

> **26/08/2015**

IT-DB group

Supervisor:

APEX Backup Tool Development

CERNopenlab Summer Students
Lightning Talks Session #2

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What is APEX?



➤ Tool to facilitate development of Web Apps based on data in Oracle databases



Develop

› Over 200 applications in production

› Examples include:

- Training Catalog
- Critical LHC Configuration



Customize

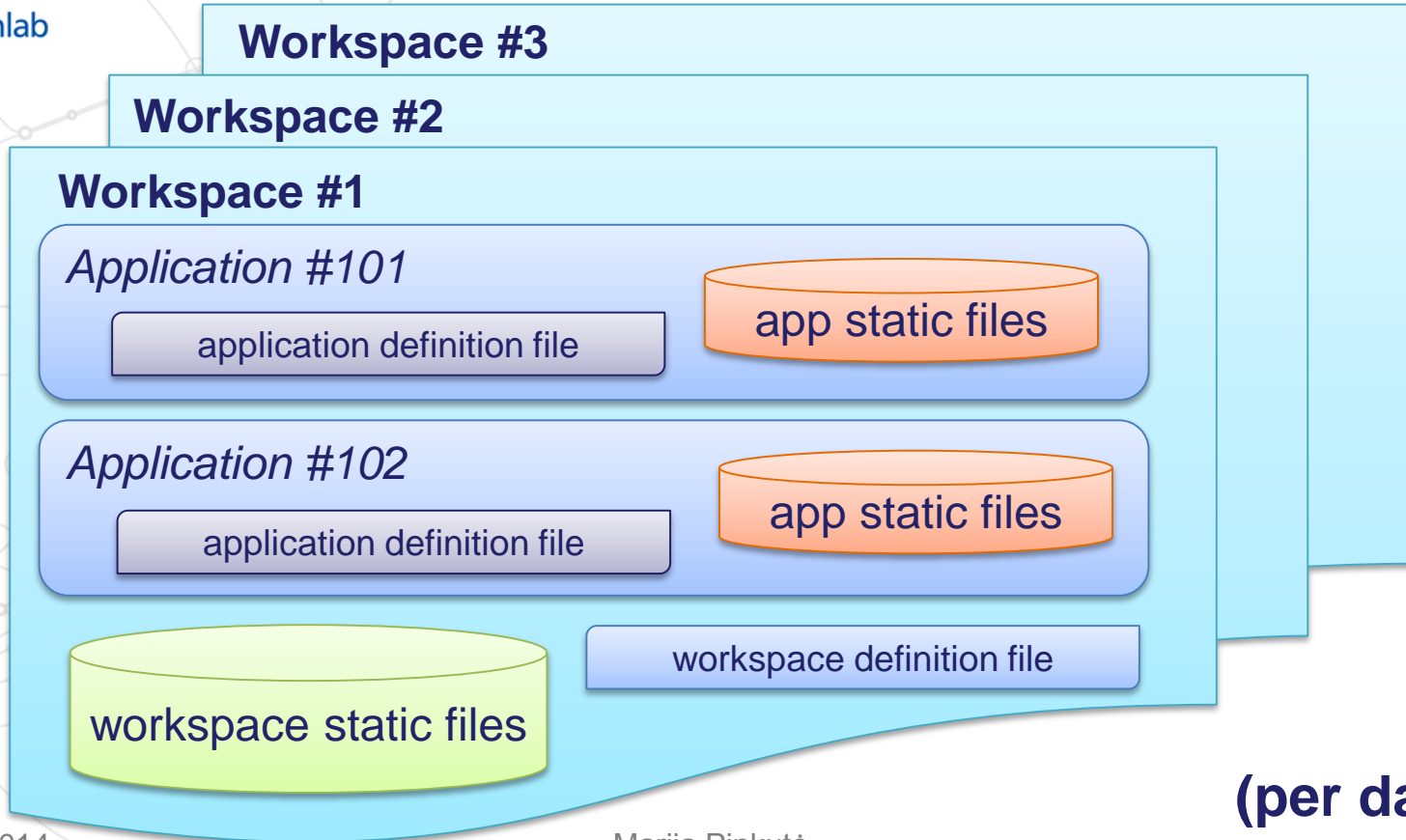
› All customized to CERN's requirements

Project Goal

- › **Implement an APEX backup tool:**
 - to allow online backups
 - to ensure all components are backed up
 - to export all applications in a database at once
 - to provide an easy way for automation



What has to be backed up?



(per database)

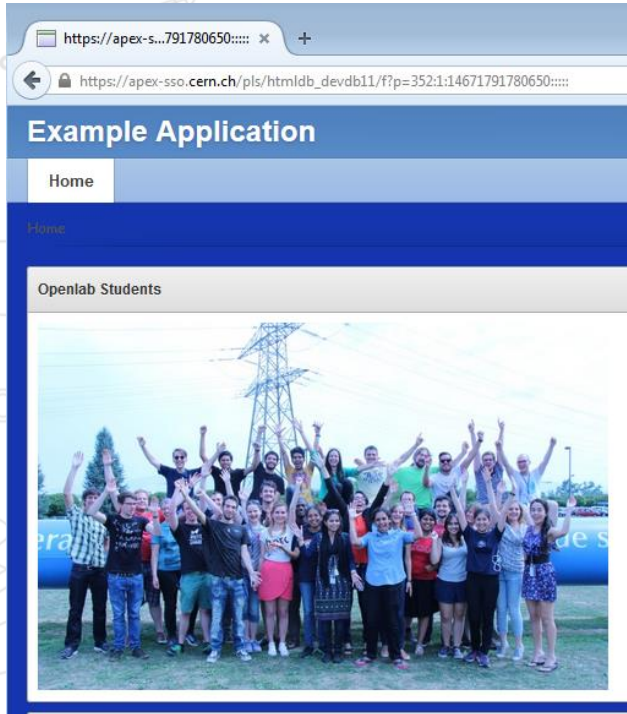
Evaluation of Available Tools

› Evaluation showed that:

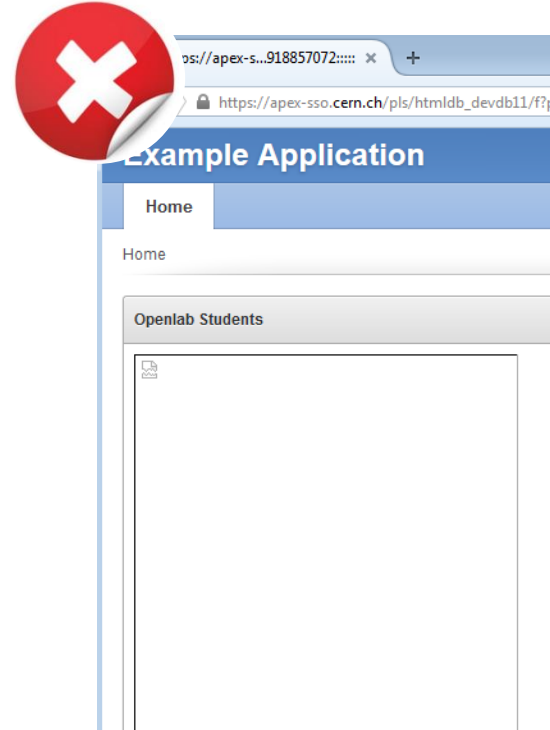
- *no tool* exports all workspaces, apps and files at once
- *no tool* includes all external files in the export
- *no tool* handles differences of APEX versions 4 and 5
- *no tool* ensures successful large external file export

› No tool fitting CERN's requirements...

What should not happen...



Application to be backed up



Application after import of the backup

> **APEX backup tool:**

- Java tool that includes all the missing functionality
- Exports everything as SQL import scripts
- Includes a test suite to verify export of all expected files

> **APEX import wrapper:**

- Bash script that runs import scripts in correct order

Testing & Evaluation

› Test suite

- to check that expected data is exported
- successful automated testing

› Tested on complex applications

- with cooperation of
LHC Configuration Team & IT-DB developers
- successful user testing

› Tested on a large database

- 64 workspaces, 356 apps, 5450 files of all types and sizes
- successful backup

Now backing up APEX is as easy as...

Backing up:

```
> java -jar apex-backup-tool.jar <params>
```

Importing:

```
> bash import-script.sh <params>
```

Available at:

```
> https://gitlab.cern.ch/db/apex-backup-tool
```



Thank you!

for your time!

for the great experience!

for the sunny summer!

to my supervisor Kate!

to everyone who
contributed to the testing!



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Image references:

Slides 2-3:
> apex.oracle.com

Slide 4:
> images.clipartof.com/1094458

Slide 11-12:
> www.clipartpanda.com/categories/sun-clipart-png