

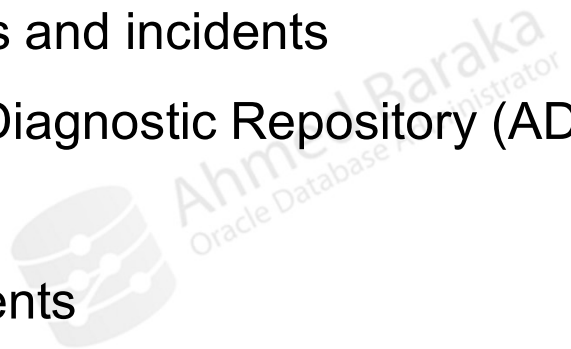
Using ADR Command Interpreter

By Ahmed Baraka

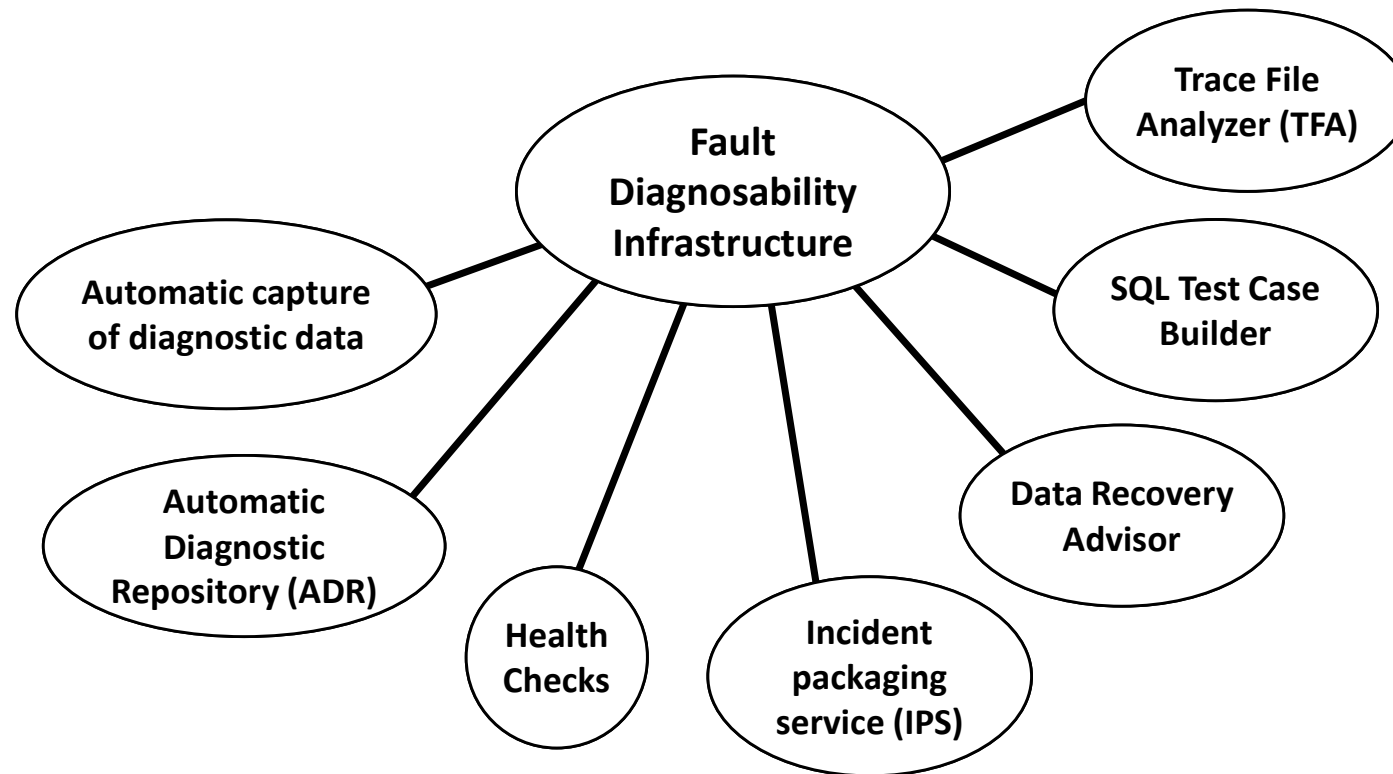
Objectives

In this lecture, you will learn how to perform the following:

- Describe fault diagnosability infrastructure
- Understand the problems and incidents
- Describe the Automatic Diagnostic Repository (ADR)
- Use `adrci` utility
- Package database incidents
- Set and apply ADR purging policies



Fault Diagnosability Infrastructure (FDI)

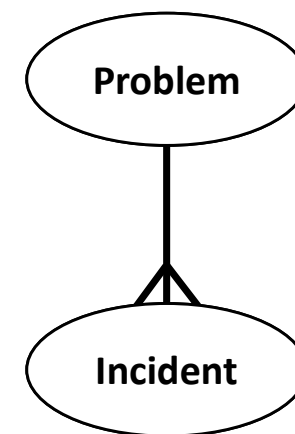


Fault Diagnosability Infrastructure Components

- **Automatic Diagnostic Repository (ADR):** centralized repository for storing diagnostic files.
- **Alert Log** file: history of the database operations and alerts
- **Trace** Files: contain detailed information about the actions performed by the database component
- **Dump** files: can contain a wide range of information, including stack traces, memory dumps, and other diagnostic data
- **Core** Files: are generated when a process crashes or got a critical error
- **Debug** Logs: contain information related to the debugging of issues and errors
- **DDL** Logs: are files that contain information about the Data Definition Language (DDL) statements executed against the database

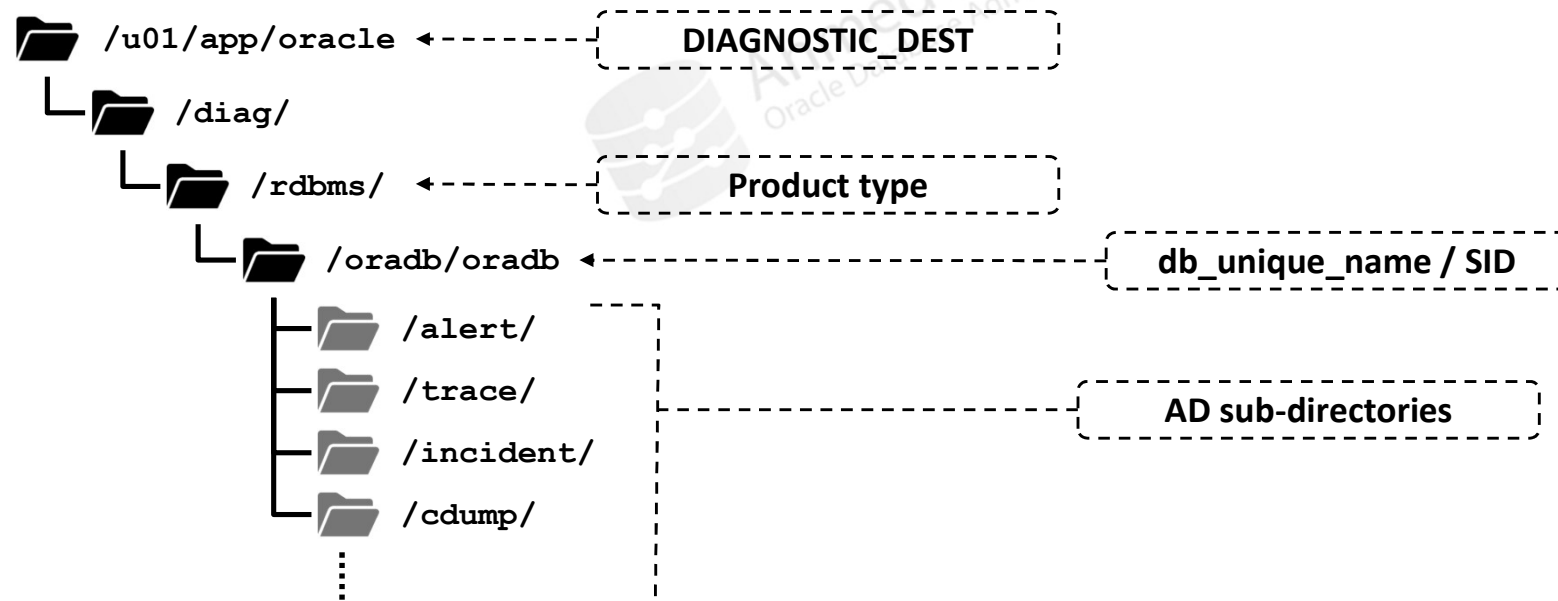
Problems and Incidents

- A **problem** is a critical error in a database instance, Oracle Automatic Storage Management (Oracle ASM) instance, or other Oracle product or component.
 - `ORA-00600`
 - Severe errors, such as `ORA-07445` (OS)
 - `ORA-04031` (out of memory in the shared pool)
- An **incident** is a single occurrence of a problem.
- When an incident is raised:
 - Assign an incident ID
 - Recorded in the alert log file
 - Dump files are generated in Automatic Diagnostic Repository (ADR)



About the Automatic Diagnostic Repository (ADR)

- The location of each ADR home is given by the following path:
 - `<ADR Base>/diag/<product_type>/<product_id>/<instance_id>`
 - ADR Base is defined by the initialization parameter `DIAGNOSTIC_DEST`
- Example an Oracle database home:



About Alertlog File

- A chronological log of messages about the major database operations and errors.
- Database alert log file is available in XML and text formats
- The XML-format is located in:
 - `<ADR Base>/diag/rdbms/dbname/sid/alert`
- The text-format is located in:
 - `../diag/rdbms/dbname/sid/trace/alert_<sid>.log`
- Can be viewed by `adrci` or with any editor

About adrci Tool

- Is a command-line tool (introduced in 11g) that you use to manage ADR data:
 - View diagnostic data within the ADR
 - Package incident information into a zip file for transmission to Oracle Support
 - View Health Monitor reports
- **Terms:**
 - **Problem key:** Error-code plus any error parameters, like **ORA-600**
 - **Incident Package:** a collection of data about incidents for one or more problems
 - **ADR home:** the root directory for all diagnostic data for a particular instance of a particular Oracle product or component
 - **Homepath:** determines the ADR homes that are current

Starting `adrci` in Interactive Mode

- To start the utility:

```
$ adrci
ADRCI: Release 19.0.0.0.0 - Production on Mon Jun 6 10:26:25 2022
Copyright (c) 1982, 2019, Oracle and/or its affiliates.
ADR base = "/u01/app/oracle"
adrci>
```

- To view a list of `adrci` commands: `help`
- To get help for a specific command: `help <command>`
- To exit, use either of the command `exit` or `quit` (case insensitive)

Setting the ADRCI Homepath

- To display the ADR base directory:

```
adrci> show base
```

- To display homes under the ADR root:

```
adrci> show homes [-All | rdbms]
```

- To display the current ADR homepath (identical to **show homes**):

```
adrci> show homepath
```

- To set the current ADR home:

```
adrci> set homepath diag\rdbms\ora11g\ora11g
```

Viewing alertlog File in adrci

- By default, adrci displays the alert log in your default editor. To change it:

```
adrci> set editor vi
```

- To display contents of the alert log file:

```
adrci> show alert
```

- To see only the last 10 messages in the alert:

```
adrci> show alert -tail 10
```

- To display messages containing ORA-xxx errors:

- Issue the command 'help show alert' to see list of available predict strings.

```
adrci> show alert -p "MESSAGE_TEXT LIKE '%ORA-600%'"
```

Viewing Incidents

- To display all the incidents:

```
adrci> show incident  
adrci> show incident -mode brief  
adrci> show incident -mode detail
```

- To display more detailed incident report for specific incident:

```
adrci> show incident -mode detail -p "incident_id=5857"
```

Finding Trace Files

- To display all trace files:

```
adrci> show tracefile
```

- To display the trace files that have the string **mmon** in their file names:

```
adrci> show tracefile %mmon%
```

- To display the modified date/time (and order by it):

```
adrci> show tracefile -t
```

- To display trace files in reverse order of last modified time:

```
adrci> show tracefile -rt
```

- To display trace files related to specific incident number:

```
adrci> show tracefile -i 5854
```

Packaging Incidents

1. Create a logical incident package
 2. Add diagnostic information to the incident package
 3. Generate the physical incident package
- All the steps are implemented using the Incident Packaging Service (IPS) commands



Ahmed Baraka
Oracle Database Administrator

Creating a Logical Incident Package

- To create an empty logical incident package:

```
adrci> ips create package
```



Add Diagnostic Information to the Incident Package

- To add diagnostic data to the logical package

```
adrci> ips add incident 112564 package 1
```

- To add a specific file that is within the ADR base directory hierarchy:

```
adrci> ips add file <full-file-name> PACKAGE <package_number>
```



Creating Logical Package and Adding Files in the Same Command

- Create a package and includes diagnostic information for incidents that reference a specified problem ID/key:

```
adrci> ips create package problem <problem-id>  
adrci> ips create package problemkey '<problem-key>'
```

- Create a package and include incidents happened n seconds ago till now:

```
adrci> ips create package seconds <n>
```

- To include incidents happened between two times:
 - Time must be in the format 'YYYY-MM-DD HH24:MI:SS.FF TZR' (FF optional)

```
adrci> ips create package time 'start time' TO 'end time'  
  
adrci> ips create package time '2022-07-24 00:00:00 -07:00' to  
'2022-07-30 23.59.59 -07:00'
```

Generating a Physical Incident Package

- To generate a complete physical package:

```
adrci> ips generate package <package_number> IN <path>
```



Purging ADR Diagnostic Data

- To display the current purging policy on the current home (output formatted):

```
adrci> show control
```

```
ADR Home = /u01/app/oracle/diag/rdbms/oradb/oradb:
```

```
*****
```

ADRID	SHORTP_POLICY	LONGP_POLICY
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814298798	720	8760
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- ADR purge policy is automatically implemented on Oracle database home but needs to be manually applied on other homes

ADR Purging Policy Attributes

Attribute Name	Description
SHORTP_POLICY	<p>Number of hours after which to purge ADR contents that have a short life. Default is 720 (30 days).</p> <p>It affects the following data:</p> <ul style="list-style-type: none">• Trace files, including those files stored in the cdmp_timestamp subdirectories• Core dump files• Packaging information
LONGP_POLICY	<p>Number of hours after which to purge ADR contents that have a long life. Default is 8760 (365 days).</p> <p>It affects the following data:</p> <ul style="list-style-type: none">• Incident information• Incident dumps• Alert logs

Managing ADR Purge

- To change the default purge policy for the current home:

```
adrci> set control (SHORTP_POLICY = 360)
adrci> set control (LONGP_POLICY= 2190)
```

- To manually purge ADR data on the current home:

```
adrci> purge
```

- To alter the default purge behavior:

```
# Manually initiate purge of trace files based on defaults.
adrci> purge -type TRACE

# Purge everything older than 1 month.
adrci> purge -age 43200
```

A Note About Incidents

- Whether an issue is an incident or not is decided by the database:
 - Do not assume all the database issues will be caught by adrci



Summary

In this lecture, you should have learnt how to perform the following:

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