GETTING STARTED WITH TFA: TRACE FILE ANALZER

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LEARNING OBJECTIVES

- TFA: What is it, why use it?

- Obtain, install, configure TFA

- TFA log collection for SR process

- TFA advanced features

DEMO ENVIRONMENT

- VirtualBox 5.1.22

- OEL 6.8

- Oracle Database 12.2.0.1 EE

- TFA 12.1.2.8.4

- Oracle 12c Upgrade & Migration HOL pre-built developer VM http://www.oracle.com/technetwork/community/developer-vm/vts-hol-2415742.html

- Slides, demos available at https://github.com/oraclesean/bcoug2017

WHAT IS TFA?

- Trace File Analyzer

  - RAC/non-RAC databases

  - Collects diagnostic files

  - Runs as a lightweight daemon

WHY USE TFA?

- Supplements SR creation
  - Simplifies log collection
  - Works across directory structures
  - Clusterware, ASM, database, OS
- Superior to RDA
  - RDA not cluster aware
  - RDA must be run manually

BASIC ARCHITECTURE

- TFA_BASE
  - $GRID_HOME/tfa
  - $ORACLE_BASE/tfa
- TFA_HOME
  - $TFA_BASE/<node>/tfa_home
  - $TFA_BASE/tfa/localhost/tfa_home
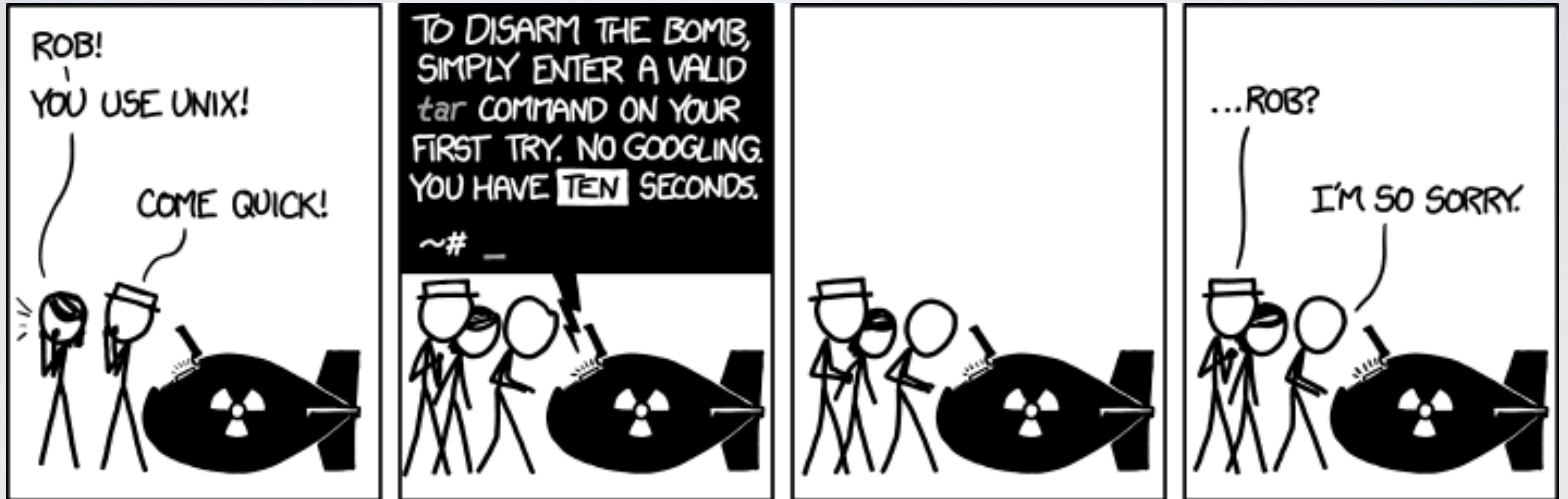- Repository
  - $TFA_BASE/tfa/repository

BASIC ARCHITECTURE

- Runs and owned as root*
- JVM and Java CLI
- Main process: TFAMain
- Monitors logs via daemon
- Nodes communicate via secure socket

BENEFITS OF TFA

- Reduced cost

- Reduced complexity

- Improved quality of service

- Improved agility

BENEFITS OF TFA

COMPATABILITY AND AVAILABILITY

- Included in Grid Infrastructure/DB 11.2.0.4, 12cR1, 12cR2
- Supported versions
  - 10gR2 onward
  - Database, ASM, clusterware
  - Engineered systems (Exadata, appliances)

COMPATABILITY AND AVAILABILITY

- *nix systems only
  - Linux, Solaris, HP-UX, AIX
- RAC and single instance databases
- Minimal system impact

OBTAINING TFA

- Included in 11.2.0.4, 12cR1, 12cR2
- Downloadable from OSS
  - Document 1513912.1
  - Patch 21757377
  - Generic file
- Included in PSU since mid/late 2014

OBTAINING TFA

- Downloaded version is "TFALite"
- More like TFA*Plus!
  - Latest version
  - Includes additional tools
- RAC and DB Support Tools Bundled

INSTALLED VERSION

- What version do I have?
  $GRID_HOME/bin/tfactl toolstatus

- Failure or empty listing:

```
.-----------------------------.
| External Support Tools      |
+-------+-------+-------+------+
| Host  | Tool  | Status       |
+-------+-------+-------+------+
'-------+-------+-------'
```

TFA INSTALLATION

- Download, copy to directory
- Unzip, run as root

POTENTIAL INSTALLATION ISSUES

- May have to uninstall an old version
- -local option requires installation be run on all nodes
- Check for existing procwatcher

CUSTOM INSTALLATION OPTIONS

- Non-daemon mode:
  - Supports non-root installation
  - No automatic collection
  - May not capture all logs

TFA AND PATCHING

- PSU may overwrite existing TFA bundle
- When applying a PSU, TFA may not be stopped properly leading to patch failure
- PSU < 12.1.2.6.0 may move custom TFA repository
- Non-PSU patching may fail on remote nodes

CONFIGURATION - BEST PRACTICES

- Autostart w/cluster (best practice)
  ```
  tfactl enable
  ```

- Allow alert log scanning:
  ```
  tfactl set rtscan=on
  ```

- Confirm oracle access
  ```
  tfactl access lsusers
  ```

CONFIGURATION - ACCESS

- User management
  ```
  tfactl access enable
  tfactl access add -user jill
  tfactl access remove -user jack
  tfactl access block -user joe
  tfactl access unblock -user joe
  ```

CONFIGURATION - CUSTOMIZATION

- Add non-default directories
  `tfactl directory add /dir -node n1`

- Exclusion policies
  ```
  -collectall
  -exclusions
  -noexclusions
  -public
  -private
  ```

CONFIGURATION - CUSTOMIZATION

- Use a shared filesystem for repo:
  `tfactl set repositorydir=/dir`
  `tfactl set reposizeMB=num`

- TFA auto-discovers new databases

- Only maintenance is adding nodes

CONFIGURATION - VIEWING

- See all settings:
  `tfactl print config`

RUNNING COMMANDS

- Direct or via command line
  - TFA calls
    `$GRID_HOME/bin/tfactl cmd -opt`

  - TFA command line
    `tfactl> cmd -opt`

- Demos assume CLI (no tfactl prefix)
- Commands can be called from scripts

HELP, -H AND PRINT

- Help on (most) commands with -h, help

```
help
help print
print -h
```

SETTING CONTEXT

- Set the default context for the session
```
tfactl> database cdbrac

Set db to CDBRAC

CDBRAC tfactl>
```

- Remove context
```
CDBRAC tfactl> database

Removed db from analysis context.

tfactl>
```

COLLECTING DIAGNOSTICS

- Initiated by any non-privileged user granted access
  - diagcollect command called from one node
  - Command securely propagated to other nodes
  - Collections occur in parallel on all nodes
  - Remote nodes write files locally, compress
  - Remote nodes securely transmit files to master node repository
  - Remote nodes purge local repository files
  - Collection completes

COLLECTING DIAGNOSTICS

- Four hours collection by default

```
diagcollect
diagcollect -since 6h
diagcollect -since 1d
```

- last = since

```
diagcollect -last 1h
diagcollect -from "OCT/01/2016 00:00:00" \
            -to "OCT/02/2016 00:01:00"
diagcollect -for "OCT/01/2016"
```

COLLECTING DIAGNOSTICS

- Default is to "trim" logs
  `-notrim`

- Limit by context

  - ASM, database, OS, etc.

- Skip core dumps
  `-nocores`

- ASH and AWR collections

LIMITING COLLECTIONS

- TFA will collect logs created prior to installation
- Moving and deleting files - run a new inventory
- Only time options are days, hours

SRDC OPTIONS

- Collect performance diagnostics
  `diagcollect -srdc dbperf`

- Collect for error conditions
  `diagcollect -srdc ora600`

  - ORA-600, 700, 4030, 4031, 7445, growing!

  - Internal Errors

PURGING COLLECTIONS

- Auto purge based on size, age
  - Min age, 12 hours by default
- Manual purge (root user only):
  ```
  purge -older 1d
  purge -older 12h
  purge -older 7d -force
  ```

BUNDLED TOOLS

- Show all available tools
  `toolstatus`

TFA TOOLS

alertsummary

events

dbglevel

grep

ps

tail

param

changes

summary

history

ls

pstack

vi

ANALYZE

- Log analyzer tool
- Search limiters
  - String pattern
  - Component
  - Type
  - Node
  - Times

ANALYZE

- Also analyze output of tools
  - OSWatcher
  - oratop

SUPPORT TOOLS

exachk/orachk

oswbb

procwatcher (prw)

oratop

sqlt

SUPPORT TOOLS - DARDA

- TFA invocation follows RDA protocols
- Uses TFA repository
- Provides access to RDA, ADR, OCM
- Correct MOS DocID is 201804.2 (TFA docs are wrong)
- darda FAQ: DocID 471608.1

SUPPORT TOOLS - DARDA

- Targeted or menu-driven discovery

- The only commands you *need:*

  - setupmos

  - menu

SUPPORT TOOLS - DARDA

- Useful commands for power-users:
  - runmenu
    ```
    darda runmenu 201804.1
    ```
  - collect
  - upload
  - draftsr

REDACTION CAPABILITIES

- High-level only
- Simple string replacement
- Managed via XML
  `$TFA_HOME/resources/mask_strings.xml`

REFERENCES

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- 215187.1: All About the SQLT Diagnostic Tool
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- 2054786.1: TFA tools(not collector) do not get installed along with TFA during 12.1.0.2 GI installation

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QUESTIONS

https://github.com/oraclesean/bcoug2017

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