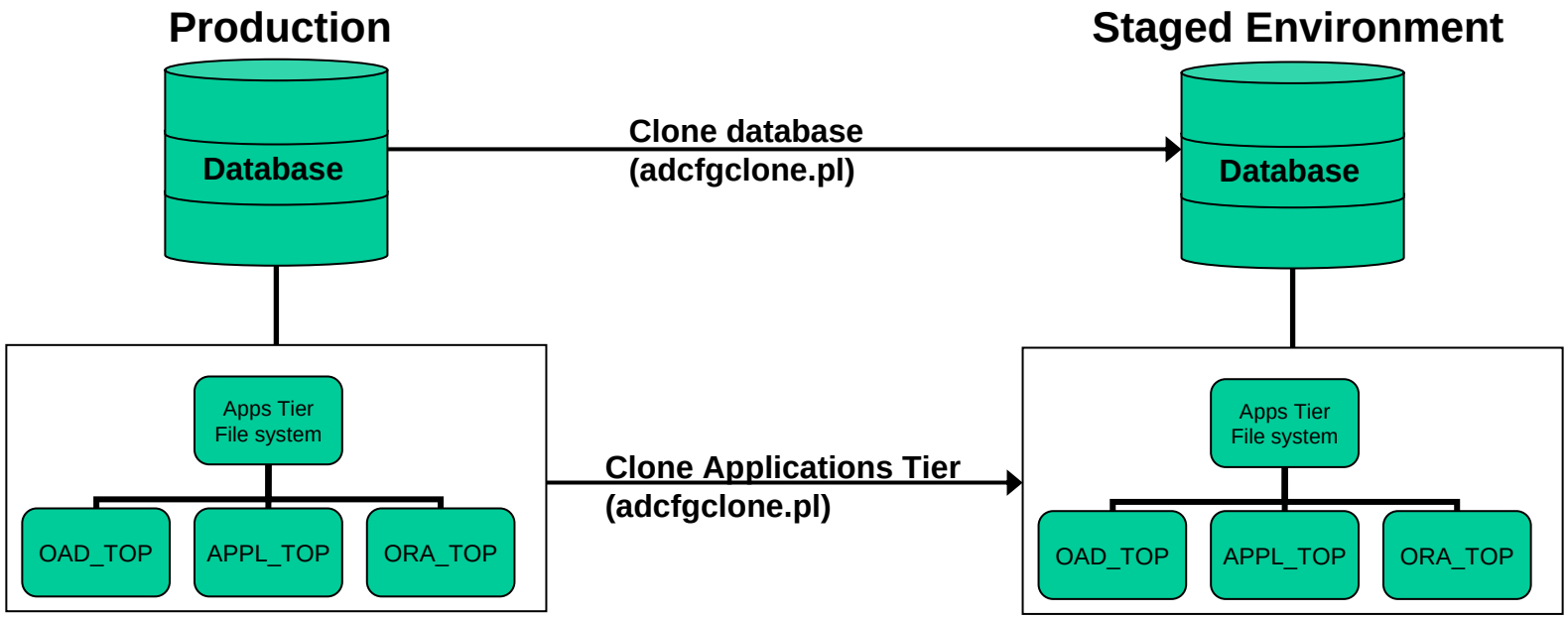
- Step 1 – Prepare Source Instance
  - Check pre requisite patches on production environment and apply them
  - Run maintain snapshot on production environment



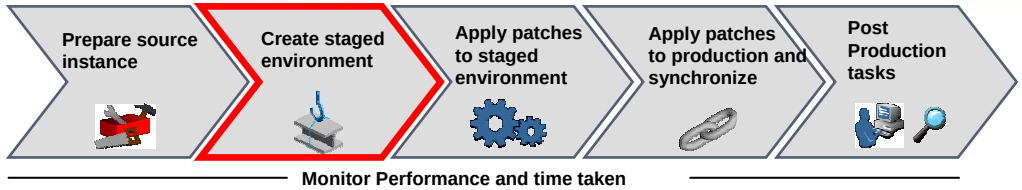
Methodology



- Step 2 – Create staged environment

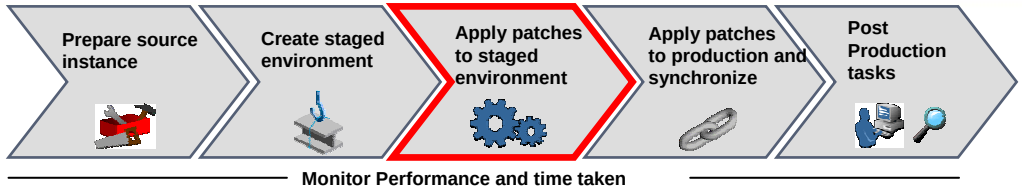


Methodology

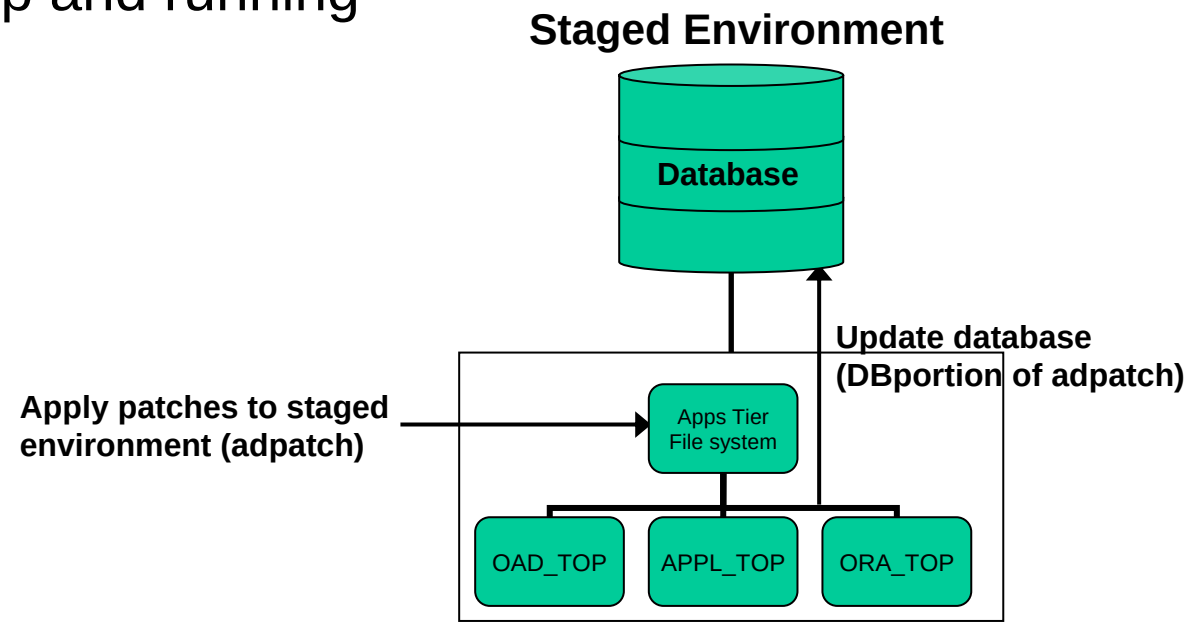


- Step 2 – Create staged environment
  - Run preclone (adpreclone.pl) script on production environment
  - Copy the DB home, database files, ORA_TOP, APPL_TOP, OAD_TOP from production to staged location
  - Run clone (adcfgclone.pl) script on staged location
  - Changed the APPL_TOP name in staged environment
  - Different DB name and ports are good to have
  - No patches should be applied to production environment once staged environment is created

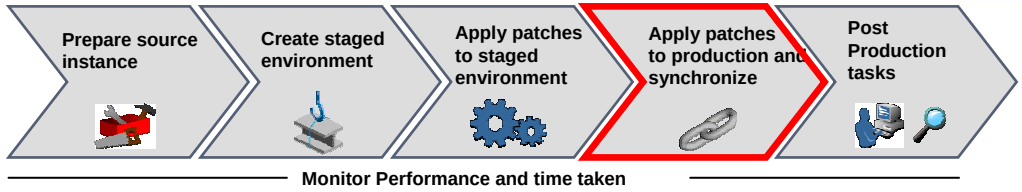
Methodology



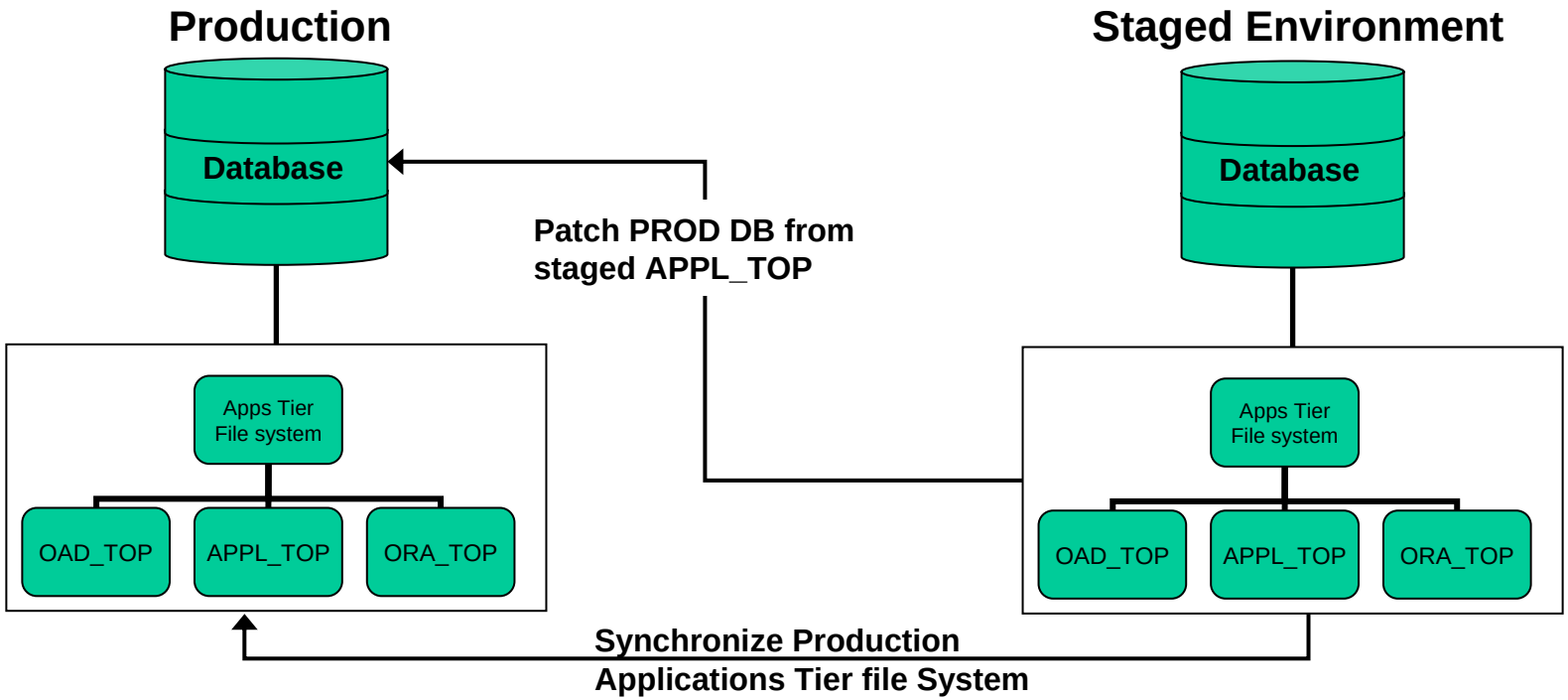
- Step 3 – Apply patches to staged environment
  - Apply all the patches using conventional adpatch utility
  - Patching to staged environment is done while production is up and running



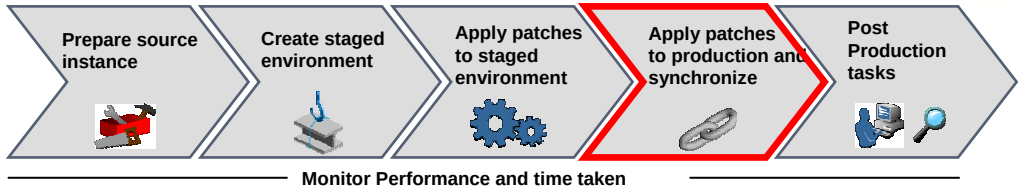
Methodology



- Step 4 – apply patches to production environment

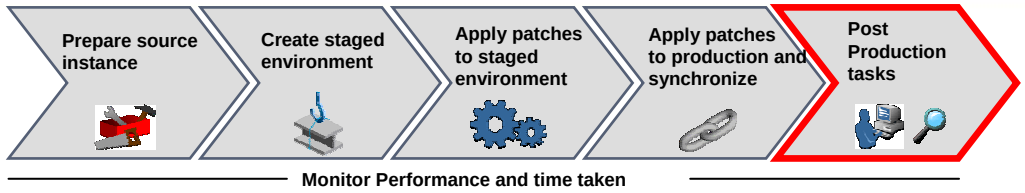


Methodology

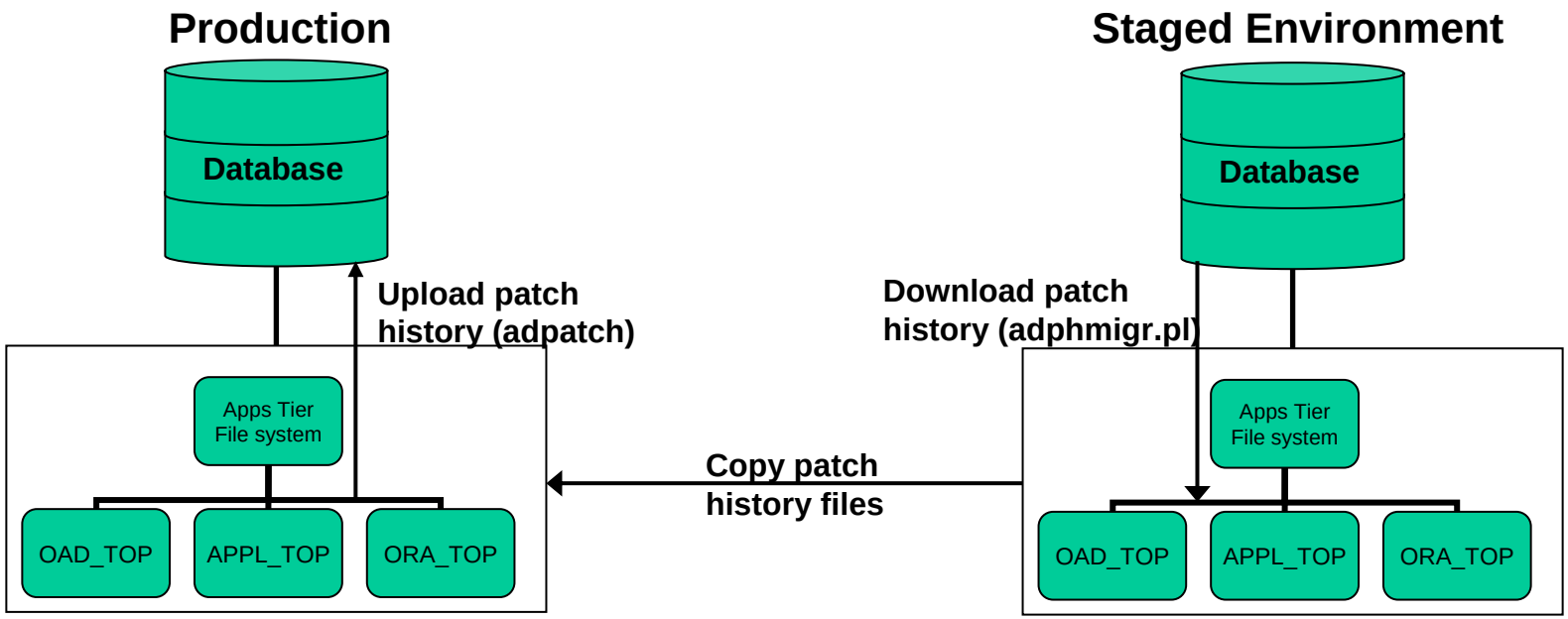


- Step 4 – apply patches to production environment
  - Add TNS entry for PROD DB in staged APPL_TOP location
  - Re-point staged APPL_TOP to production DB by changing the TWO_TASK variable
  - Check the connectivity from staged APPL_TOP to production DB
  - Bring down the production environment for patching
  - Apply the DB portion of patches from staged APPL_TOP to production DB (adpatch options=nocopyportion,nogenerateportion)
  - Synchronize the production APPL_TOP, ORA_TOP and OAD_TOP with staged filesystem while patching is running

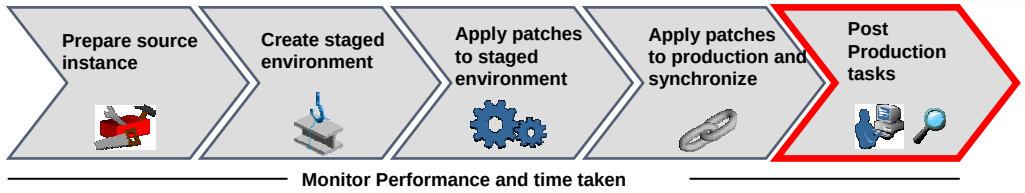
Methodology



- Step 5 – Post tasks on production



Methodology



- Step 5 – Post tasks on production
  - Run autoconfig from production APPL_TOP
  - Start up production environment and release for users
  - Export patch history for copy and generate portion from staged environment (adphmigr.pl)
  - Copy the patch history files from staged APPL_TOP to production APPL_TOP
  - Import the patch history (adpatch)

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Best Practices

- Staged environment should use different DB name and ports
- Test the complete patching multiple times if multiple family packs are applied
- Use this method only if copy and generate portion take significant amount of patching time
- Combine this approach with patch merge (admerge.pl)
- Gather database statistics with good sample size
- Use non interactive mode (defaultsfile=$APPL_TOP/admin/$TWO_TASK/adalldefaults.txt)
- Use shared APPL_TOP in case of multiple applications tier
- Check the time taken for copy and generate portion. This is the time saved by staged APPL_TOP approach effectively.

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Limitations and Challenges

- Staged APPL_TOP methodology can not be used for applying AD mini packs
- Staged APPL_TOP methodology can not be used for technology stack patches (ORA_TOP)
- If you are implementing the staged APPL_TOP methodology, you can not apply any patch to production environment directly after creating the staged environment
- Patches updating control file version of FNDLOAD should be merged together or applied outside the staged APPL_TOP

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Conclusion

- Staged APPL_TOP is an effective way to reduce the significant time during Oracle migrations go-live window.
- Many upgrades can be planned to go live on normal weekend, and organizations need not to wait for holiday weekend.
- It also provides opportunity to IT team as well as super users to validate the system in weekend itself before handing over to end users due to reduced downtime.
- The important aspect for the approach is to plan it at the early stages of the project, and performing multiple test cycles to make sure the effective implementation.

References

- Metalink Note # 242480.1 - Using a Staged Applications 11i System to Reduce Patching Downtime
- Metalink Note # 230672.1 - Cloning Oracle Applications Release 11i with Rapid Clone
- Oracle Applications Maintenance Utilities (Part B10644-01 and B10641-01)

Q & A

Email: Nikhil_Kumar@infosys.com
nagarjuna13@gmail.com
Phone: 847-308-2609

Thank You