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#ittage

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Markus Flechtner

TFA

.. And the Oracle Support Tools Bundle



TFA

.. And the Oracle Support Tools Bundle
Markus Flechtner

Now included in the
Autonomous Health Framework



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trivadis

Markus Flechtner

- Principal Consultant, Trivadis Germany GmbH, Düsseldorf
- Oracle since 1990: Development, Support, DBA
- Focus: RAC, HA, Upgrade + Migration
- Teacher: RAC, New Features, Multitenant, PostgreSQL
- Co-Author of the book "Der Oracle DBA" (Hanser, 2016)



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FOUNDED IN
1994

250 SLA's
(SERVICE LEVEL AGREEMENTS)

 **700**
EMPLOYEES

 **16** **TRIVADIS**
WORKSPACES
SWITZERLAND, GERMANY,
AUSTRIA, DENMARK,
ROMANIA

4000 
TRAINING PARTICIPANTS PER YEAR

5 **MILLION**
CHF 
BUDGET FOR SCIENCE
AND DEVELOPMENT PER YEAR

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118 **MILLION**
CHF
TURNOVER 

800 
CUSTOMERS

1900 **PER**
YEAR
PROJECTS



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Agenda

- What's TFA?
- Availability & Installation – levels of confusion
- What can TFA do for you?
- And the other tools ..
- Summary & Further Information



Picture from Pixabay

What's TFA? ... and the Support Tools Bundle?

Real life experience ..

- 26 node cluster
 - 5 databases
- Strange ASM issue
- Oracle Support requested
 - Clusterware logs
 - ASM alert.logs
 - Database alert.logs
 - OS logs

For all 26 nodes



Trace File Analyzer Collector: Originally, ..

- Initial release in January 2013
- **Collects trace and log files and system information from all nodes into a cluster with a single command initiated on one cluster node**
- Centralized output
- **Real-time scanning** for specific error messages possible ➔ Automatic Collection
- When uploading TFA results (ZIP file) to Oracle Support, Oracle has got the "Trace File Analyzer" available to analyze the issue

Evolution Part 1: "Support Tools Bundle"

- Over time, more and more standalone support tools were integrated in TFA
- TFACTL as the central CLI for
 - Oswatcher
 - Oratop
 - Pstack
 - Procwatcher
 - [...]
 - Orachk/exachk

Now: "Autonomous Health Framework"

- With release 19.3.0 (October 2019) OraChk and TFA were merged into the "Autonomous Health Framework" (AHF)
- AHF consists of
 - OraChk
 - ExaChk
 - TFA (and the Support Tools Bundle)
- Current version 19.3.2 (December 2019)
- Download from MOS 2550798.1
 - Ca. 350 MB, incl. JRE
- For Windows and HP-UX, currently only standalone TFA (19.2.3) is available: MOS 1513912.1

The current toolset (AHF 19.3.2)

```
oracle@ittage:~/ [rdbms19000] /opt/oracle.ahf/bin/tfactl toolstatus
```

TOOLS STATUS - HOST : ittage			
Tool Type	Tool	Version	Status
Development Tools	orachk	19.3.0.0.0	DEPLOYED
	oratop	14.1.2	DEPLOYED
Support Tools Bundle	oswbb	8.3.2	RUNNING
	prw	12.1.13.11.4	NOT RUNNING
TFA Utilities	alertsummary	19.3.0.0.0	DEPLOYED
	calog	19.3.0.0.0	DEPLOYED
	dbcheck	18.3.0.0.0	DEPLOYED
	dbglevel	19.3.0.0.0	DEPLOYED
	grep	19.3.0.0.0	DEPLOYED
	history	19.3.0.0.0	DEPLOYED
	ls	19.3.0.0.0	DEPLOYED
	managelogs	19.3.0.0.0	DEPLOYED
	menu	19.3.0.0.0	DEPLOYED
	param	19.3.0.0.0	DEPLOYED
	ps	19.3.0.0.0	DEPLOYED
	pstack	19.3.0.0.0	DEPLOYED
	summary	19.3.0.0.0	DEPLOYED
	tail	19.3.0.0.0	DEPLOYED
	trriage	19.3.0.0.0	DEPLOYED
	vi	19.3.0.0.0	DEPLOYED

Availability & Installation – levels of confusion

TFA – included in Oracle Software (1)

- TFA is included in the Oracle Grid Infrastructure software since 11.2.0.4
- TFA is included in the RDBMS software since 12.2

```
oracle@training19c:~/ [rdbms19000] cd $ORACLE_HOME/suptools
oracle@training19c:/u00/app/oracle/product/19.0.0.0/suptools/ [rdbms19000]
ls -al
total 8
drwxr-xr-x.  5 oracle oinstall    45 Apr 17  2019 .
drwxr-xr-x. 72 oracle oinstall 4096 Nov 27 20:02 ..
drwxr-xr-x. 12 oracle oinstall 4096 Oct 20 20:25 orachk
drwxr-xr-x.  2 oracle oinstall   20 Apr 27  2019 oratop
drwxr-xr-x.  3 oracle oinstall   21 Apr 17  2019 tfa
oracle@training19c:/u00/app/oracle/product/19.0.0.0/suptools/ [rdbms19000]
```

TFA – included in Oracle Software (2)

- When installing the RDBMS software you can decide if you want to install TFA during the execution of root.sh

```
Now product-specific root actions will be performed.  
Do you want to setup Oracle Trace File Analyzer (TFA) now ? yes|[no] :  
yes  
Installing Oracle Trace File Analyzer (TFA) .
```

- If you decide to install TFA Collector later:
 - Set ORACLE_HOME
 - Run \$ORACLE_HOME/suptools/tfa/release/tfa_home/install/roottf.sh as root
- **TFA is not updated with the RUs**

TFA – separate installation

- Additionally, TFA is available as part of the Autonomous Health Framework (AHF)
- Current version 19.3.2 (except for Windows and HP-UX)
 - No other standalone downloads available anymore
- When installing AHF will detect a running TFA instance and will update it in the existing directory
- For new installations, TFA suggests /opt/oracle.ahf as the TFA_HOME directory

```
oracle@training19c:~/ cd /u00/app/oracle/stage/  
oracle@training19c:/u00/app/oracle/stage/ unzip AHF-LINUX_v19.3.2.zip  
[...]  
oracle@training19c:/u00/app/oracle/stage/ su  
Password:  
root@training19c:/u00/app/oracle/stage/mkdir -p /opt/oracle.ahf/data  
root@training19c:/u00/app/oracle/stage/ ./ahf_setup  
[...]
```

TFA daemon

- TFA is running as a daemon in the background
- On a cluster, TFA is running on each node

```
root@training19c:/u00/app/oracle/stage/ [rdbms19000] ps -ef |grep tfa
root      1352      1  0 08:39 ?                00:00:00 /bin/sh /etc/init.d/init.tfa
run >/dev/null 2>&1 </dev/null
root      2593      1  1 08:39 ?                00:00:18 /opt/oracle.ahf/jre/bin/java -
server -Xms32m -Xmx64m -Djava.awt.headless=true -Ddisable.checkForUpdate=true -
XX:HeapDumpPath=/opt/oracle.ahf/data/training19c/diag/tfa
oracle.rat.tfa.TFAMain /opt/oracle.ahf/tfa
```

What can TFA do for you?

TFA – original functionality

- Collect all relevant log and trace files from an Oracle cluster
- On a cluster, data collection is initiated on a single node
- Data is collected from the remote nodes and stored on the initiating node
- TFA can monitor the alert.log files and start a collection automatically ("autocollect") in case of a ORA-600, ORA-7445, ..

Tfactl diagcollect – Example (single node)

```
oracle@training19c:~/ /opt/oracle.ahf/tfa/bin/tfactl diagcollect
By default TFA will collect diagnostics for the last 12 hours.
For more targeted collections enter the time of the incident, otherwise hit <RETURN>
to collect for the last 12 hours
[YYYY-MM-DD HH24:MI:SS,<RETURN>=Collect for last 12 hours] :
Collecting data for the last 12 hours for all components...
Collecting data for all nodes
[...]
```

2019/12/02 09:20:57 CET	:	Collection Name	:	tfa_Mon_Dec_02_09_20_49_CET_2019.zip
2019/12/02 09:20:57 CET	:	Collecting diagnostics from hosts	:	[training19c]
2019/12/02 09:20:57 CET	:	Scanning of files for Collection in progress	:	...

```
[...]
2019/12/02 09:21:30 CET : Completed collection of additional diagnostic information...
.------.
|           Collection Summary           |
+-----+-----+-----+-----+
| Host           | Status | Size | Time |
+-----+-----+-----+-----+
| training19c    |        |      |      |
'-----+-----+-----+-----'
```

Logs are being collected to:

/opt/oracle.ahf/data/repository/collection_Mon_Dec_02_09_20_49_CET_2019_node_all

Tfactl diagcollect – Result

```
oracle@training19c:/opt/oracle.ahf/data/repository/collection_Thu_Nov_28_22_47_00_CET_2019_node_all/ [rdbms19000] ls -al
total 444
drwx-----. 2 oracle oinstall    4096 Nov 28 22:47 .
drwxr-xr-x. 5 root    root        4096 Dec  2 09:21 ..
-rw-r--r--. 1 oracle oinstall    2294 Nov 28 22:47
diagcollect_20191128224659_training19c.log
-rw-r--r--. 1 oracle oinstall      809 Nov 28 22:47
diagcollect_console_20191128224659_training19c.log
-rw-r--r--. 1 oracle oinstall 434072 Nov 28 22:47
training19c.tfa_Thu_Nov_28_22_47_00_CET_2019.zip
-rw-r--r--. 1 oracle oinstall      659 Nov 28 22:47
training19c.tfa_Thu_Nov_28_22_47_00_CET_2019.zip.txt
```

Tfactl diagcollect – compression

- Which data is collected by default?
 - alert.log from all databases - Patch Information
 - ASM log files - CHM information
 - listener.log files - Clusterware logs
- Components, node list and time window can be specified
- Data is "trimmed" to the relevant time window

```
2016/05/03 10:36:56 CEST : Total Size of all Files Checked : 3GB
2016/05/03 10:36:56 CEST : Number of files containing required range : 271
2016/05/03 10:36:56 CEST : Total Size of Files: 175MB
2016/05/03 10:36:56 CEST : Number of files trimmed : 18
2016/05/03 10:36:56 CEST : Total Size of data prior to zip : 93MB
2016/05/03 10:36:56 CEST : Saved 112MB by trimming files
2016/05/03 10:36:56 CEST : Zip file size : 7MB
```

Tfactl – configuration (1)

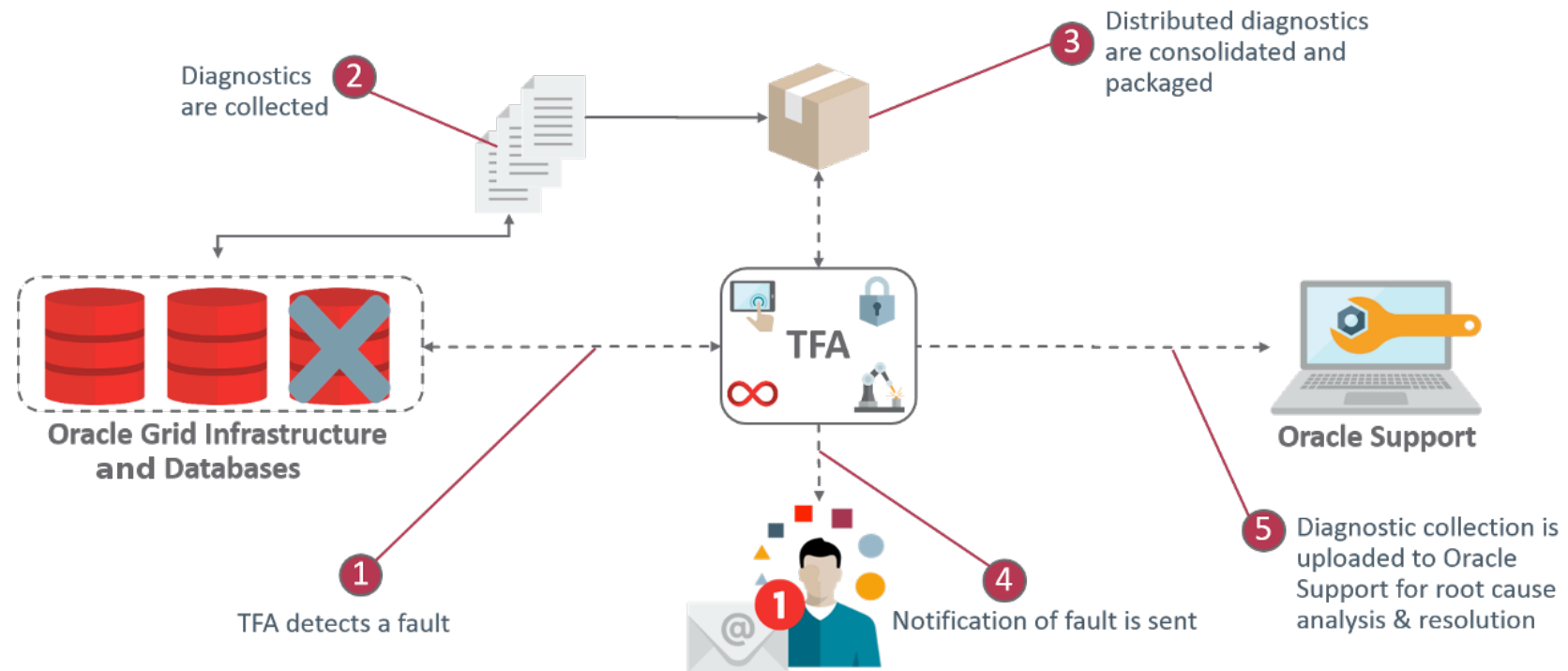
```
oracle@training19c:~/ [rdbms19000] /opt/oracle.ahf/tfa/bin/tfactl print config
```

```
.------.  
|                                     training19c                                     |  
+-----+-----+  
| Configuration Parameter                                                    | Value |  
+-----+-----+  
| TFA Version                                                                | 19.3.2.0.0 |  
| Java Version                                                                | 1.8        |  
| Public IP Network                                                            | false      |  
| Automatic Diagnostic Collection                                              | true       |  
| Alert Log Scan                                                              | true       |  
| Disk Usage Monitor                                                          | true       |  
| Managelogs Auto Purge                                                        | false      |  
| Trimming of files during diagcollection                                    | true       |  
| Granular Tracing                                                            | false      |  
| Debug Mask (Hex)                                                            | 0          |  
| Repository current size (MB)                                                | 99         |  
| Repository maximum size (MB)                                                | 1080       |  
| Max Size of TFA Log (MB)                                                    | 50         |  
| Max Number of TFA Logs                                                       | 10         |  
| Max Size of Core File (MB)                                                  | 50         |  
[...]
```

Tfactl – configuration (2)

```
[...]
| Max Collection Size of Core Files (MB) | 500 | | |
| Max File Collection Size (MB) | 5120 |
| Minimum Free Space to enable Alert Log Scan (MB) | 500 |
| Time interval between consecutive Disk Usage Snapshot(minutes) | 60 |
| Time interval between consecutive Managelogs Auto Purge(minutes) | 60 |
| Logs older than the time period will be auto purged(days[d]|hours[h]) | 30d |
| Automatic Purging | true |
| Age of Purging Collections (Hours) | 12 |
| TFA IPS Pool Size | 5 |
| TFA ISA Purge Age (seconds) | 2592000 |
| TFA ISA Purge Mode | simple |
| TFA ISA Purge Thread Delay (minutes) | 60 |
| TFA ISA CRS Profile Delay (minutes) | 30 |
| Lucene index recovery mode | recreate |
| Setting for ACR redaction (none|SANITIZE|MASK) | false |
| Email Notification will be sent for CHA EVENTS if address is set | true |
| AUTO Collection will be generated for CHA EVENTS | true |
| Generation of Telemetry Data | false |
|-----+-----|
```

TFA – Autocollect



Source: Oracle AHF Users Guide

Tfactl – Enable Autocollect

```
root@training19c:/home/oracle/ /opt/oracle.ahf/tfa/bin/tfactl set autodiagcollect=on
```

```
Successfully set autodiagcollect=ON
```

```
.-----.  
|                                     training19c                                     |  
+-----+-----+  
| Configuration Parameter                                     | Value |  
+-----+-----+  
| TFA Version                                                 | 19.3.2.0.0 |  
| Java Version                                                | 1.8        |  
| Public IP Network                                           | false      |  
| Automatic Diagnostic Collection                             | true       |  
| Alert Log Scan                                              | true       |  
| Disk Usage Monitor                                          | true       |  
| Managelogs Auto Purge                                       | false      |  
| Trimming of files during diagcollection                     | true       |  
| Granular Tracing                                            | false      |  
[...]
```

TFA – and more (1)

- Collect information for Service Requests

```
tfactl diagcollect -srdc srdc_profile  
[-tag tagname] [-z filename] [-last nh|d|-from time -to time | -for time]  
-database database
```

- The "srdc_profile" specifies the problem type
- Examples:
 - ORA-00600,ORA-01031, ORA-01555, ORA-4031, ORA-07445 and other ORA-errors
 - Dbasm
 - Dataguard
 - Dbperf
 - Dbupgrade
 - Dbpartition

TFA – and more (2)

- Upload diagnostic information to My Oracle Support
 - Internet connection required, so in many cases not applicable for production systems
 - Can be combined with a specific `srhc_profile` (see previous slide)

```
# specify MOS username and password and store them in a wallet
```

```
tfactl setupmos
```

```
# run diagcollect for a service request
```

```
tfactl diagcollect [...] -sr <sr_num>
```

```
# upload the collected data to MOS
```

```
tfactl upload -sr <sr_num> -wallet <list_of_files>
```

And the other tools ...

Support Tools Bundle – Overview (1)



Category	Tool	Function
ADR management	managelogs	manages files in the ADR, e.g. automatically purges files after some time
files in the ADR	alertsummary	checks all alert- files for ORA-messages
	tail	tail on an alert.log or trace files
	events	reports events in all the alert.log files (e.g. start of an instance)
	grep	greps all files in ADR for a pattern

Support Tools Bundle – Overview (2)

Category	Tool	Function
processes	ps	greps processlist
	oratop	like "top" on the OS level
	oswatcher	logs OS usage, can produce graphs
	triage	evaluates results of oswatcher
	pstack	Process stack for a given process

.. and more

ADR management – managelogs (1)

- TFA can manage (purge) the files in the ADR
- Usage:

```
tfactl managelogs -purge -older <num>d
```

```
tfactl managelogs -purge -older <num>d -dryrun
```


ADR management – managelogs (2)

- Additionally, TFA can manage the files in the ADR automatically
- Disabled by default
- Interval and maximum age of the files can be defined
- Example:

```
root# /opt/oracle.ahf/bin/tfactl set manageLogsAutoPurge=ON  
Successfully set manageLogsAutoPurge=ON
```

Interval in minutes,
default=60

```
root# /opt/oracle.ahf/bin/tfactl set manageLogsAutoPurgeInterval=120  
Successfully set manageLogsAutoPurgeInterval=120
```

Max Age. Can be
specified in "h" and "d"

```
root# /opt/oracle.ahf/bin/tfactl set manageLogsAutoPurgePolicyAge=34d  
Successfully set manageLogsAutoPurgePolicyAge=34d
```

alertsummary

- Scans all alert.log files in the ADR for events and critical errors
- Usage:

```
tfactl alertsummary [-dg <dbname>]
```

- Example:

```
oracle@training19c:~/ [TVDCDB1] /opt/oracle.ahf/bin/tfactl alertsummary
[...]  
-----  
27 11 2019 20:51:22 Ora-07445 jol_superintf_set()... TVDCDB1_oracle_12216.trc  
03 12 2019 16:14:15 Database started  
Summary: Ora-600=0, Ora-7445=1, Ora-700=0  
~~~~~  
Warning: Only FATAL errors reported  
Warning: These errors were seen and NOT reported  
Ora-27366 Ora-12012 Ora-27369 Ora-27451 Ora-65054 Ora-19815 Ora-19809  
Ora-19804 Ora-16038 Ora-00312 Ora-38706 Ora-38708
```

tail

- Runs the "tail" command on a given file in the ADR (wildcards allowed)
- Usage:

```
tfactl tail [-f] <filename>
```

- Example:

```
oracle@training19c:~/ /opt/oracle.ahf/bin/tfactl tail -f alert_TVDCDB*
```

```
Output from host : training19c
```

```
-----
```

```
2019-12-03T16:13:13.362399+01:00
```

```
db_recovery_file_dest_size of 3000 MB is 4.14% used. This is a  
user-specified limit on the amount of space that will be used by this  
database for recovery-related files, and does not reflect the amount of  
space available in the underlying filesystem or ASM diskgroup.
```

events

- "lists important events" on the system
- Basic Usage (more parameters available):

```
tfactl events -component asm|crs -database <db> -from <time> -to <time>
```

- Example

```
oracle@training19c:~/ [TVDCDB1] /opt/oracle.ahf/bin/tfactl events
Output from host : training19c
-----
Event Summary:
INFO      :5
ERROR     :0
WARNING   :0
Event Timeline:
[Dec/02/2019 22:28:31.000]: [db.tvdnadb.TVDNCDB]: Starting ORACLE instance (normal) (OS id: 5005)
[Dec/02/2019 22:57:36.000]: [db.tvdnadb.TVDNCDB]: Starting ORACLE instance (normal) (OS id: 6333)
[Dec/03/2019 08:54:14.000]: [db.tvdcdb1.TVDCDB1]: Starting ORACLE instance (normal) (OS id: 30505)
[Dec/03/2019 16:12:58.000]: [db.tvdnadb.TVDNCDB]: Starting ORACLE instance (normal) (OS id: 6920)
[Dec/03/2019 16:14:11.000]: [db.tvdcdb1.TVDCDB1]: Starting ORACLE instance (normal) (OS id: 7858)
```

- ```
tfactl grep <search_pattern> <filename_pattern>
```

- [illegible]

## ps

- Combines ps & grep, i.e. greps the process list according to a given pattern
- Usage:

```
tfactl ps <pattern>
```

- Example:

```
oracle@training19c:~/ [TVDCDB1] /opt/oracle.ahf/bin/tfactl ps smon
```

```
Output from host : training19c
```

```

```

```
oracle 7105 1 0 16:13 ? 00:00:00 ora_smon_TVDNCDB
oracle 7935 1 0 16:14 ? 00:00:00 ora_smon_TVDCDB1
oracle 9021 9004 5 16:16 pts/0 00:00:00
/opt/oracle.ahf/python/bin/python /opt/oracle.ahf/ahf/lib/ahfctl.egg ps smon
```

# oratop

- "Realtime" database monitoring
- Usage:

```
tfactl oratop -database <dbname>
```

| Oracle 19c - Primary TVDNCD 21:41:57 up: -2147483648, 1 ins, 0 sn, 0 us, 2.0G sga, 2% fra, 0 er, 6.7%b |     |       |          |           |     |         |     |                   |     |     |      |      |             |            |                       |      |        |     |      |      |            |      |      |      |      |
|--------------------------------------------------------------------------------------------------------|-----|-------|----------|-----------|-----|---------|-----|-------------------|-----|-----|------|------|-------------|------------|-----------------------|------|--------|-----|------|------|------------|------|------|------|------|
| ID                                                                                                     | CPU | %CPU  | %DCP     | LOAD      | AAS | ASC     | ASI | ASW               | IDL | ASP | LAT  | MBPS | IOPS        | R/S        | W/S                   | LIO  | GCPS   | %FR | PGA  | TEMP | UTPS       | UCPS | RT/X | DCTR | DWTR |
| 1                                                                                                      | 4   | 6.6   | 0.7      | 0.1       | 0.3 | 0       | 0   | 0                 | 0   | 0   | 0    | 0.4  | 19          | 19         | 0                     | 1.1k | 0      | 6   | 293M | 3.0M | 0          | 2    | 1.7s | 100  | 0    |
| EVENT (C)                                                                                              |     |       |          |           |     |         |     |                   |     |     |      |      | TOTAL WAITS |            | TIME(s)               |      | AVG_MS |     | PCT  |      | WAIT_CLASS |      |      |      |      |
| DB CPU                                                                                                 |     |       |          |           |     |         |     |                   |     |     |      |      |             |            | 87                    |      |        |     | 80   |      |            |      |      |      |      |
| db file sequential read                                                                                |     |       |          |           |     |         |     |                   |     |     |      |      | 18613       |            | 7                     |      | 0.4    |     | 7    |      | User I/O   |      |      |      |      |
| log file parallel write                                                                                |     |       |          |           |     |         |     |                   |     |     |      |      | 4652        |            | 6                     |      | 1.3    |     | 6    |      | System I/O |      |      |      |      |
| control file heartbeat                                                                                 |     |       |          |           |     |         |     |                   |     |     |      |      | 1           |            | 4                     |      | 4019.0 |     | 4    |      | Other      |      |      |      |      |
| oracle thread bootstrap                                                                                |     |       |          |           |     |         |     |                   |     |     |      |      | 120         |            | 3                     |      | 32.5   |     | 4    |      | Other      |      |      |      |      |
| ID                                                                                                     | SID | SPID  | USERNAME | PROGRAM   | SRV | SERVICE | PGA | SQLID/BLOCKER OPN |     |     | E/T  | STA  | STE         | WAIT_CLASS | EVENT/*LATCH          |      |        |     |      | W/T  |            |      |      |      |      |
| 1                                                                                                      | 690 | 12578 | SYS      | SQL Devel | DED | TVDNCDB | 24M | 7qtw8rdz2m45c SEL |     |     | 8.0s | ACT  | CPU         | System I/O | control file sequenti |      |        |     |      | 2u   |            |      |      |      |      |

# Oswatcher (1)

- Logs OS usage (CPU, Network, I/O)
- Collection usually runs in the background
  - Enabled when installing TFA/AHF

30 seconds interval  
Keep data for 48 hours

```
oracle@training19c:~/ [TVDCDB1] ps -ef |grep osw
oracle 2815 1 0 16:03 ? 00:00:00 /bin/sh ./OSWatcher.sh 30 48 NONE
/opt/oracle.ahf/data/repository/suptools/training19c/oswbb/oracle/archive
oracle 2991 2815 0 16:03 ? 00:00:00 /bin/sh ./OSWatcherFM.sh 48
/opt/oracle.ahf/data/repository/suptools/training19c/oswbb/oracle/archive
oracle 25885 5898 0 16:51 pts/0 00:00:00 grep --color=auto osw
```



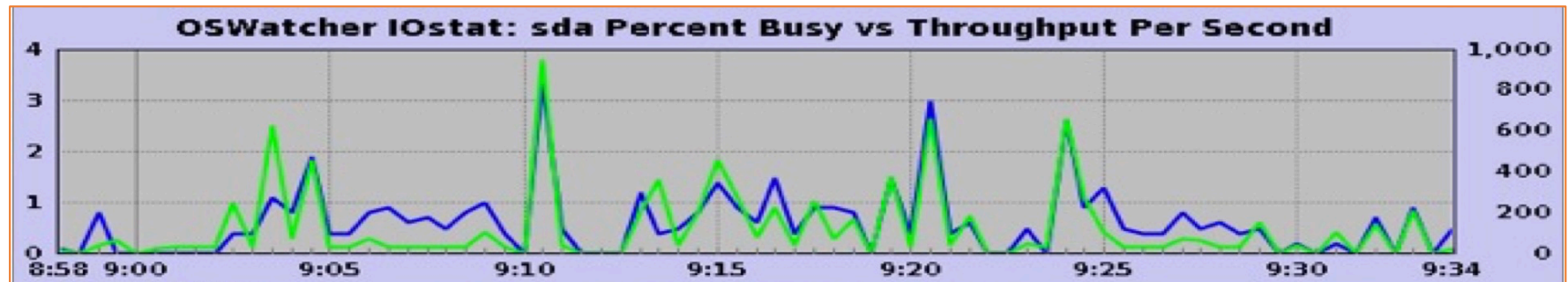
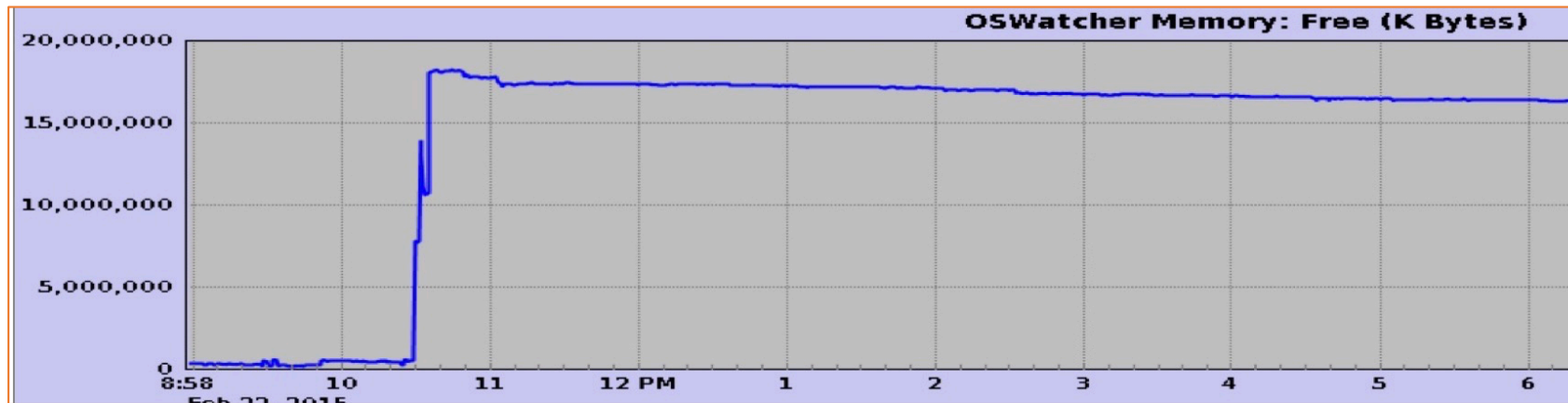
## Oswatcher (2)

- Data can be analyzed using "oswbba" (X-GUI required)

```
java -jar ./tfa/ext/oswbb/oswbba.jar -i
/opt/oracle.ahf/data/repository/suptools/training19c/oswbb/oracle/archive/

Starting OSW Analyzer V8.3.0
[...]
Enter 1 to Display CPU Process Queue Graphs
Enter 2 to Display CPU Utilization Graphs
Enter 3 to Display CPU Other Graphs
Enter 4 to Display Memory Graphs
Enter 5 to Display Disk IO Graphs
Enter 61 to Display Individual OS Process I/O RPS Graphs
Enter 62 to Display Individual OS Process I/O WPS Graphs
Enter 63 to Display Individual OS Process Percent User CPU Graphs
Enter 64 to Display Individual OS Process Percent System CPU Graphs
Enter 65 to Display Individual OS Process Percent Total CPU (User + System) Graphs
Enter 66 to Display Individual OS Process Percent Memory Graphs
```

## Oswatcher (3) - Graphs



# procwatcher

- Monitors database and clusterware processes (very often in connection with oradebug or OS tools)
- Collects stack traces, wait chains, lock information, current SQL
- Results can be uploaded to Oracle Support
- Example:

```
oracle@training19c: /opt/oracle.ahf/bin/tfactl prw start
Tue Dec 3 18:00:30 CET 2019: Starting Procwatcher as user oracle
[...]
```

Procwatcher files will be written to:

```
/opt/oracle.ahf/data/repository/suptools/prw/oracle
[...]
```

```
oracle@training19c /opt/oracle.ahf/bin/tfactl prw stop
[...]
```

```
Tue Dec 3 18:01:32 CET 2019: Stopping Procwatcher
Tue Dec 3 18:01:33 CET 2019: Procwatcher Stopped
```

# pstack

- Process stack for a given process
- Usage:

Can be PID or part of process name

```
Tfactl pstack <pattern>
```

- Example:

```
oracle@training19c: ps -ef |grep smon
oracle 7105 1 0 16:13 ? 00:00:00 ora_smon_TVDNCDB
oracle@training19c: /opt/oracle.ahf/bin/tfactl pstack 7105
```

Output from host : training19c

```

pstack output for pid : 7105
#0 0x00007fc12549e3ca in semtimedop () from /lib64/libc.so.6
#1 0x0000000012915895 in sskgpwwait ()
#2 0x0000000012911b6b in skgpwwait ()
[...]
```

# Summary & Further Information

# Summary

- + TFA/AHF is a collection of helpful tools
  - + But perhaps you already developed similar tools (e.g. ps, grep tail)
  - + Probably not all tools are useful for you (some are cluster specific)
  - + But maybe you have your own tools for similar tasks (all DBAs have the same problems 😊 )
- + Integrating all the support tools in a single package is a good idea
- + logfile collection, stripping and compression
- + ADR management
- + even more beneficial when used on a cluster
- Versioning, packaging and installation procedures are very "dynamic"

There's much more in TFA than shown in this presentation 😊

# Further Information

- MOS-Notes
  - TFA Collector - TFA with Database Support Tools Bundle (Doc ID 1513912.1)
  - Autonomous Health Framework (AHF) - Including TFA and ORAchk/EXAchk (Doc ID 2550798.1)
  - oratop - Utility for Near Real-time Monitoring of Databases, RAC and Single Instance (Doc ID 1500864.1)
  - Procwatcher: Script to Monitor and Examine Oracle DB and Clusterware Processes (Doc ID 459694.1)
  - OSWatcher Analyzer User Guide (Doc ID 461053.1)
- Documentation
  - <https://docs.oracle.com/en/engineered-systems/health-diagnostics/autonomous-health-framework/> (as PDF 512 pages)
- Websites/Blog-Posts
  - <https://oracle-base.com/articles/misc/trace-file-analyzer-tfa>
  - <https://oracle-base.com/articles/misc/autonomous-health-framework-ahf>

# Questions & Answers

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