

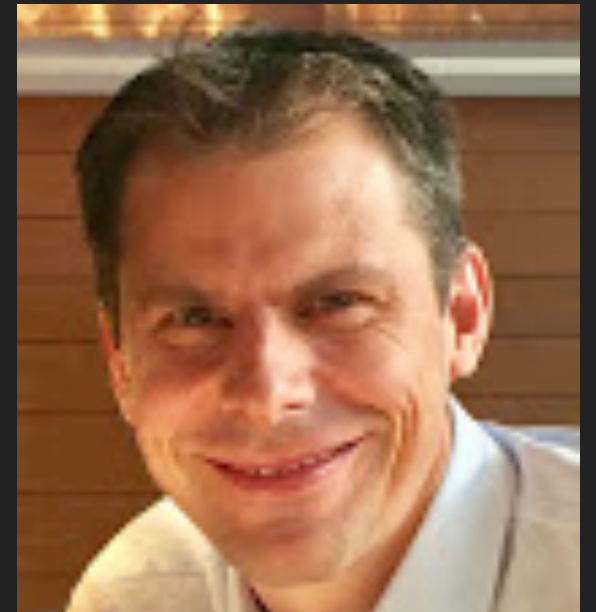


DIMITRI GIELIS

**BRING THE LIGHT INTO YOUR
ALWAYS FREE AUTONOMOUS CLOUD**

ABOUT ME

- ▶ Founder & CEO of APEX R&D
- ▶ 20+ years of Oracle Experience (OCP & APEX Certified)
- ▶ Oracle ACE Director
- ▶ "APEX Developer of the year 2009" by Oracle Magazine
- ▶ "Oracle Developer Choice award (ORDS)" in 2015
- ▶ Author Expert Oracle APEX
- ▶ Presenter at Conferences





APEX Office Print



APEX Media Extension



APEX Project Eye



Plug-ins Pro

DGIELIS.BLOGSPOT.COM

@DGIELIS

Dimitri Gielis Blog (Oracle Application Express - APEX)

I created this Blog to share my knowledge especially in Oracle Application Express (APEX) and my feelings ...

MONDAY, MARCH 02, 2020

APEX Media Extension (AME) Publicly Available

After two months of [beta testing](#), we have released the first production version of [APEX Media Extension v20.1](#).

I'm extremely proud to bring our second product to the Oracle and APEX community. With our first product, [APEX Office Print](#) (AOP), we wanted to make the Printing and Exporting of documents easy. With **APEX Media Extension (AME)** we want to make the processing of media easy for any Oracle database and Oracle APEX developer!



We got the idea of doing this product when Oracle Intermedia/Multimedia became decommissioned in the Oracle database, but we still needed the manipulation of images in our projects. We did research on the best use of existing tools, but it always seemed we couldn't rely on any one tool and we needed different tools and custom code to come to a solution.

In our first release of AME, you will find the **following features**:

- resize images
- rotate and flip images
- crop images
- add one or more watermarks or overlays (images and text) to images
- compress images

My next public appearances:

- [APEX World: 16/17-MAR-2020](#)
- [APEX Alpe Aldria: 24-APR-2020](#)
- [APEX Connect: 5/7-MAY-2020](#)
- [ODTUG KScope: 28/02-JUN-2020](#)
- [Oracle Open World: 6/9-OCT-2020](#)

About Me



 [Dimitri Gielis](#)

Passionate about Oracle and especially Oracle Application Express (APEX). Founder of [AOP](#) and [APEX R&D](#), a company that provides Development, Training and Consulting in APEX.

 [View my complete profile](#)

**ORACLE**
ACE Director





APEXd2d

Real-time problem-solving for APEX developers by APEX developers



Sign-up to help or get info @

apexd2d.net

1st event:



Oracle Cloud Free Tier



New Always Free Services

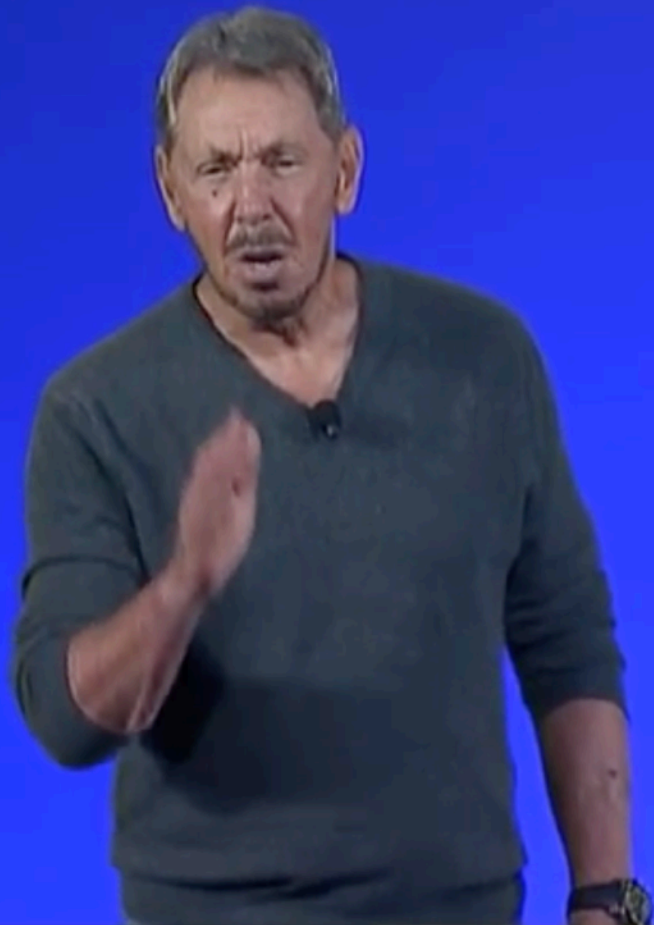
Build, test, and deploy applications on Oracle Cloud—for free. Sign up once, get access to two free offers.

[Start for free](#)

[Sign in to Cloud](#)



ORACLE OPEN WORLD 2019



Always Free – What's Included



Autonomous Database

2 x Databases
20 GB each



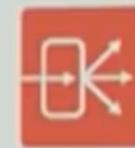
Compute

2 x VMs
1 GB Memory each



Storage

100 GB Block
10 GB Object
10 GB Archive



Networking/ Load Balancing

10 Mbps LB
10 TB Outbound
Data Transfer



Monitoring / Notifications

500M Metrics Ingestion
1B Metrics Retrieval
1M Notifications
1K Emails

Available to All New and Existing Cloud Accounts



Always Free Oracle Autonomous Database



- **Always Free: Two Databases per Cloud Tenancy**
 - Each Database gets 1 OCPU and 20 GB storage
- **Free Tools** for Application Development
 - APEX for low-code, web-based app development
 - SQL Developer Web for database development
 - SQL Notebooks for Machine Learning
 - Automatic REST for easy access and publishing of DB data
 - Drivers for all popular programming languages



JANUARY 13TH, 2021



Oracle APEX Application Development Service

Low cost, elastic

Fully managed, mission-critical stack for \$360/month

- \$240 per OCPU and \$120 per TB per month

Automatically scales up and down - supports dozens to millions of users

- Scales up to 128 OCPUs and 500TB storage
- Each OCPU supports hundreds of thousands of page views per hour

No extra fees per user, per developer, or per application

Try APEX Service on Oracle Cloud Free Tier



DEMO



ORACLE Cloud

Search for resources, services, and documentation

US East (Ashburn) ▾



APEX Application
Development

APEX Instances *in* dimi (root) *Compartment*

Oracle APEX Application Development (APEX Service) provides low-code development and deployment of APEX applications in OCI - with Autonomous Database included. [Learn more.](#)

APEX Instances

List Scope

Compartment

dimi (root) ▾

Filters

Create APEX Service

Name	State	Type	Database Name	OCPUs	Storage	Created ▾
APEXDIMI Always Free	● Available	APEX	APEXDIMI	1	20 GB	Tue, Oct 12, 2021, 14:58:03 UTC ⋮
DBDIMI Always Free	● Available	Transaction Processing	DBDIMI	1	20 GB	Sun, Sep 15, 2019, 23:33:43 UTC ⋮

Showing 2 Items < 1 of 1 >

Dimitri Gielis Blog (Oracle Application Express - APEX)

I created this Blog to share my knowledge especially in Oracle Application Express (APEX) and my feelings ...

TUESDAY, SEPTEMBER 17, 2019

Best and Cheapest Oracle APEX hosting: Free Oracle Cloud

I really have to write about the [Oracle Cloud Free Tier](#) as it's the third time in my career I've been blown away by Oracle.

The first time was when I first saw and worked with the [Oracle Database](#), the second time when I saw HTMLDB (now [APEX](#)) and today, again, with the announcement of the [Free Autonomous Oracle Cloud](#).

The Free Oracle Tier is a hardcore smackdown on any other cloud offering which includes a virtual machine, database, and development environment!



The Free Oracle Cloud was announced by Andy Mendelsohn at Oracle Open World 2019. You get a free Oracle Autonomous Database, 2 Virtual Machines (Compute), Storage and other services:

What are Always Free cloud services?

My next public appearances:

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- [Oracle Open World: 6/9-OCT-2020](#)

About Me



 [Dimitri Gielis](#)

Passionate about Oracle and especially Oracle Application Express (APEX). Founder of [AOP](#) and [APEX R&D](#), a company that provides Development, Training and Consulting in APEX.

 [View my complete profile](#)



Printing in Oracle APEX?

Check [APEX Office Print](#).



TOPICS 1/5 AUTONOMOUS DATABASE

1. Sign-up for Free Oracle Cloud
2. Setup Autonomous Transaction Cloud (ATP)
3. Connecting with SQL Developer (Desktop) to ATP
4. Connecting with SQL Developer Web to ATP
5. Setup APEX in ATP and create the first APEX app

TOPICS 2/5 AUTONOMOUS DATABASE

6. Create a VM Instance (Compute Cloud)
7. Setup a Webserver on the Compute Instance (VM)
8. Setup APEX Office Print (AOP) to export to PDF, Excel, Word, Powerpoint, HTML and Text
9. Setup Object Storage and use for File Share and Backups
10. Running SQLcl and Datapump from the Compute Instance (VM) to ATP

TOPICS 3/5 AUTONOMOUS DATABASE

- 11. Sending Emails with APEX_MAIL on ATP
- 12. Create a 2nd Compute Instance and a Load Balancer
- 13. Final things to take away
- 14. Message: Your Oracle Cloud Free Trial has expired
- 15. Error: The request could not be mapped to any database

TOPICS 4/5 AUTONOMOUS DATABASE

- 16. Renewing Let's Encrypt certificate
- 17. Configure domain to redirect to APEX app
- 18. Monitoring your website and APEX app
- 19. Oracle APEX upgrades (19.1 to 19.2)
- 20. More info on Oracle Database upgrades

TOPICS 5/5 AUTONOMOUS DATABASE

21. More info on Oracle APEX upgrades

22. Custom Domain Name (URL) with your own ORDS on the Webserver

Dimitri Gielis Blog (Oracle Application Express - APEX)

I created this Blog to share my knowledge especially in Oracle Application Express (APEX) and my feelings ...

FRIDAY, JANUARY 15, 2021

My spin on the new Oracle APEX Application Development Service

I believe there have never been bigger announcements surrounding Oracle Application Express (APEX) than in the last weeks (or actually months). **Oracle is really putting cannons on the marketing of Oracle APEX now!**

In the Oracle APEX community, we typically come together at the many APEX conferences in the world. Things changed with COVID and while all the conferences got canceled, the awareness of Oracle APEX rose significantly. Oracle setup special forces to build COVID apps (including Larry Ellison himself!)... and used Oracle APEX to do so. Those apps were mentioned in the White House and many different articles around the world. Not only on the outside things changed, but also on the inside at Oracle, the view towards APEX changed a lot. Oracle APEX finally received the recognition of the leadership team we already knew it deserved for 15 years. And once Larry Ellison, Safra Catz, and the entire management and marketing team get behind something, it's unstoppable.

It started on December 8th through the 10th, 2020, with the Build Low Code Apps using APEX - Partner Technical Council 2020, where Joel Kallman and many people of the APEX Development team gave an update and did Q&A with the audience.

December 16th, 2020, with the Virtual Summit Build Applications Faster with Low Code. There were different presentations, but the biggest impact came from Michael Hichwa, the father of Oracle APEX, who announced the new Oracle APEX Application Development Service.

On January 13th, 2021, Andrew Mendelsohn, executive vice president of Oracle database server technologies, presented the latest announcements about Oracle Database 21c and the new Oracle Application Express (APEX) low-code application development service.



My next public appearances:

- Currently none scheduled

About Me



 [Dimitri Gielis](#)

Passionate about bringing ideas to life with code. Founder and CEO of United Codes and APEX R&D. Loves the Oracle Database and Oracle Application Express (APEX).

 [View my complete profile](#)



Great to use with Oracle APEX

Need to export to PDF, Excel, HTML, ... or print data in the Oracle database and APEX?



Need to manipulate images and other media in the Oracle database and APEX?



TOPICS APEX SERVICE

1. Setup Oracle APEX Application Development Service (include configure of email sending)
2. Import an existing Oracle APEX app and Oracle database schema
3. Configure printing and exporting
4. Configure media conversion
5. Create a custom domain name - vanity URL
6. Setup and test automated scaling
7. Configure, running and using backups
8. ~~Connecting from external tools e.g. Visual Studio Code and SQL Developer~~
9. Monitor your Oracle APEX instance
10. Final thoughts

THURSDAY, APRIL 22, 2021

Which one to pick: Free APEX Service vs Free Oracle Autonomous DB

I'm a big fan of the Free Oracle Cloud as it allows Oracle APEX, Oracle Database, web developers, or more generally, everybody, to get started doing their thing. If you want to get going, I previously did a series you may want to read called [Best and Cheapest Oracle APEX hosting: Free Oracle Cloud](#).

A few days ago Oracle [announced](#) the free offering for the Oracle APEX Service. I previously started on a series on this new APEX service [My spin on the new Oracle APEX Application Development Service](#). I still have to continue that series, but I first thought to write now that it's available for free, about which one to pick. The Free Oracle Autonomous DB which comes with APEX or the Free APEX Service which comes with the Oracle DB?

All-in-all both services are very similar, but the decision is very easy for me. Ask these two questions to yourself:

Do I want to have SQL*net access (e.g. connect with SQLcl, SQL Developer, or Visual Studio Code)?

If the answer is yes, you need to go with the Oracle Autonomous Database as of the time of writing SQL*net access isn't available for the APEX Service.

Do I want to upgrade my free service to a paid service at some point?

The APEX Service is unbelievable value for money, and 1/3 of the price of the Autonomous Database, so if you ever want to upgrade in one click to a paid version of the APEX Service, you want to start from the free APEX Service. You can't go from the Autonomous DB to the APEX Service, so the one you pick decides where you upgrade to.

Combining both ...

TOPICS IN THIS PRESENTATION

1. Moving your data and APEX app to the Cloud
2. Getting more storage by using Advanced Compression
3. Performance & Uptime Monitoring

DEMO

YOUR DATABASE IN THE FREE ATP CLOUD

- ▶ Starting from scratch (use APEX)
 - ▶ QuickSQL is useful
 - ▶ Create app on top of script
- ▶ Existing database (use Cli)
 - ▶ Import datapump
 - ▶ Import APEX app

EXPORT DATABASE AND APEX APP

- ▶ Export database
 - ▶ expdp
 - ▶ transfer file
- ▶ Export (Workspace and) APEX app

IMPORT DATABASE AND APEX APP

- ▶ Upload datapump export to Object Storage
 - ▶ `oci os object put -bn clibucket --file export.dmp`
- ▶ Create user with default tablespace DATA
 - ▶ `CREATE USER <user> IDENTIFIED BY <pwd> DEFAULT TABLESPACE DATA TEMPORARY TABLESPACE TEMP;`
 - ▶ Add grants
 - ▶ `ALTER USER <user> QUOTA UNLIMITED ON DATA;`

IMPORT DATABASE AND APEX APP

- ▶ Import the datapump export
 - ▶ `impdp admin@dbdimi_high directory=data_pump_dir credential=def_cred_name dumpfile=https://objectstorage.us-...dmp remap_tablespace=...:data`
- ▶ Create new Workspace in APEX Builder (INTERNAL)
- ▶ Import the APEX app in the new Workspace

ADVANCED COMPRESSION



ADVANCED COMPRESSION

- ▶ **CREATE TABLE ... ROW STORE COMPRESS ADVANCED**
- ▶ **ALTER TABLE ... (MOVE) ROW STORE COMPRESS ADVANCED**

CREATE COMPRESSED TABLE

```
▶ CREATE TABLE DIMI_COMPRESSED  
  (OWNER          VARCHAR2(128) NOT NULL ENABLE,  
   OBJECT_NAME VARCHAR2(128) NOT NULL ENABLE,  
   MODIFIED_V    NUMBER)  
  ROW STORE COMPRESS ADVANCED;
```

CHECK THE COMPRESSION

```
▶ SELECT
  TABLE_NAME,
  NUM_ROWS,
  round(BLOCKS*8/1024,2) AS SIZE_MB,
  COMPRESSION
FROM USER_TABLES
```

TABLE_NAME	NUM_ROWS	SIZE_MB	COMPRESSION
DIMI_NOT_COMPRESSED	11906	1.74	DISABLED
DIMI_COMPRESSED	11906	.51	ENABLED

DEMO

PERFORMANCE MONITORING

ORACLE Cloud

Search for resources and services

US East (Ashburn)

Autonomous Database » Autonomous Database Details

ATP

AVAILABLE

DBDIMI

Always Free

DB Connection

Performance Hub

Service Console

Scale Up/Down

More Actions

Autonomous Database Information

Tools

Tags

General Information

Database Name: DBDIMI

Workload Type: Transaction Processing

Compartment: dimi (root)

Infrastructure

Dedicated Infrastructure: No

Backup

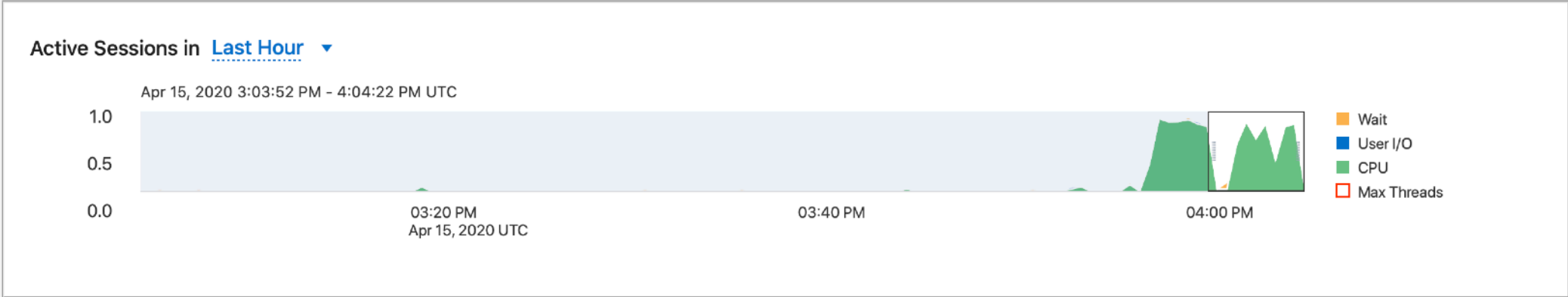
DASHBOARD: PERFORMANCE HUB

DBDIM1

Performance Hub

Refresh

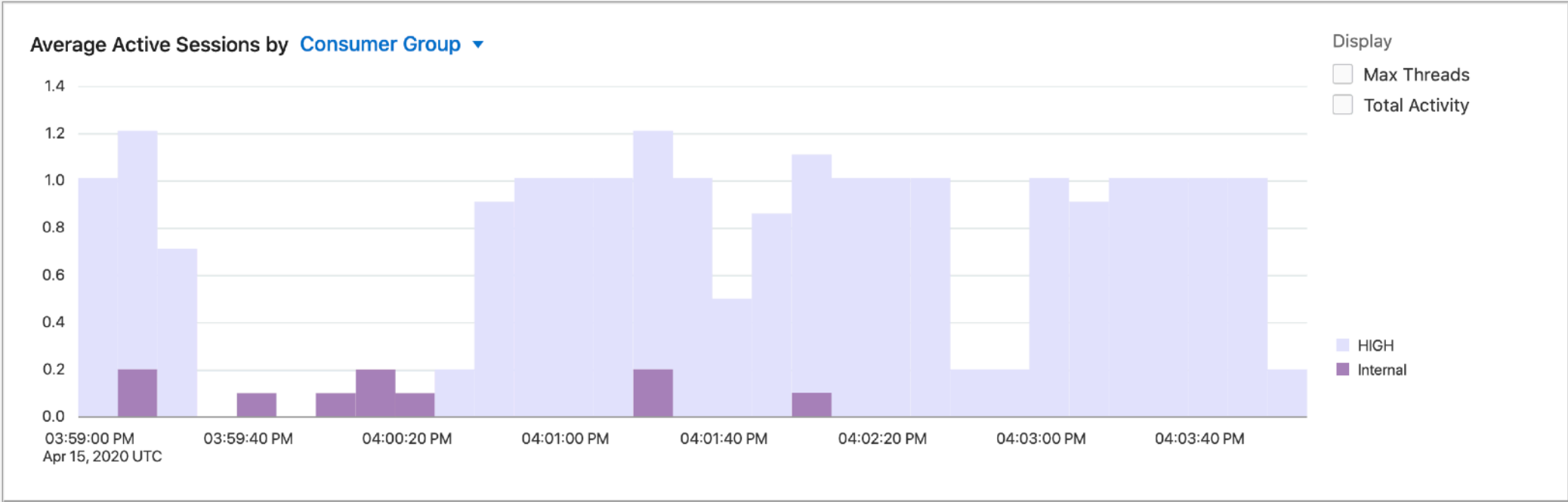
Time Range ⓘ



ASH Analytics SQL Monitoring

Applied Filters: None

View Options



SQL ID ▾ by Consumer Group

Columns ▾

SQL ID	Activity (Average Active Sessions)	SQL Type
--------	------------------------------------	----------

User Session ▾ by Consumer Group

Columns ▾

User Session	Activity (Average Active Sessions)	User Name
--------------	------------------------------------	-----------

DASHBOARD: SERVICE CONSOLE

Autonomous
Transaction Processing

- Overview
- Activity
- Administration
- Development

DATABASE
DBDIMI

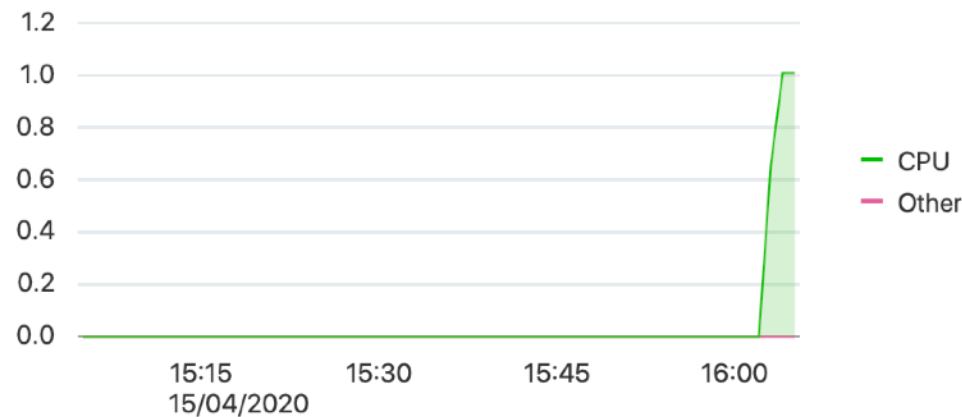
Monitor

Real time

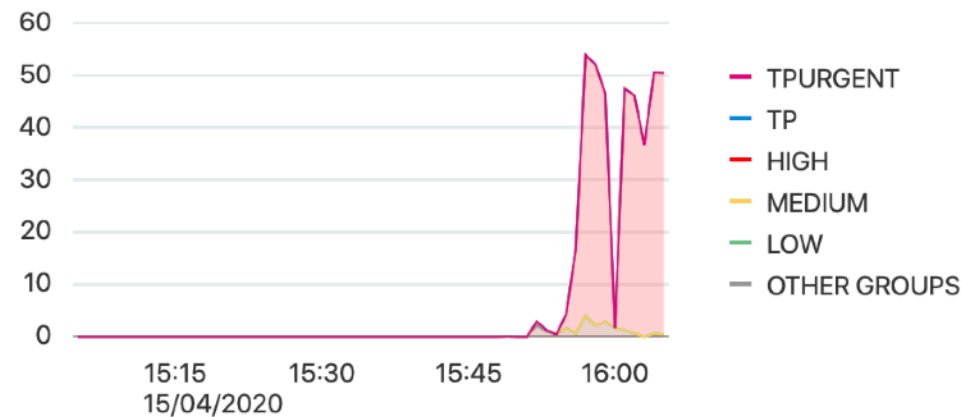
Time period

Monitored SQL

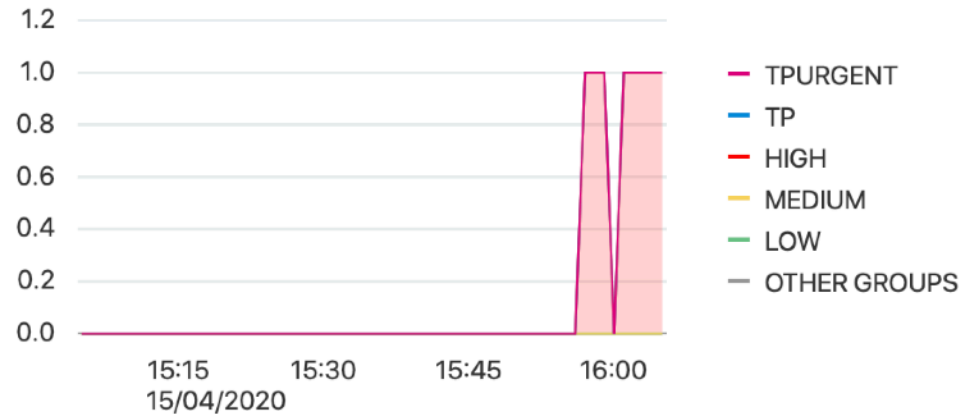
Database Activity



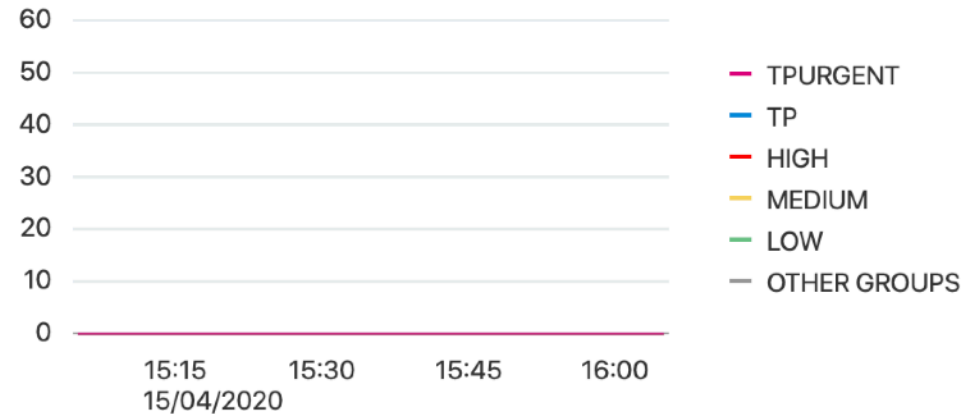
CPU Utilization (%)



Running Statements



Queued Statements



MONITORING: ALARMS AND HEALTH CHECKS

UPTIME MONITORING

ORACLE Cloud

Search for resources and services

Core Infrastructure

Compute >

Block Storage >

Object Storage >

File Storage >

Networking >

Database

Autonomous Data Warehouse

Autonomous Transaction Processing

Bare Metal, VM, and Exadata

Data Safe

Exadata Cloud at Customer

NoSQL Database

Data and AI

Big Data

Digital Assistant

Data Catalog

Data Flow >

Data Science >

Solutions and Platform

Analytics >

Resource Manager >

Email Delivery >

Application Integration >

Monitoring

Developer Services >

Marketplace >

More Oracle Cloud Services

Platform Services >

Classic Data Management Services >

Service Metrics

COMPARTMENT

dimi (root)

Dimensions [Add](#)

Service Metrics

Metrics Explorer

Alarm Status

Alarm Definitions

Health Checks

MONITORING: ALARMS AND HEALTH CHECKS

Monitoring

- Service Metrics
- Metrics Explorer
- Alarm Status
- Alarm Definitions**
- Health Checks

List Scope

COMPARTMENT

dimi (root)

⌵

Filters

STATE

Any State

⌵

Tag Filters

[add](#) | [clear](#)

no tag filters applied

1 alarms *in* dimi (root) *Compartment*

Create Alarm

Actions ▾

🔍

Search

☐	Alarm name ▲	Metric namespace	Severity	OCID	Suppressed	Enabled
☐	High CPU on Free Oracle Cloud	oci_autonomous_database	Critical	ocid1.alarm.oc1.iad.aaaa...ykoiocq Copy	No	Yes

0 Selected

Showing 1 Item

MONITORING: ALARMS AND HEALTH CHECKS

WHAT TO LOOK FOR

- ▶ Instance available / reachable
- ▶ CPU utilization to check overall computing load
- ▶ Queued statements
(if it is too high, then we need more resources, as our current configuration needs to make them wait)
- ▶ Running statements
(same reason, it is complementary, as then we know how much we are actually serving in comparison with how many statements are waiting)

DEMO

AUTOMATE BACKUPS (APEX APP + DATABASE) * BLOG

- ▶ Bastion machine
- ▶ Setup Cli
- ▶ SQLcl > apex export 101
- ▶ Expdp
- ▶ Combined script
- ▶ Cronjob

WE NEED MORE

CLONE ALWAYS FREE DATABASE



ORACLE Cloud

Search for resources and services

Create Autonomous Database Clone

Clone Type

Full Clone

Creates a new database with source database's data and metadata.



Metadata Clone

Creates a new database that includes all source database schema metadata, but not the source database data.

Clone source



Clone from database instance

Creates a clone of a running database as it currently exists.



Clone from a backup

Use to create a clone of a backup, or to create a point-in-time clone.

Provide basic information for the Autonomous Database

Create in Compartment

diml (root)



Source database name READ-ONLY

CLONE ALWAYS FREE DATABASE

- ▶ Clone and choose database version (18c / 19c)
 - ▶ Great to test upgrades
 - ▶ Metadata (& Data)
- ▶ Increase OCPU Count
 - ▶ Auto scaling: up to 3x the provisioned number of cores (charged for average)

CLONE IN PROGRESS

Autonomous Database » Autonomous Database Details



PROVISIONING...

Clone of DBDIMI

- DB Connection
- Performance Hub
- Service Console
- Scale Up/Down
- More Actions

Autonomous Database Information

Tools

Tags

General Information

Infrastructure

Backup

Network

Database Name:

DB202004152244

Workload Type:

Transaction Processing

Compartment:

dimi (root)

OCID:

...ggufdq

Show

Copy

Created:

Wed, Apr 15, 2020, 20:52:19 UTC

OCPU Count:

1

Storage:

1 TB

License Type:

Bring Your Own License (BYOL)

Database Version:

19c

Auto Scaling:

Enabled

i

Lifecycle State:

Provisioning...

Instance Type:

Paid

Dedicated Infrastructure:

No

Last Automatic Backup:

No active backups exist for this database.

Access Type:

Allow secure access from everywhere

Access Control List:

Disabled

Edit

CLONED ATP VS FREE ATP (1 OCPU)

Worksheet		Query Builder	
1		<code>select count(*) from all_objects connect by level < 2</code>	
2		<code>-- Oracle ATP Free Cloud</code>	

Query Result	
All Rows Fetched: 1 in 168.878 seconds	
	COUNT(*)
1	30316

Worksheet		Query Builder	
1		<code>select count(*) from all_objects connect by level < 2</code>	
2		<code>-- Oracle ATP Clone (Paid) Cloud</code>	

Query Result	
All Rows Fetched: 1 in 130.707 seconds	
	COUNT(*)
1	31013

DEMO

Q&A