GLOC

Great Lakes Oracle Conference

Hands-On with Oracle SOA Cloud Service

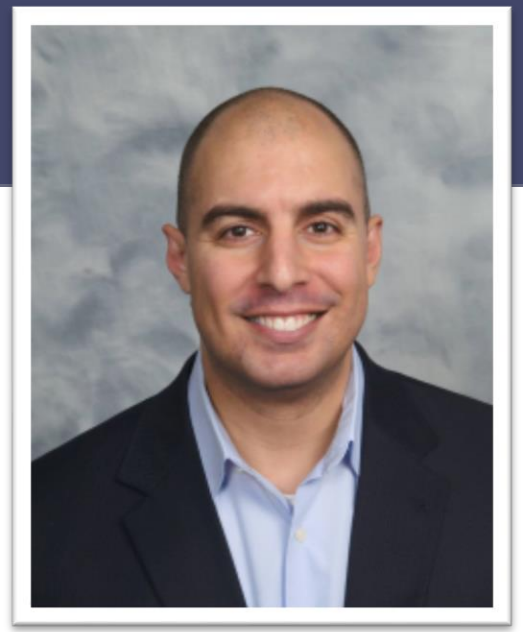
MAY 16 & 17, 2018

CLEVELAND PUBLIC AUDITORIUM,
CLEVELAND, OHIO

WWW.NEOOUG.ORG/GLOC

About

About Me



- Senior Manager at Attain
- 20+ years Oracle experience
- Master's degree in Computer Science from George Mason University
- Past employment with Booz Allen Hamilton, IBM, CSC, and Oracle
- Recent emphasis on DevOps, cloud, and security in current projects
- Oracle ACE, OCE, OCA
- Author, Blogger, Presenter
- @Ahmed_Aboulnaga

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About Attain

- Headquartered in McLean VA
- Management, technology, and strategy consulting firm
- Supporting customers in government, healthcare, education, and nonprofit markets
- Industries:
  - Defense, Civilian, National Security, Federal Health, State and Local Government, and more
- Technology Partners:
  - Oracle, Red Hat, AWS, Salesforce, Microsoft, SAP, MicroStrategy, and more
- CMMI Level 5

Our Vision and Mission

➢ Built-to-last ➢
➢ Next-generation ➢
➢ Values-driven consultancy ➢

This vision is the foundation of Attain's culture. At the core of who we are and how we operate is a sense of purpose: to be and attain the best for those we serve.

Attain's mission is to change the world by disrupting the status quo and improving the lives we touch.

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Cloud Introduction

Why Cloud?

- No need to purchase or maintain hardware
- Less effort spent upgrading and patching
- A slew of other reasons you can find online

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Oracle SOA Cloud Service

- iPaaS = Integration Platform As A Service
- Oracle SOA Cloud Service – latest version 12.2.1.x
- Three offerings:
  - SOA Cloud Service (SOA, OSB, B2B)
  - Managed File Transfer Cloud Service (MFT)
  - API Manager Cloud Service
- Retain full control – root OS and WebLogic administrator access
- Comprehensive CLI and REST interfaces
- Network access via SSH, SQL*Net, JDBC, HTTP, and other drivers
- Simply speaking… Oracle SOA Suite on the cloud

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Oracle Marketing Speak

- “Comprehensive integration” in the cloud
- “Powerful”
- “Simple administration”
- “Save time and money”

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Will Traditional Administrators Become Obsolete?

- Cloud administration skills needed:
  - Everything a traditional administrator knows
  - PaaS and iPaaS architecture and usage
  - Familiarity with cloud tools (e.g., cloud cli, REST services, etc.)
  - Security

- Cloud Strategic Middleware Administrator – top future job role
  - Strategic management of middleware in the cloud
  - Niche skills in multitenancy, tuning, high availability, and security

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Provisioning

Provisioning

- At a high-level:
  - Select instance name and compute shape
  - Setup public key of the SSH key pair
  - Setup administrator accounts
  - Associate to the DBaaS instance
  - Configure load balancer
  - Reference the storage container (for backups)
- Provisioning an Oracle SOACS environment… for a future presentation

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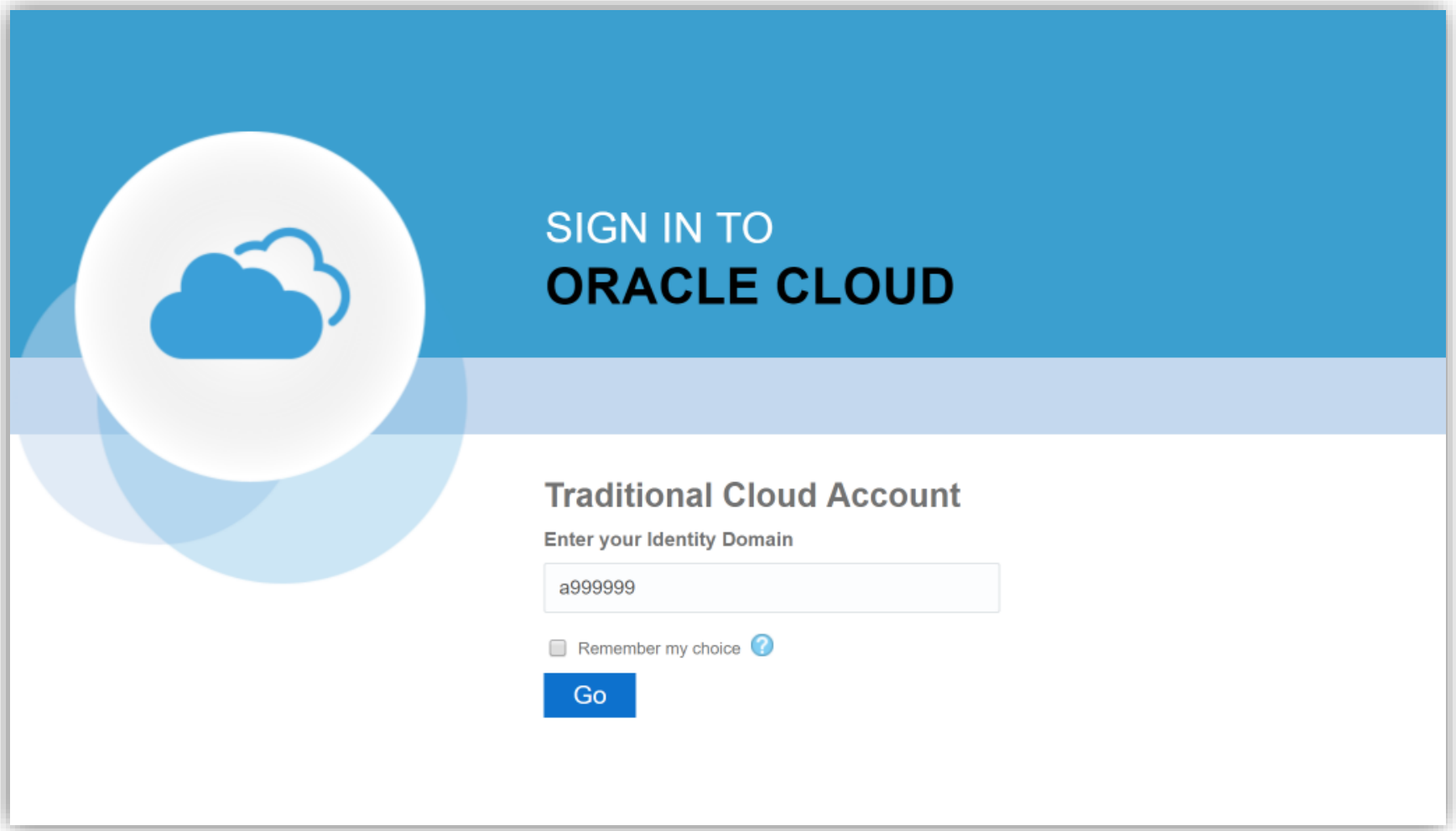
Logging in to ‘My Account’

The ‘Identity Domain’



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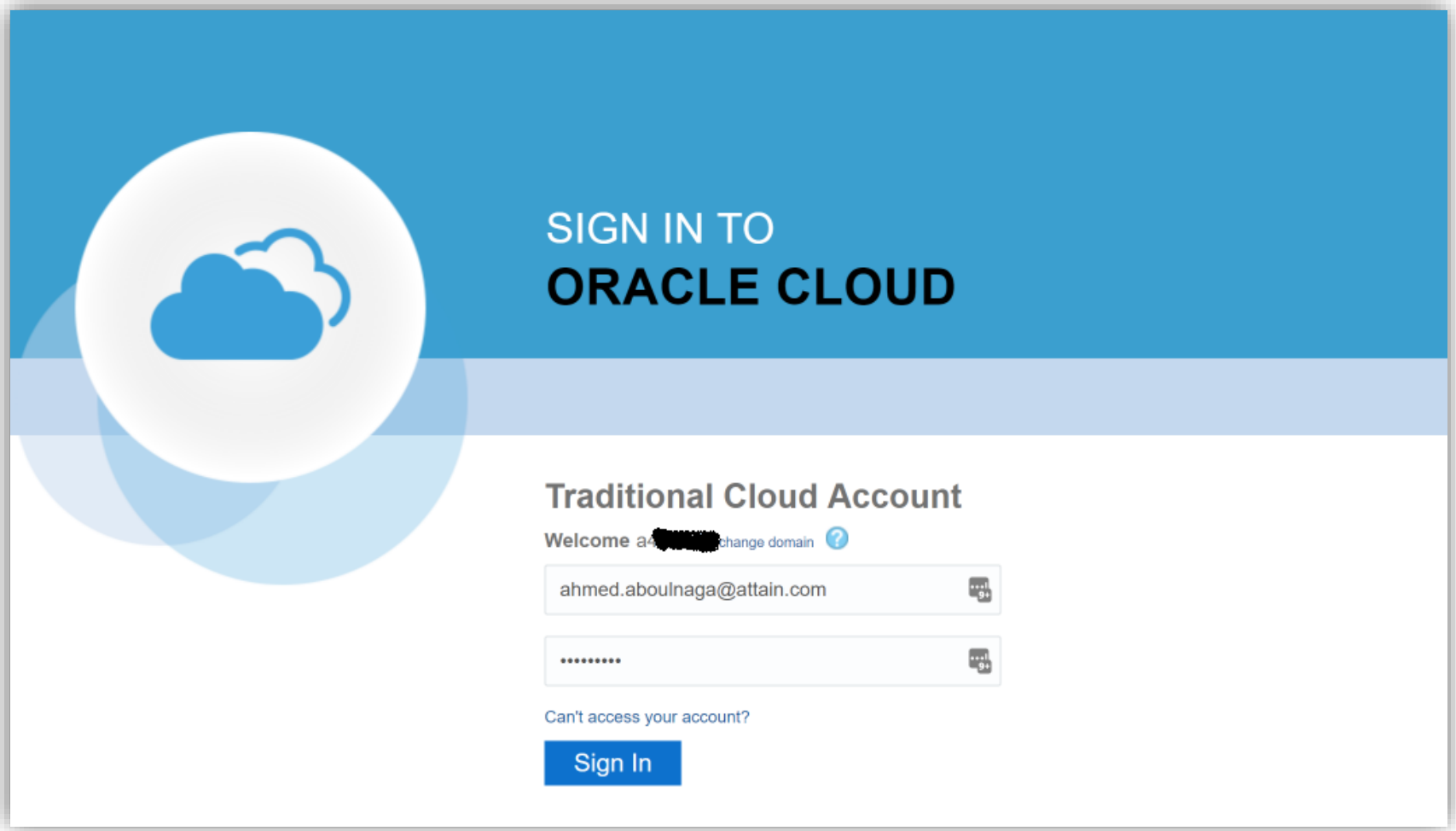
Logging in to ‘My Account’



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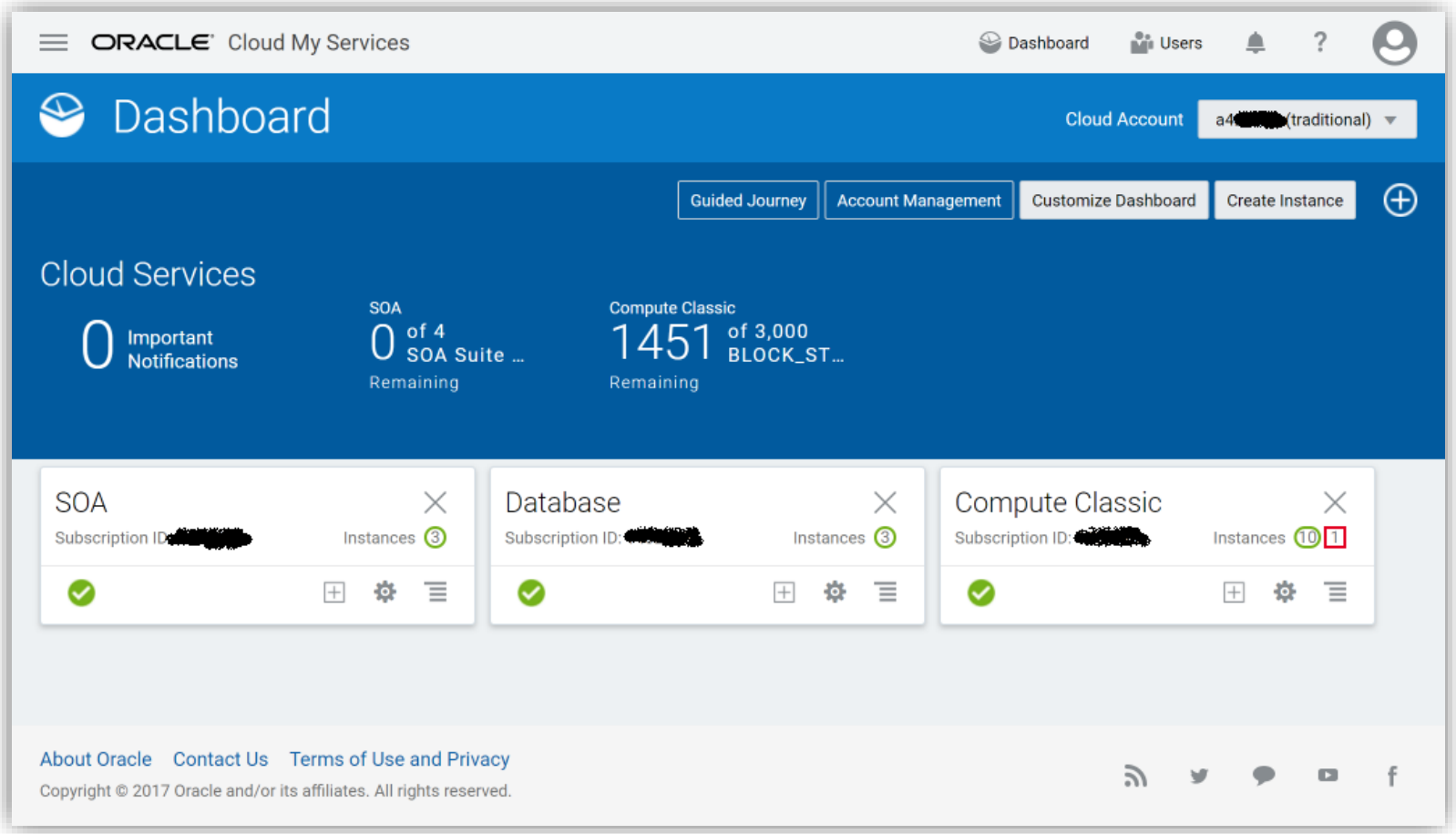
My Account Dashboard

- Not used for services management



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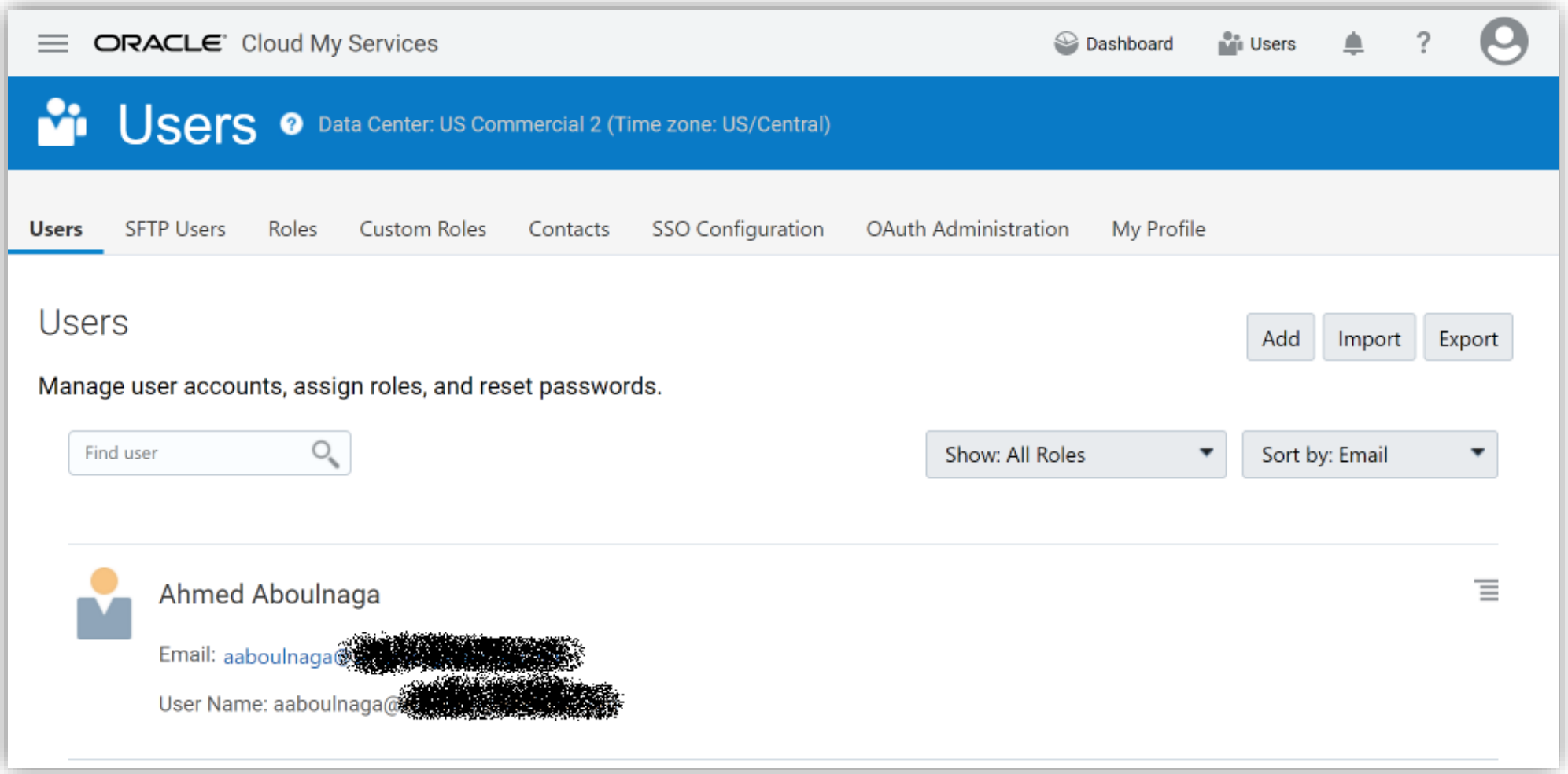
User Management



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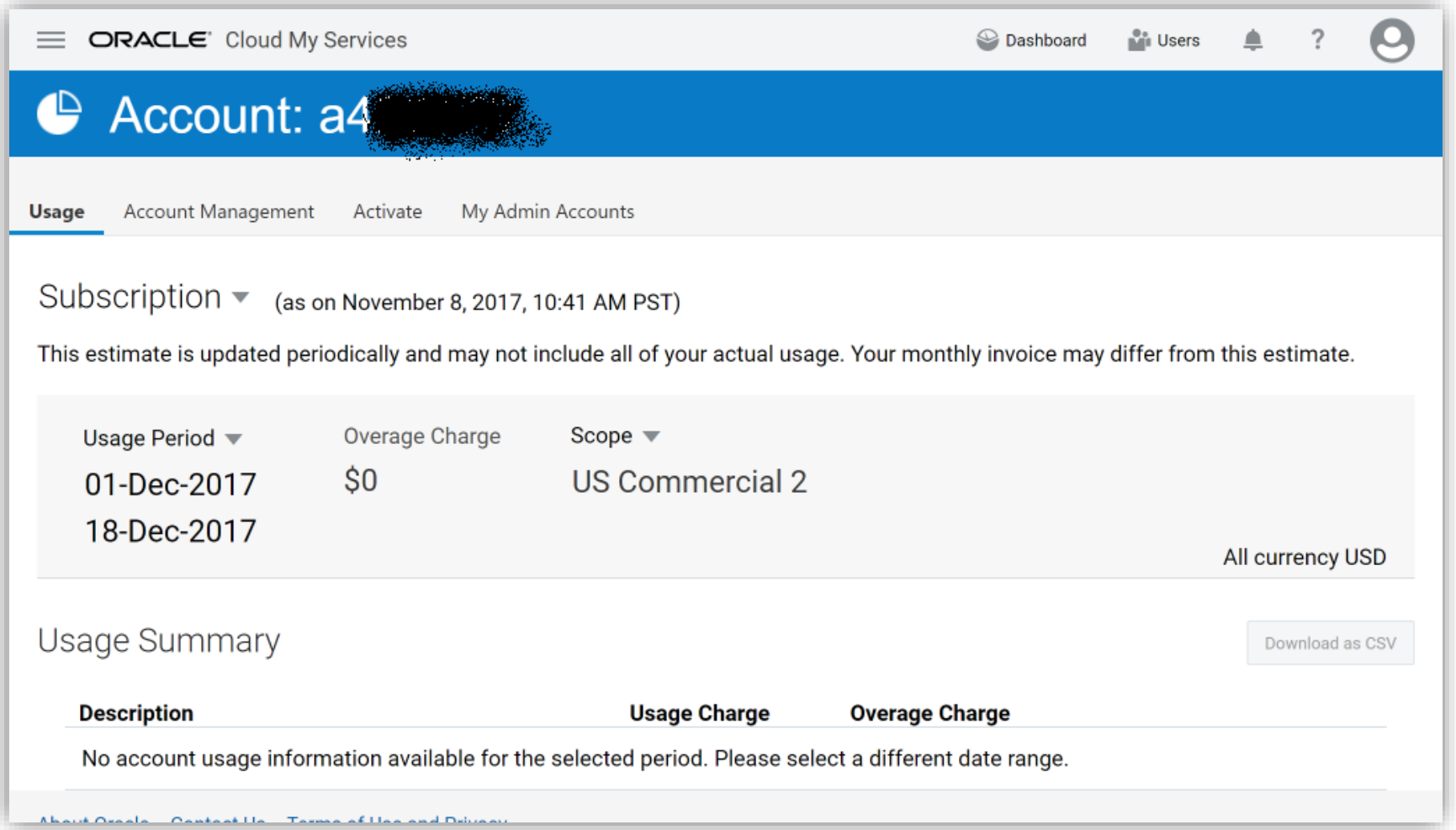
Account Management



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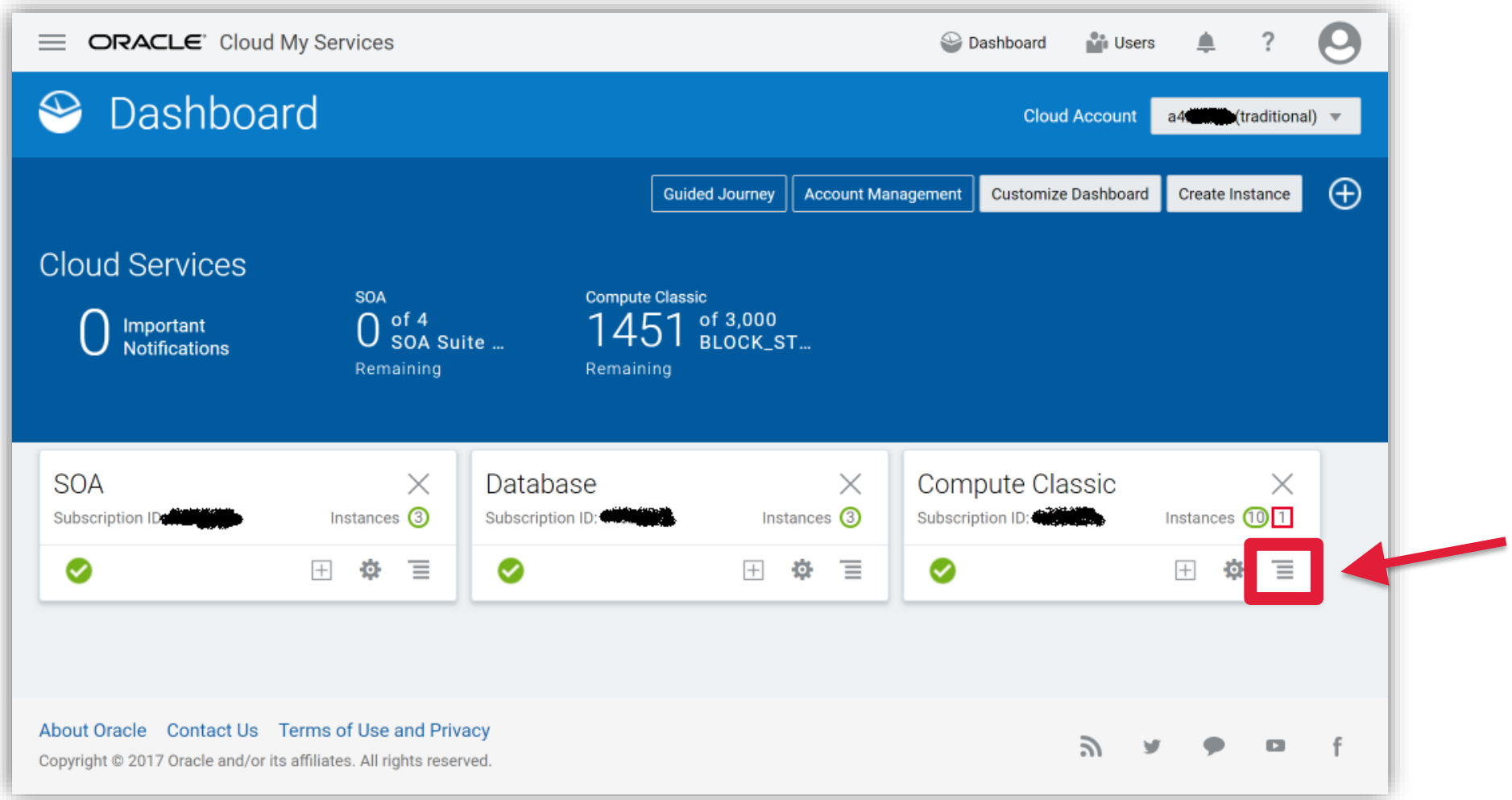
Compute Cloud ‘My Services’

Clicking on ‘Services’



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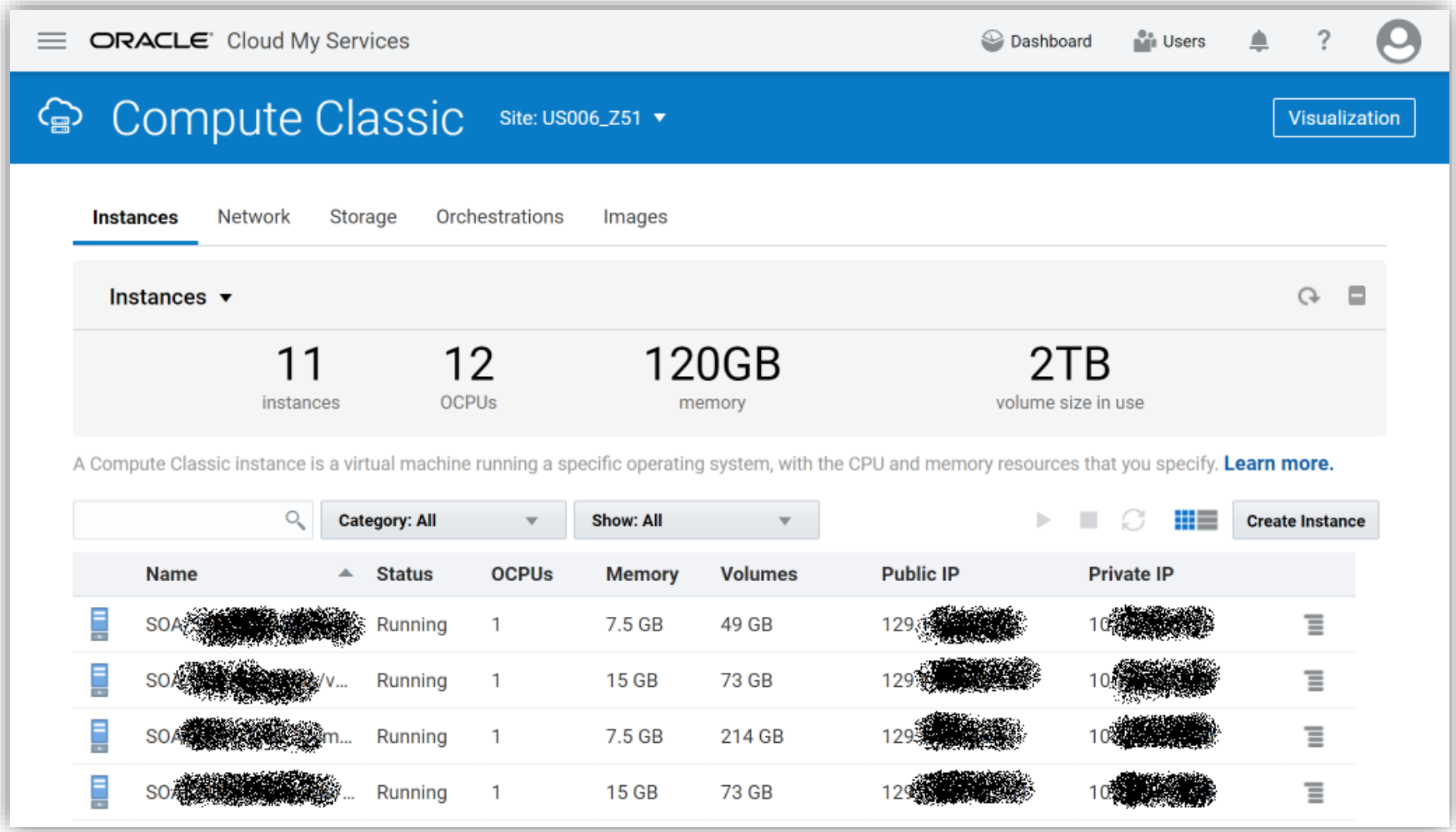
Compute Cloud Dashboard



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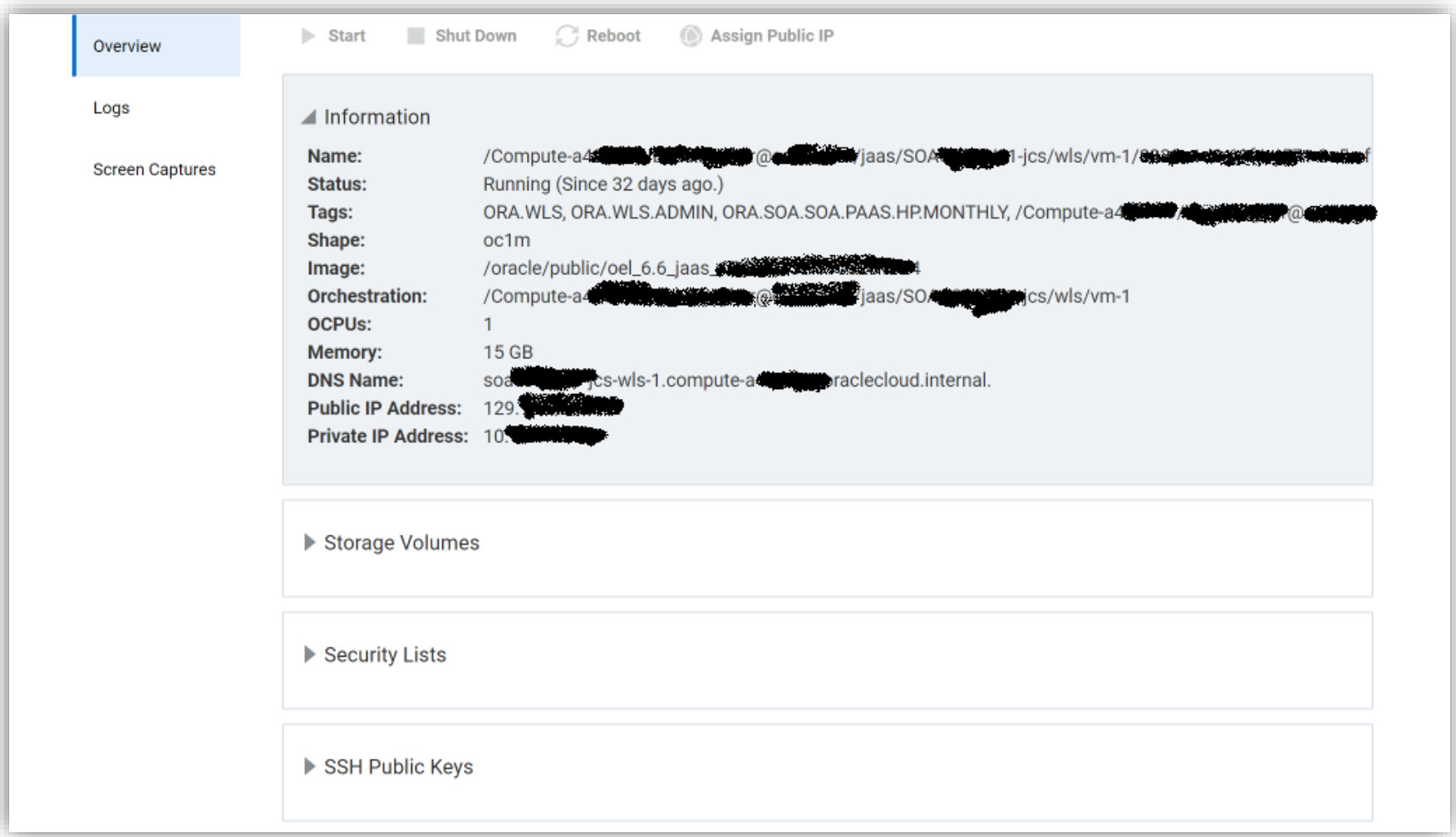
Compute Instance



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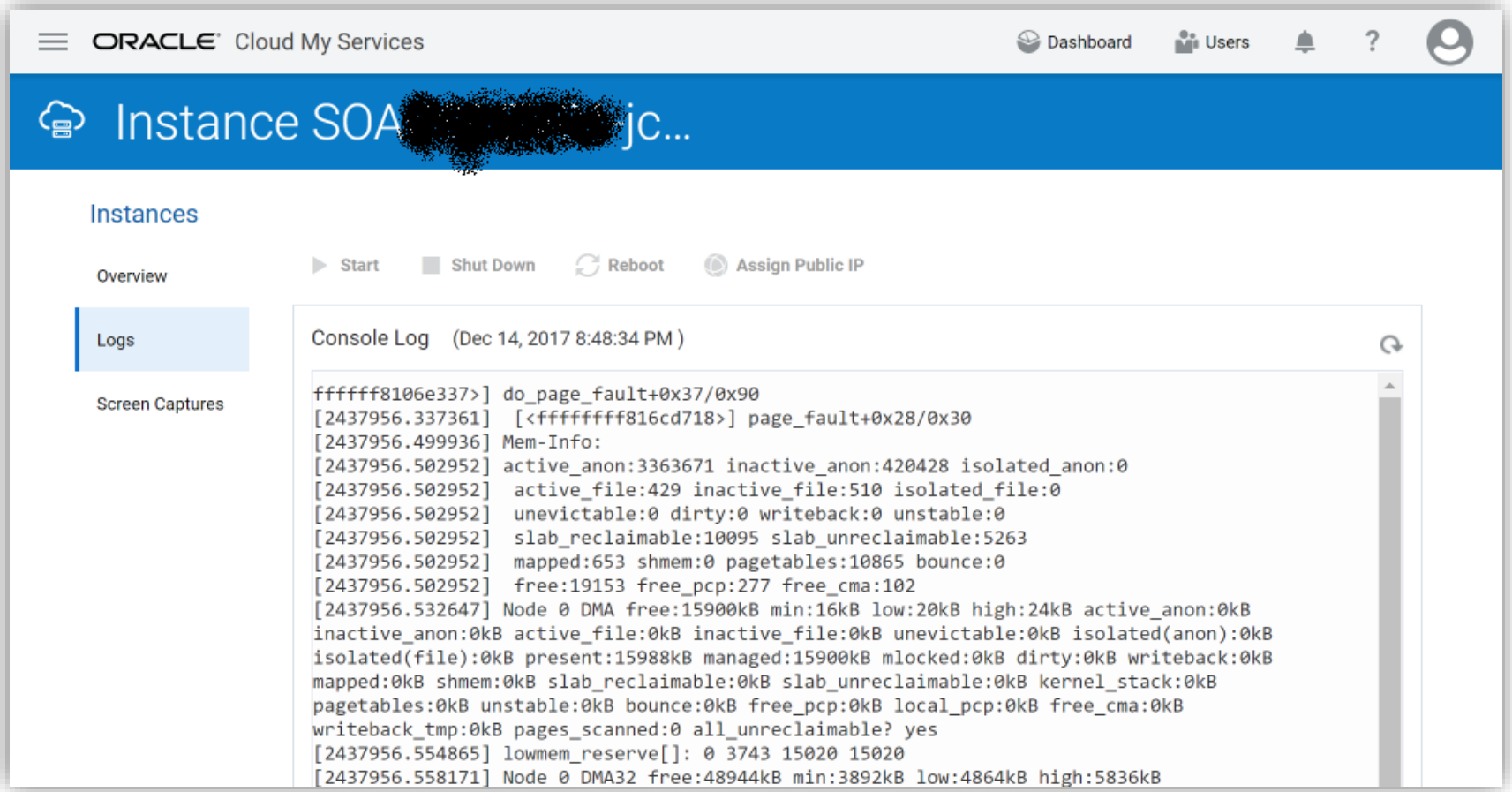
Compute Instance Logs

- Never used it, could be useful (?)



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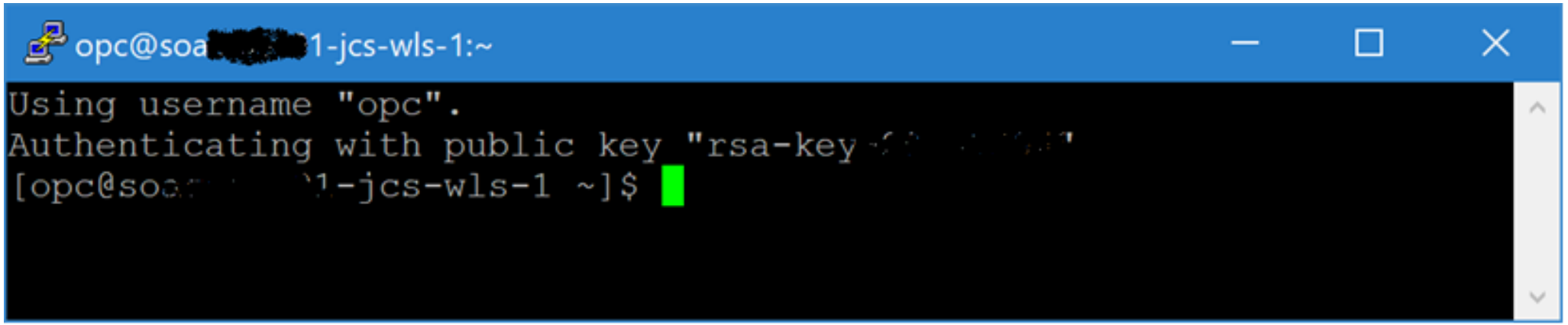
SSH

- Full root level SSH access to box
- Default user ‘opc’
- Sudo su access to already created ‘oracle’ and ‘root’ accounts



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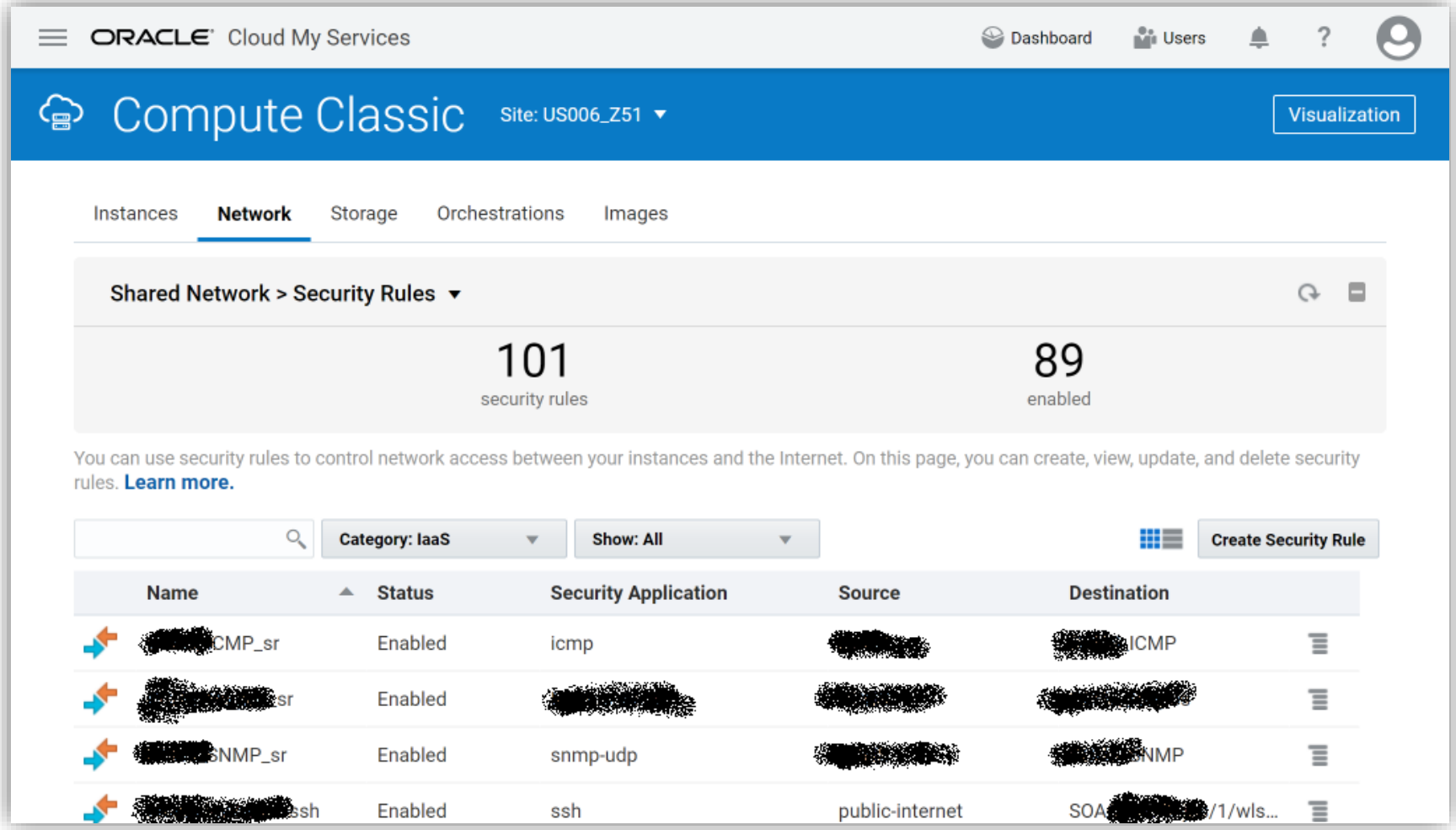
Network / Firewall



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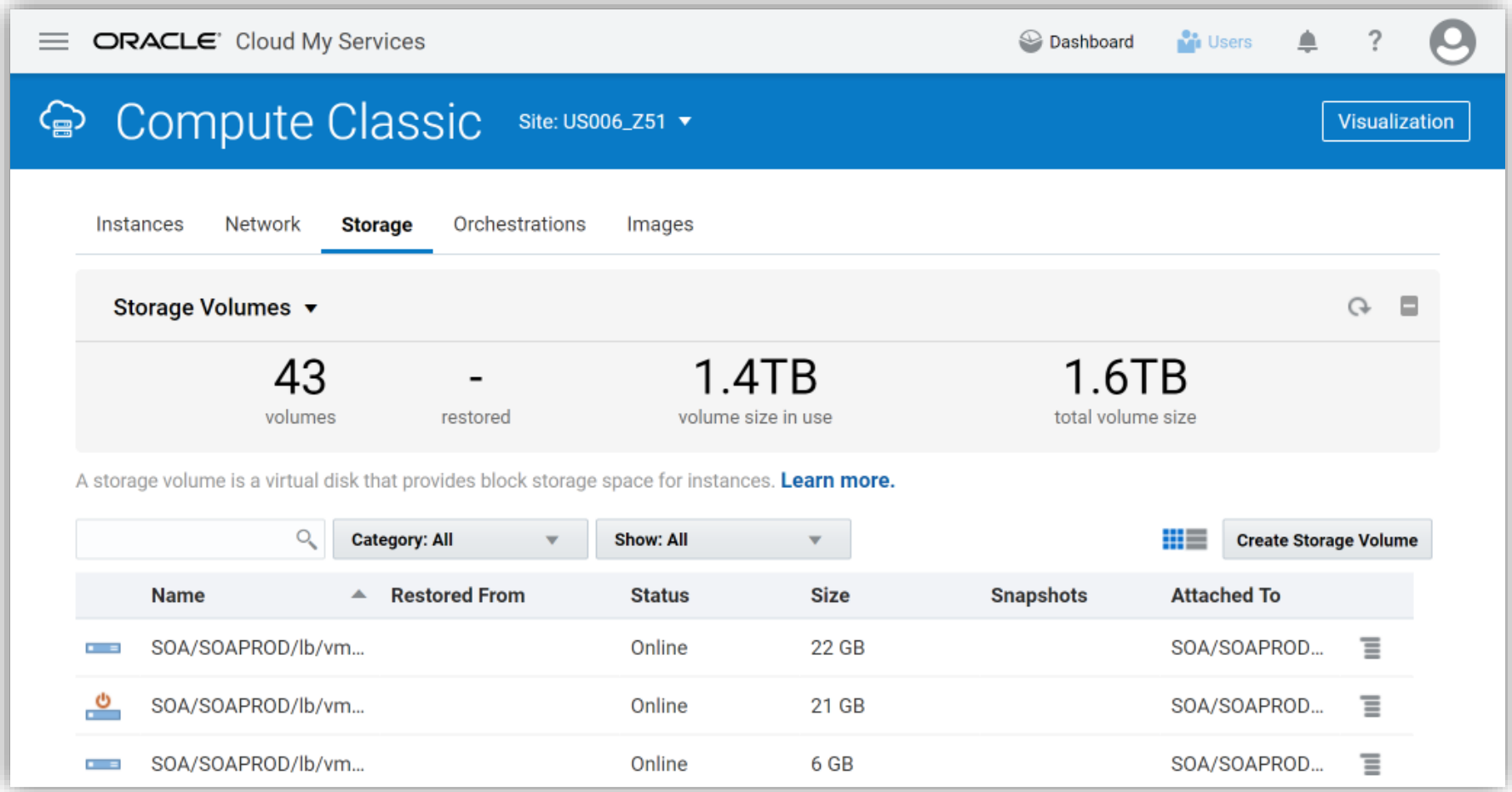
Storage

- Can’t add shared filesystems though



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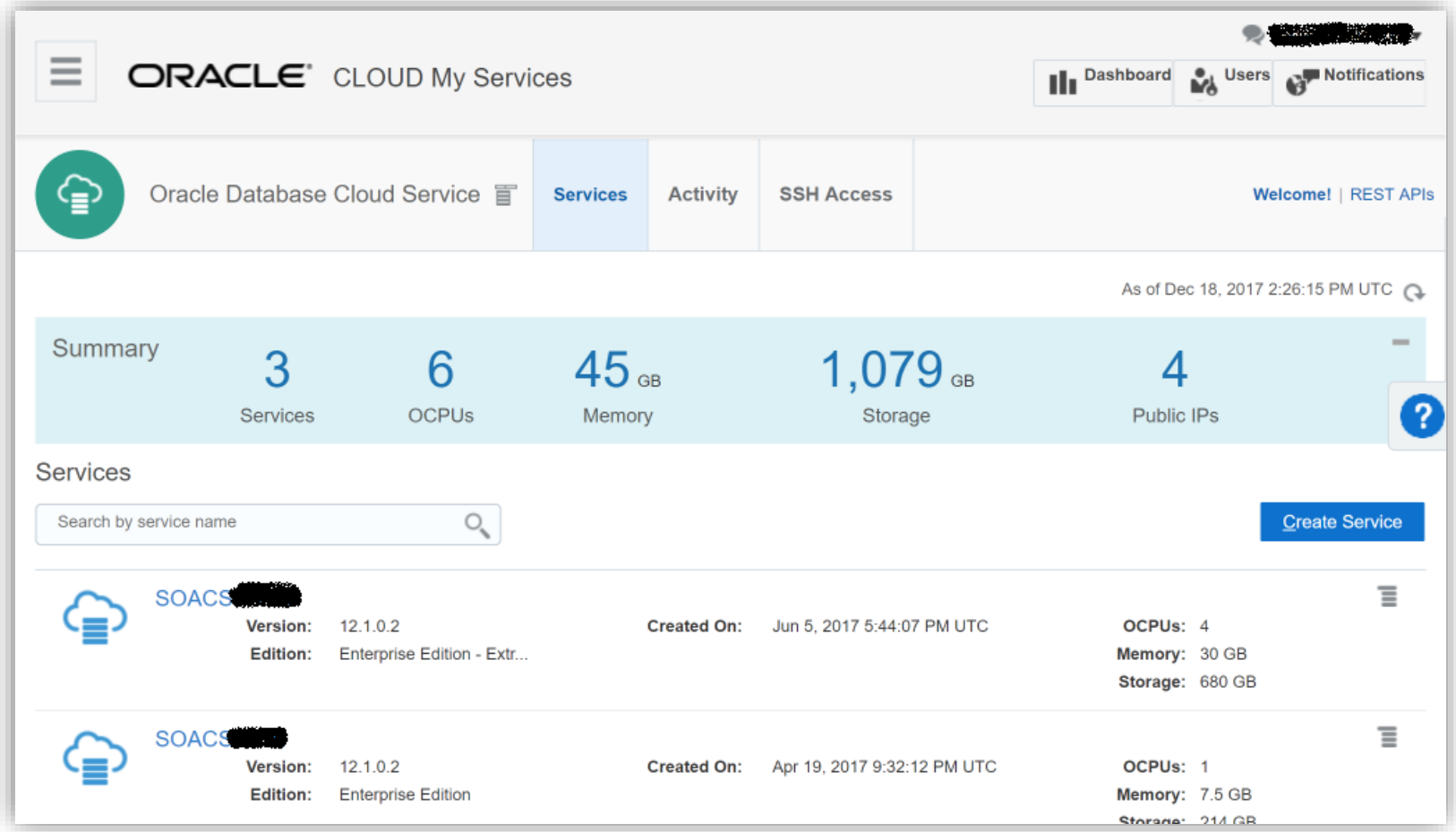
Database Cloud Service ‘My Services’

Database Cloud Service Dashboard

- The most stable/reliable of all PaaS services



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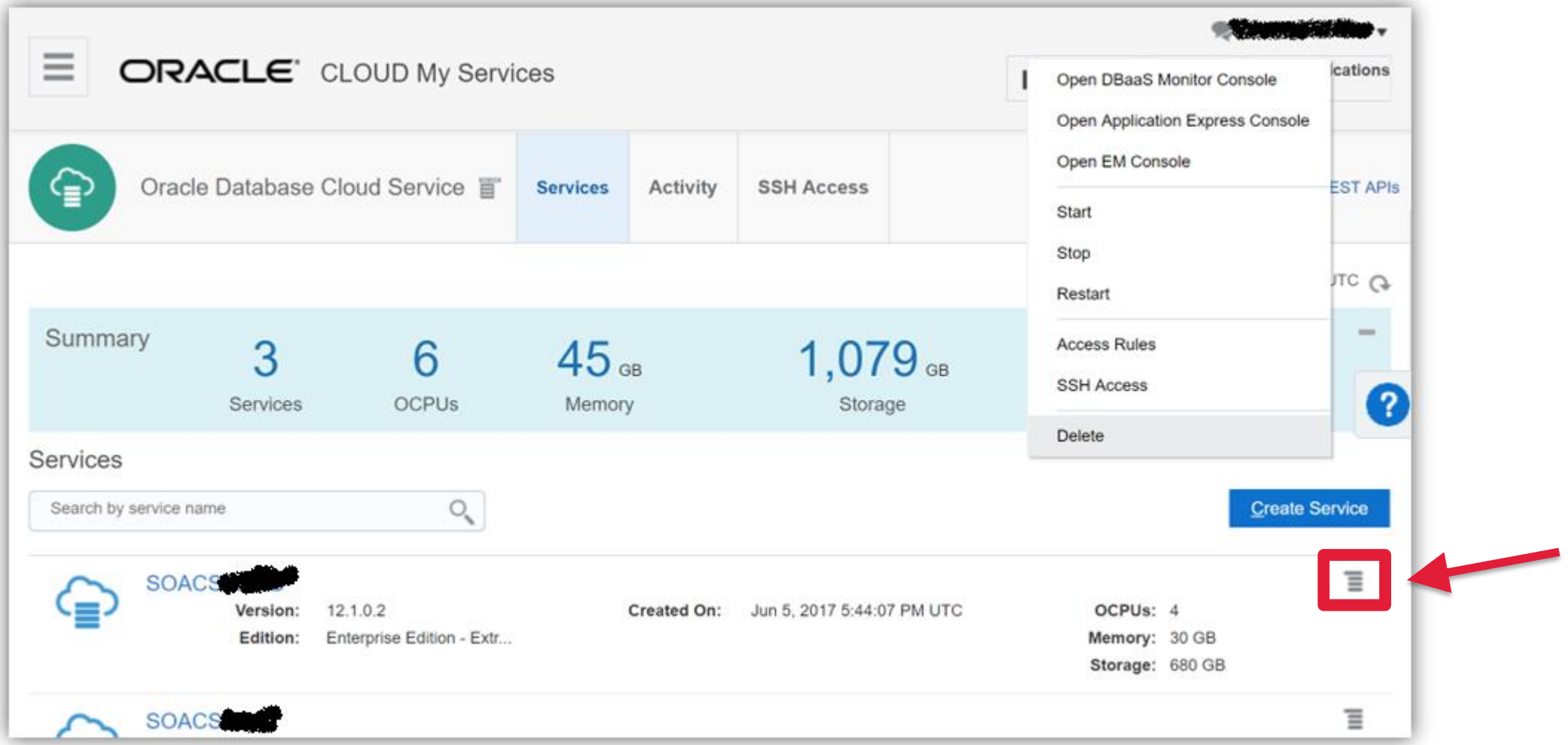
Hamburger Icon



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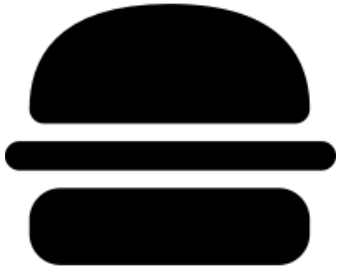
Hamburger Icon

- The hamburger, hotdog, pancake, tribar (or triple bar), double oreo, or options button is a button placed typically in a top corner of a graphical user interface.

- It takes the form of an icon that consists of three parallel horizontal lines (displayed as ☰), suggestive of a list.



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DBaaS Consoles

- Oracle Database Cloud Service Dashboard

  https://dbaas.oraclecloud.com/dbaas/faces/dbRunner.jspx
- DBaaS Monitor Console

  https://129.xxx.xx.xx/dbaas_monitor
- EM Database Express Console

  https://129.xxx.xx.xx:5500/em
- Application Express Console

  https://129.xxx.xx.xx/apex/pdb1

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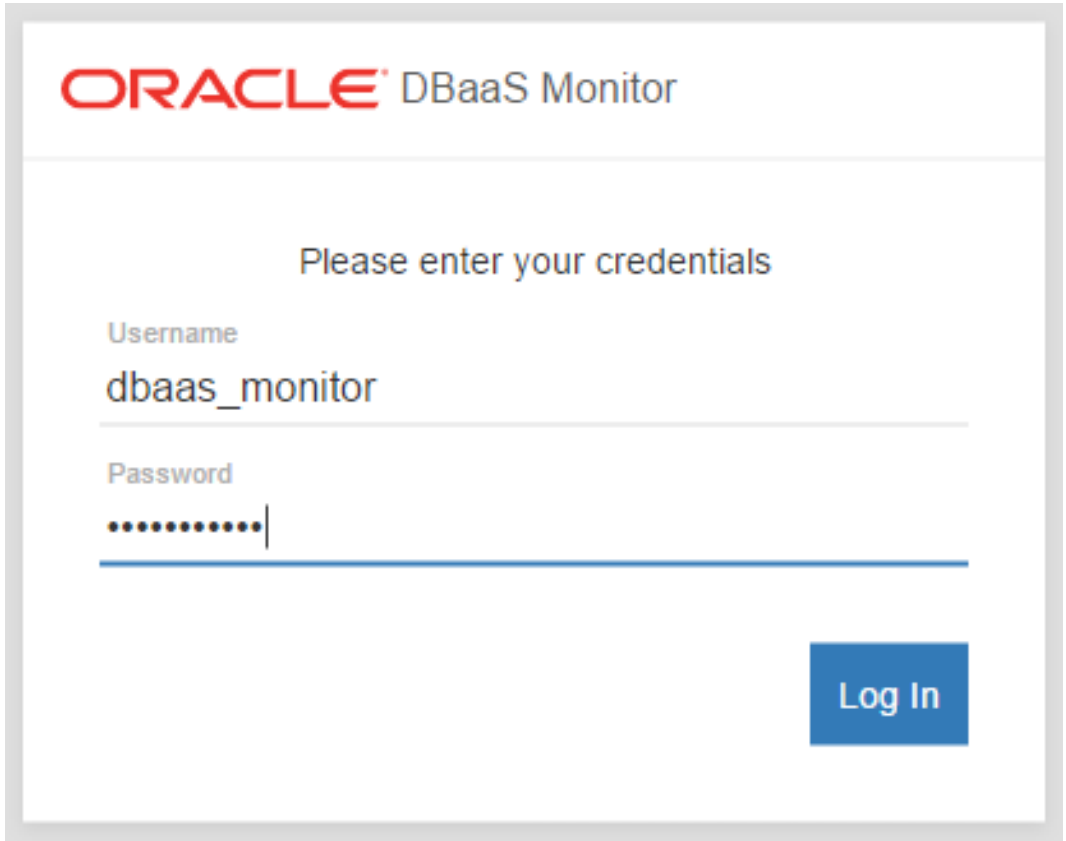
Oracle DBaaS Monitor

- Default username is ‘dbaas_monitor’



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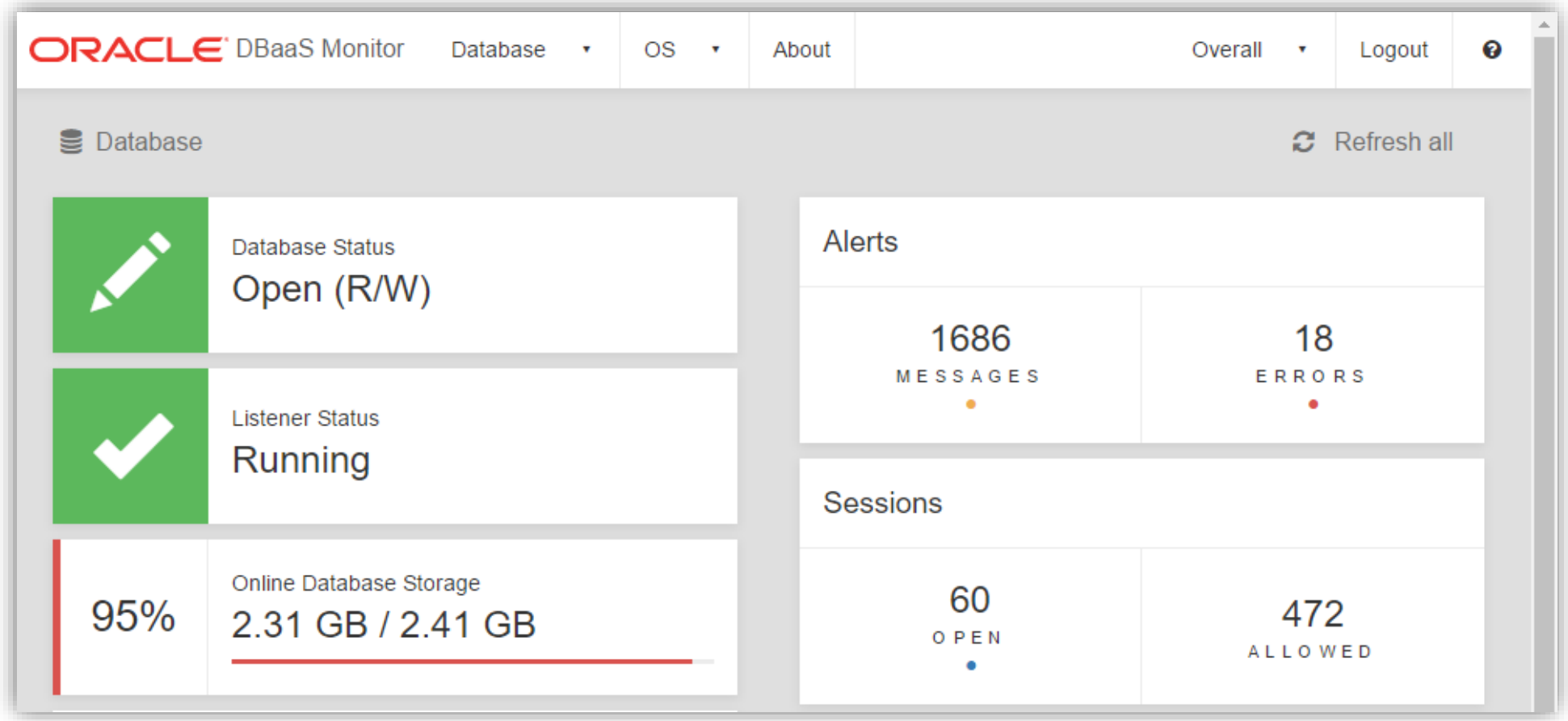
Oracle DBaaS Monitor

- Mostly useless console



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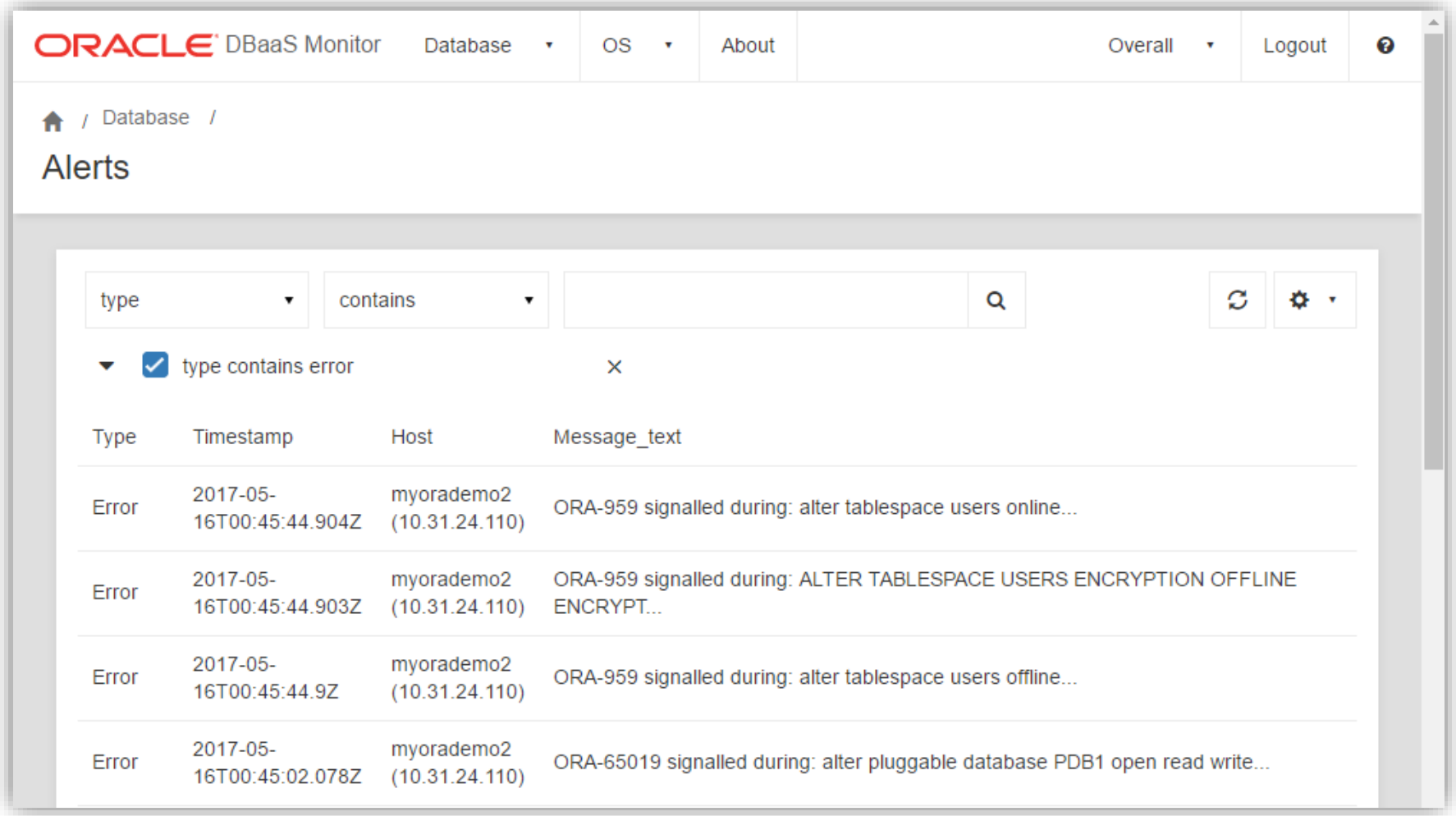
Explore the 18 Errors



Type	Timestamp	Host	Message_text
Error	2017-05-16T00:45:44.904Z	myorademo2 (10.31.24.110)	ORA-959 signalled during: alter tablespace users online...
Error	2017-05-16T00:45:44.903Z	myorademo2 (10.31.24.110)	ORA-959 signalled during: ALTER TABLESPACE USERS ENCRYPTION OFFLINE ENCRYPT...
Error	2017-05-16T00:45:44.9Z	myorademo2 (10.31.24.110)	ORA-959 signalled during: alter tablespace users offline...
Error	2017-05-16T00:45:02.078Z	myorademo2 (10.31.24.110)	ORA-65019 signalled during: alter pluggable database PDB1 open read write...

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Oracle EM Console – Logging In

- Requires Adobe Flash

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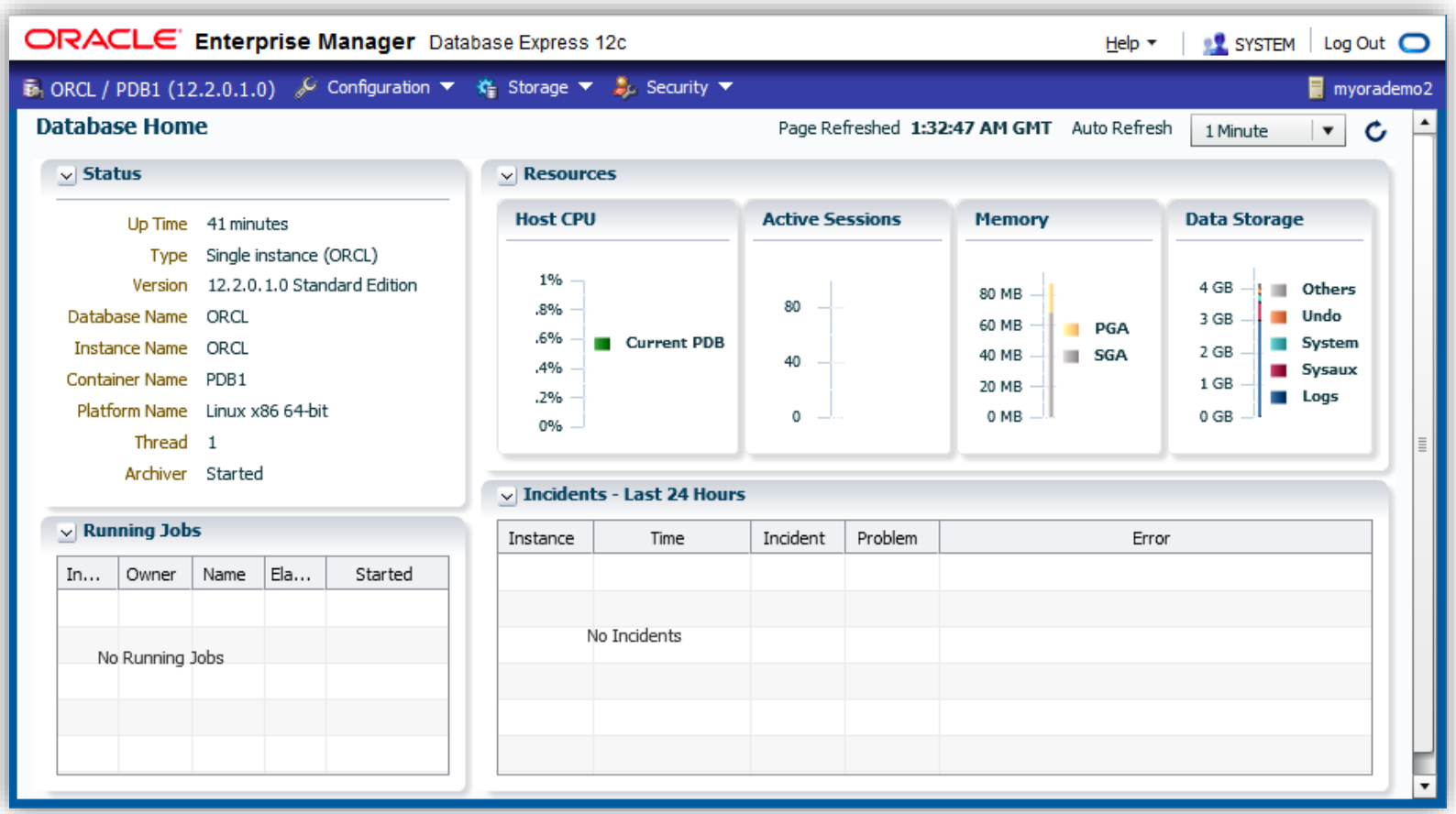
Navigate Oracle EM Console

- Another useless console



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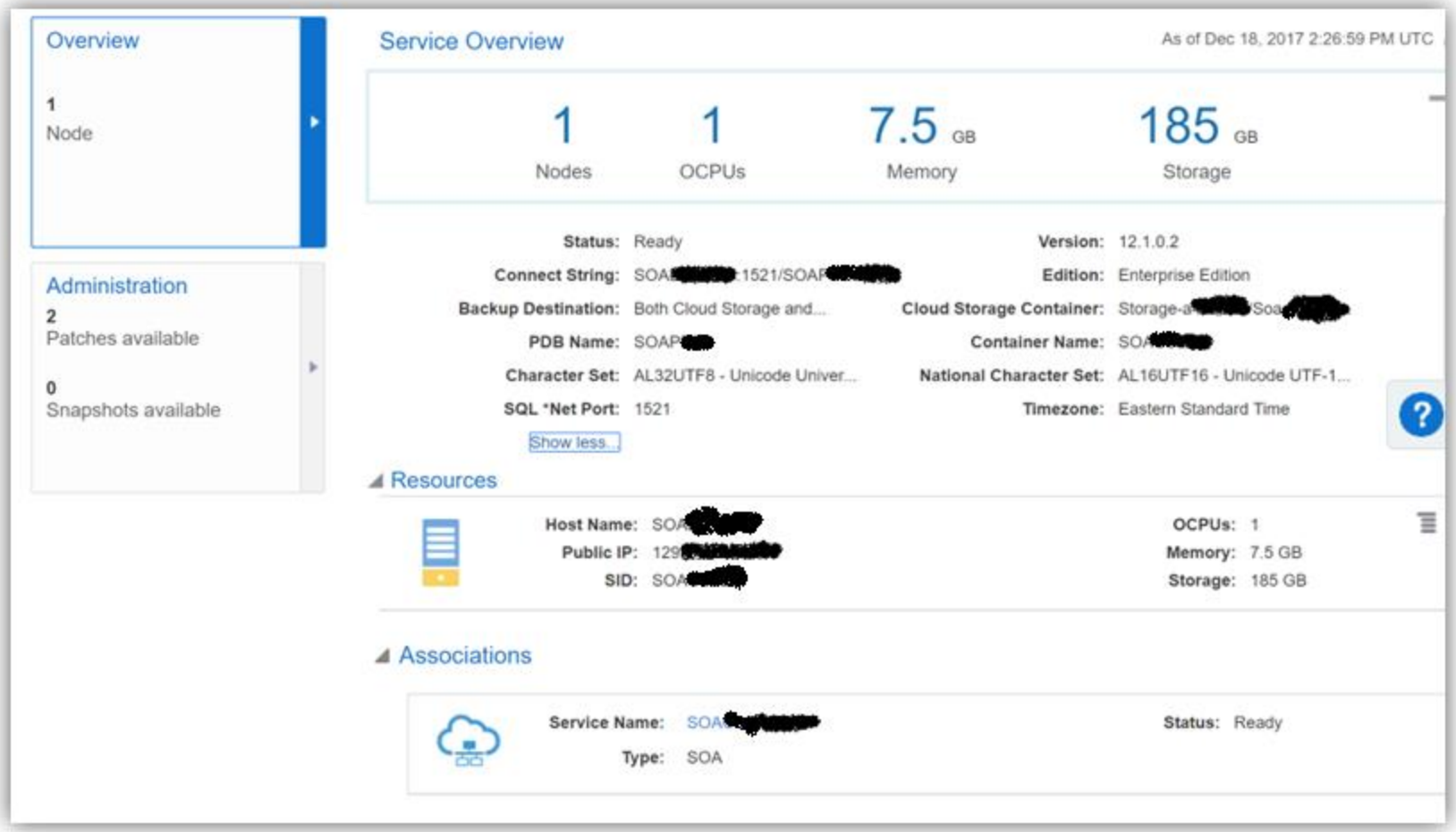
DBaaS Instance Details

- Note the ‘Associations’, this creates a dependency



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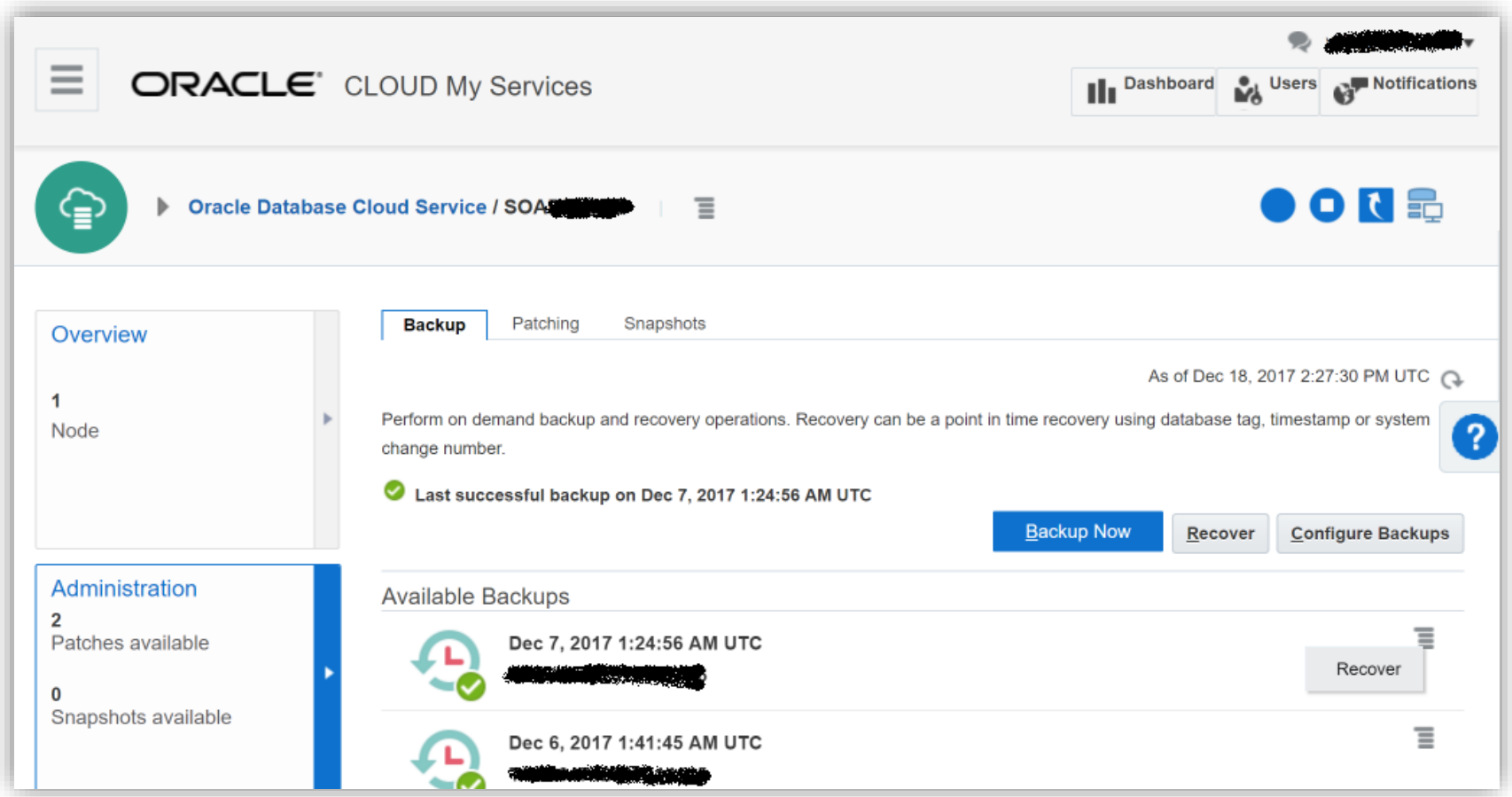
Administration: Backups

RMAN behind the scene



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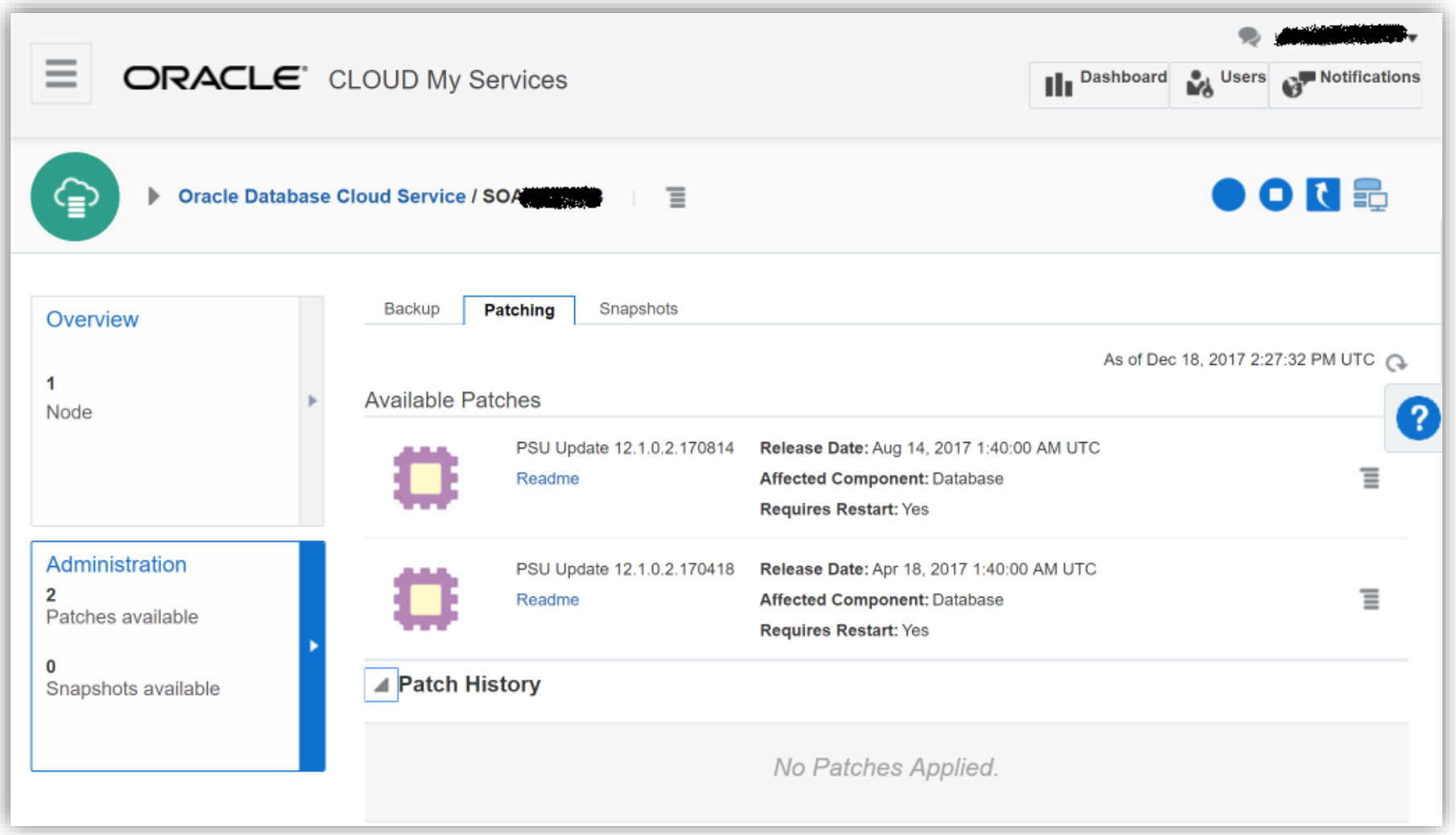
Administration: Patching



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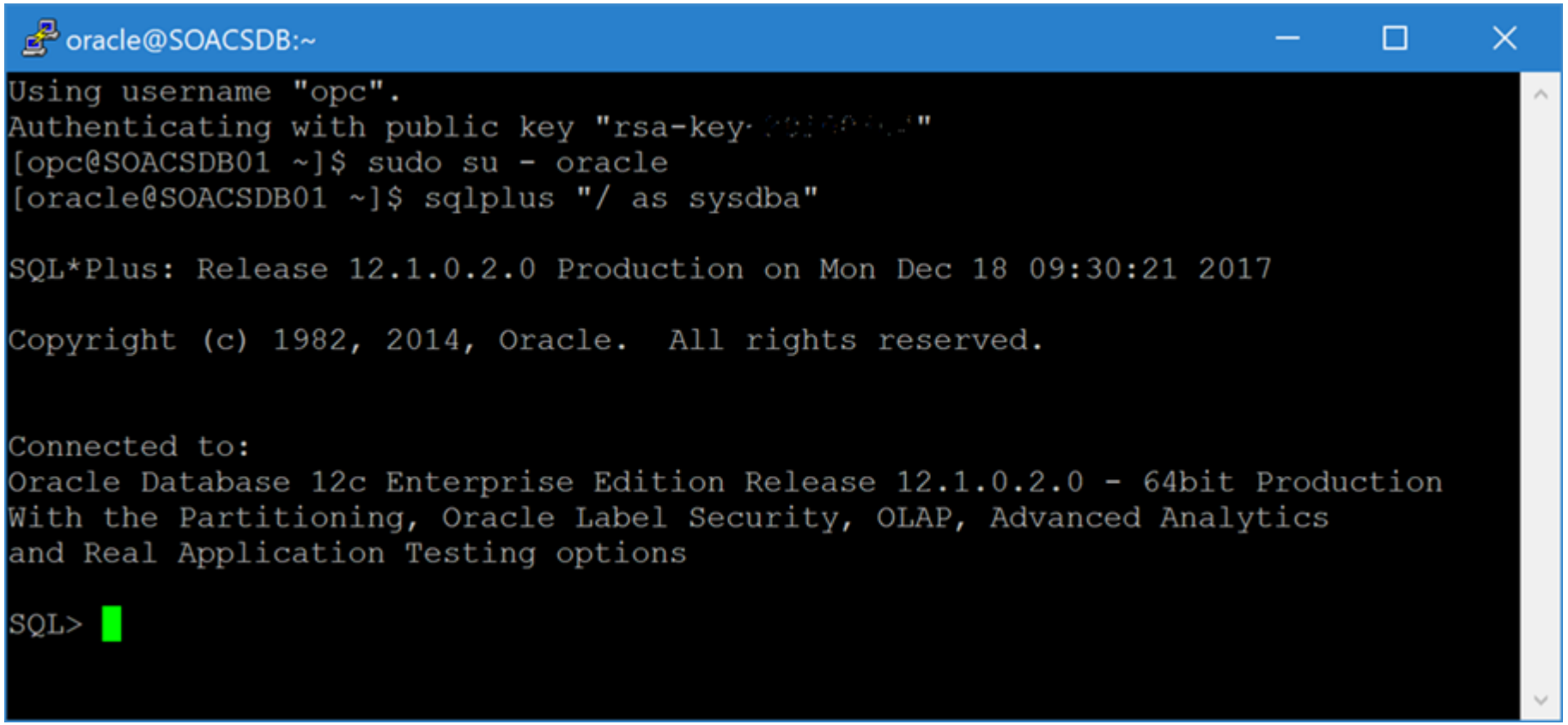
SSH

- Root OS access, full SYSDBA access



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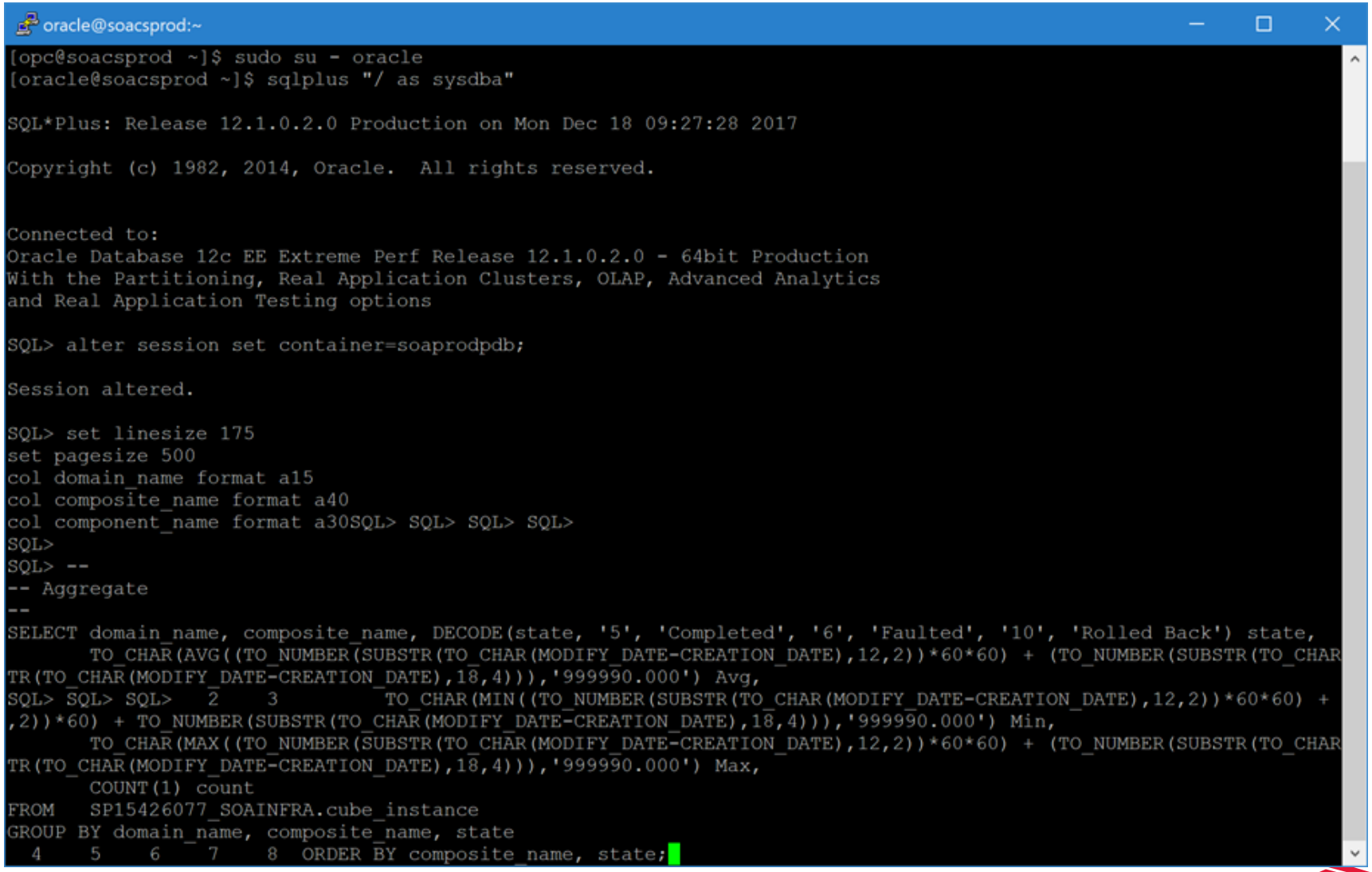
SYSDBA Access



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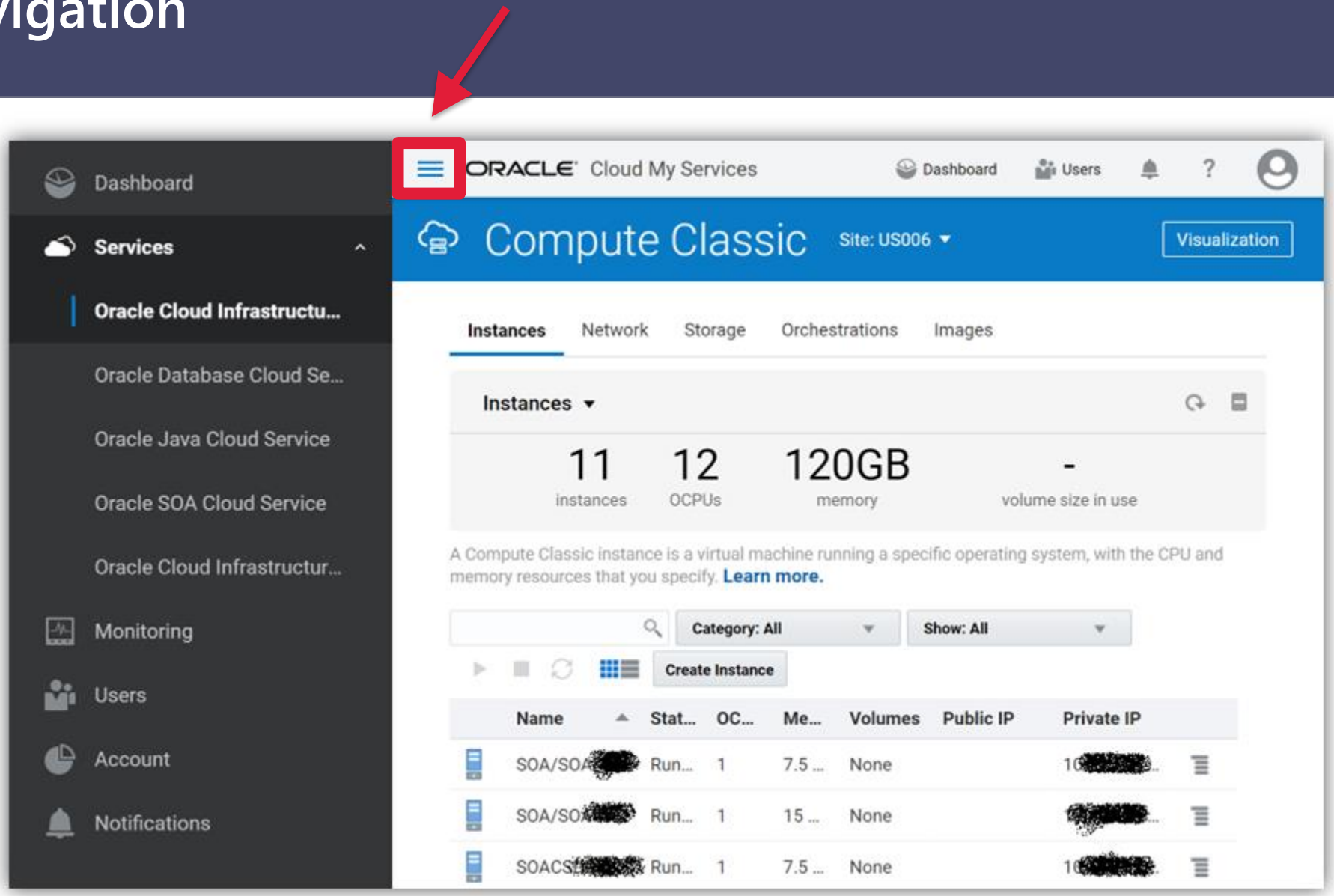
SOA Cloud Service ‘My Services’

Navigation



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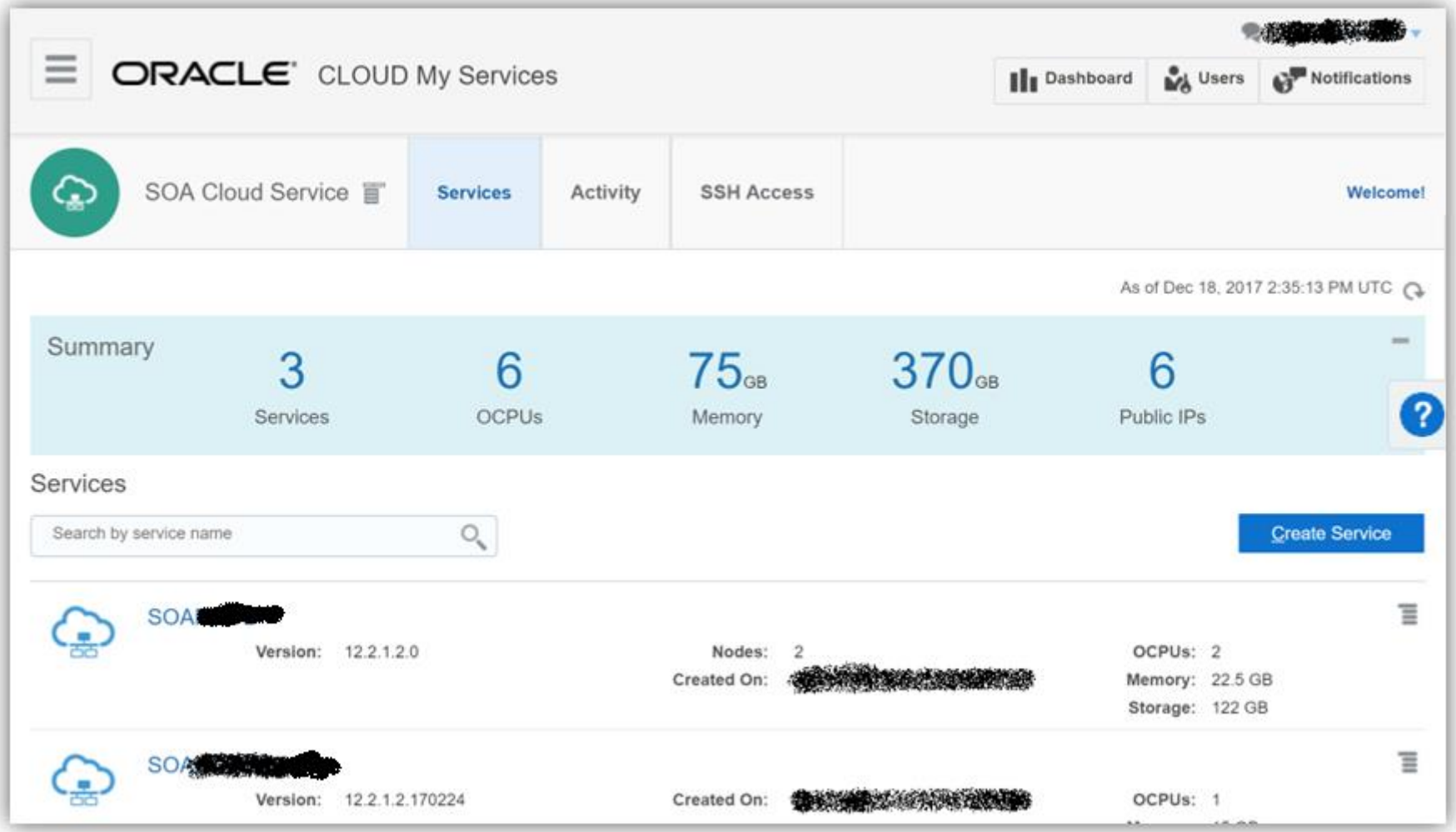
SOACS Dashboard



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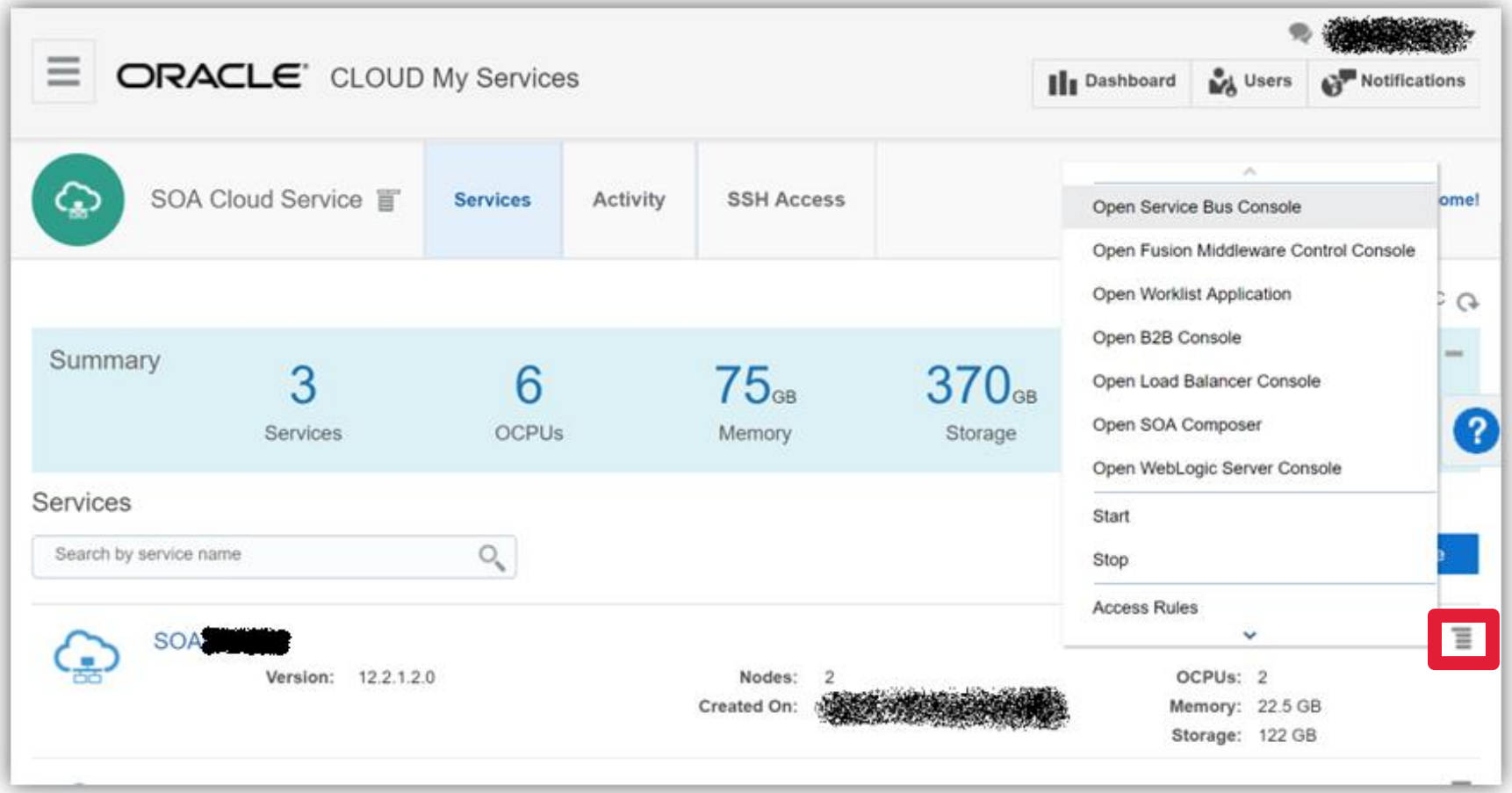
Hamburger Icon

- Full Oracle SOA Suite 12c console access



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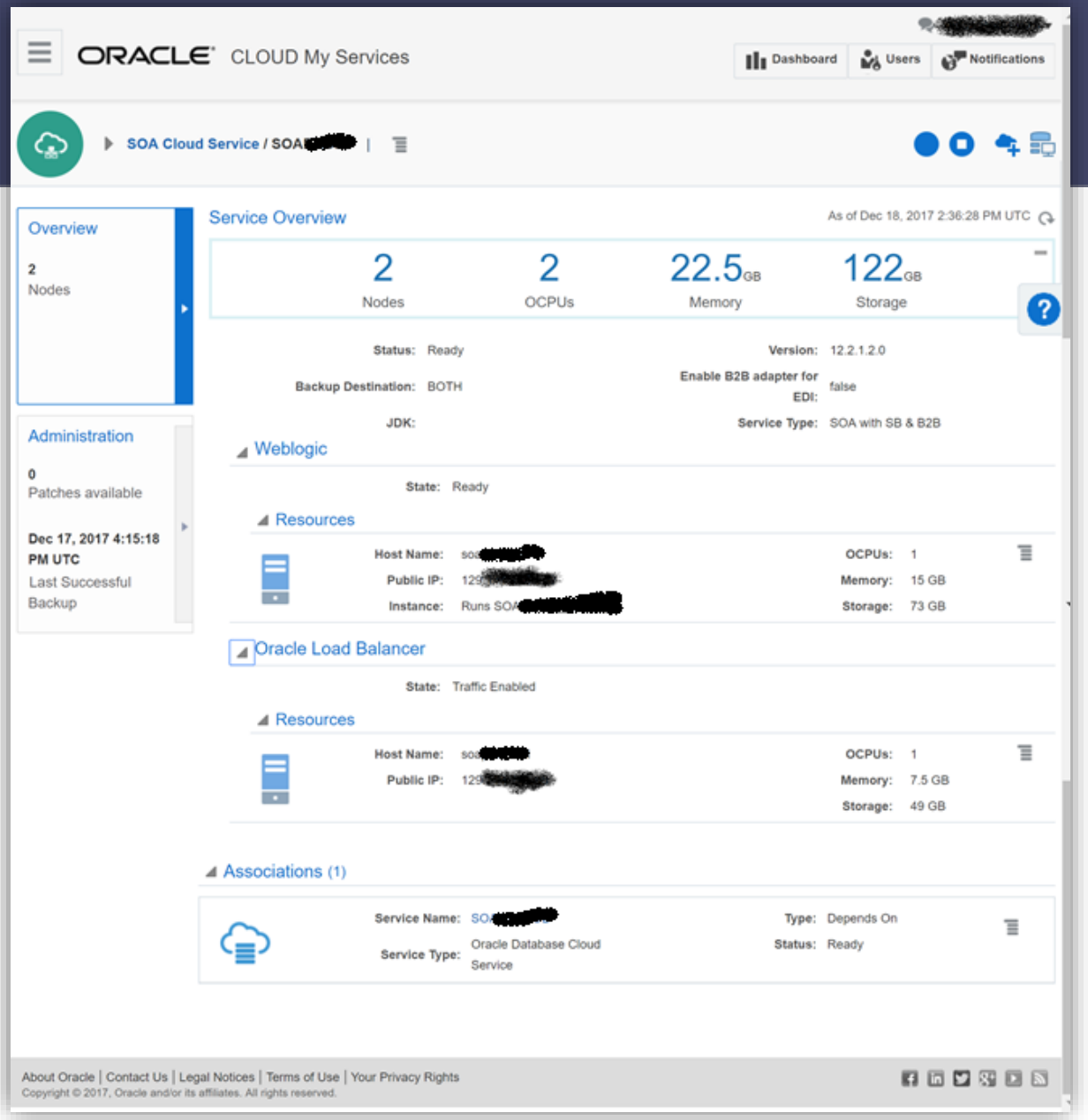
SOACS Instance Details

- Note the ‘Associations’
- Note the ‘Oracle Load Balancer’ (i.e., OTD)



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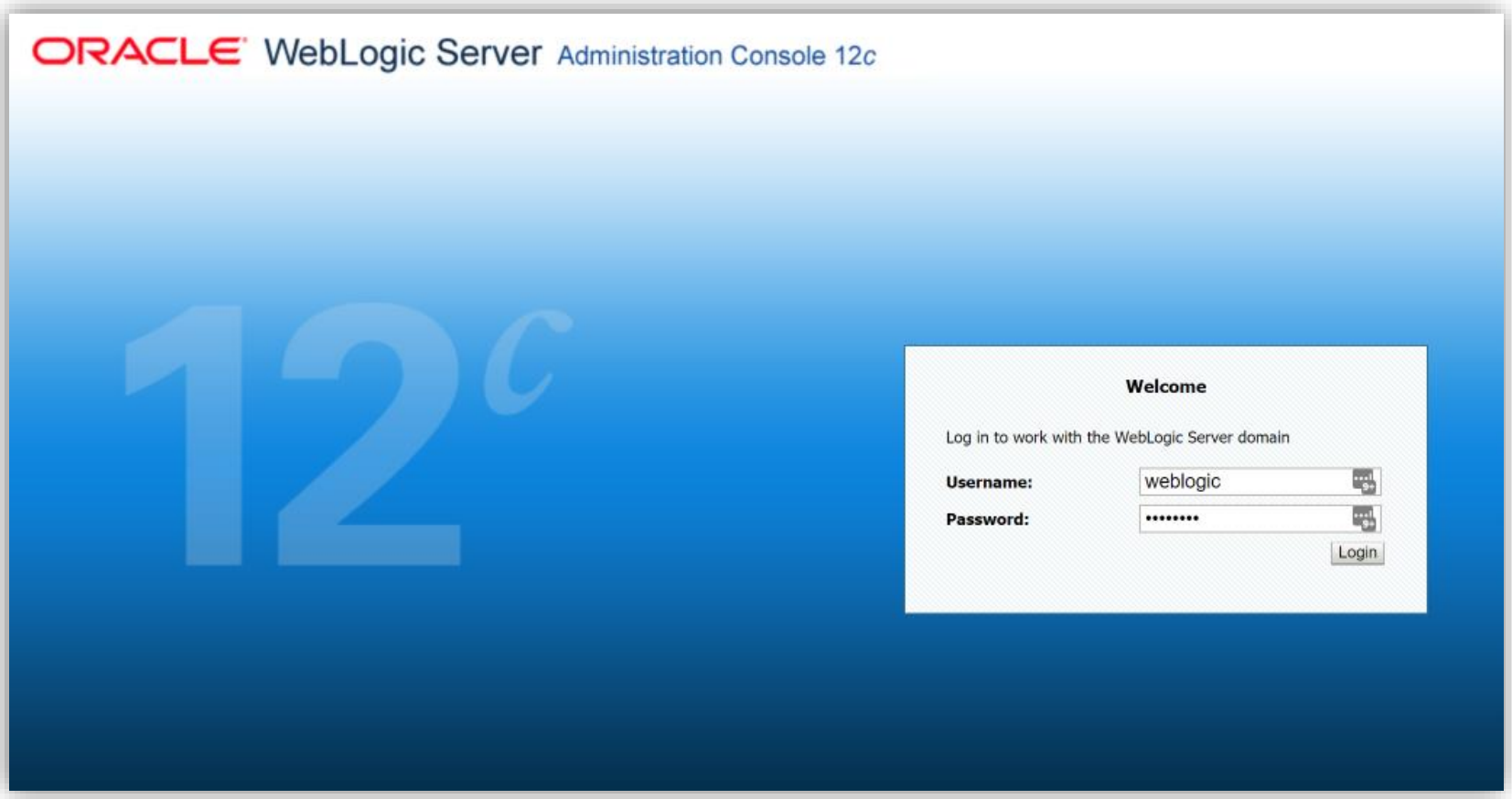
WebLogic Server Admin Console

- Full WebLogic Server Admin Console access



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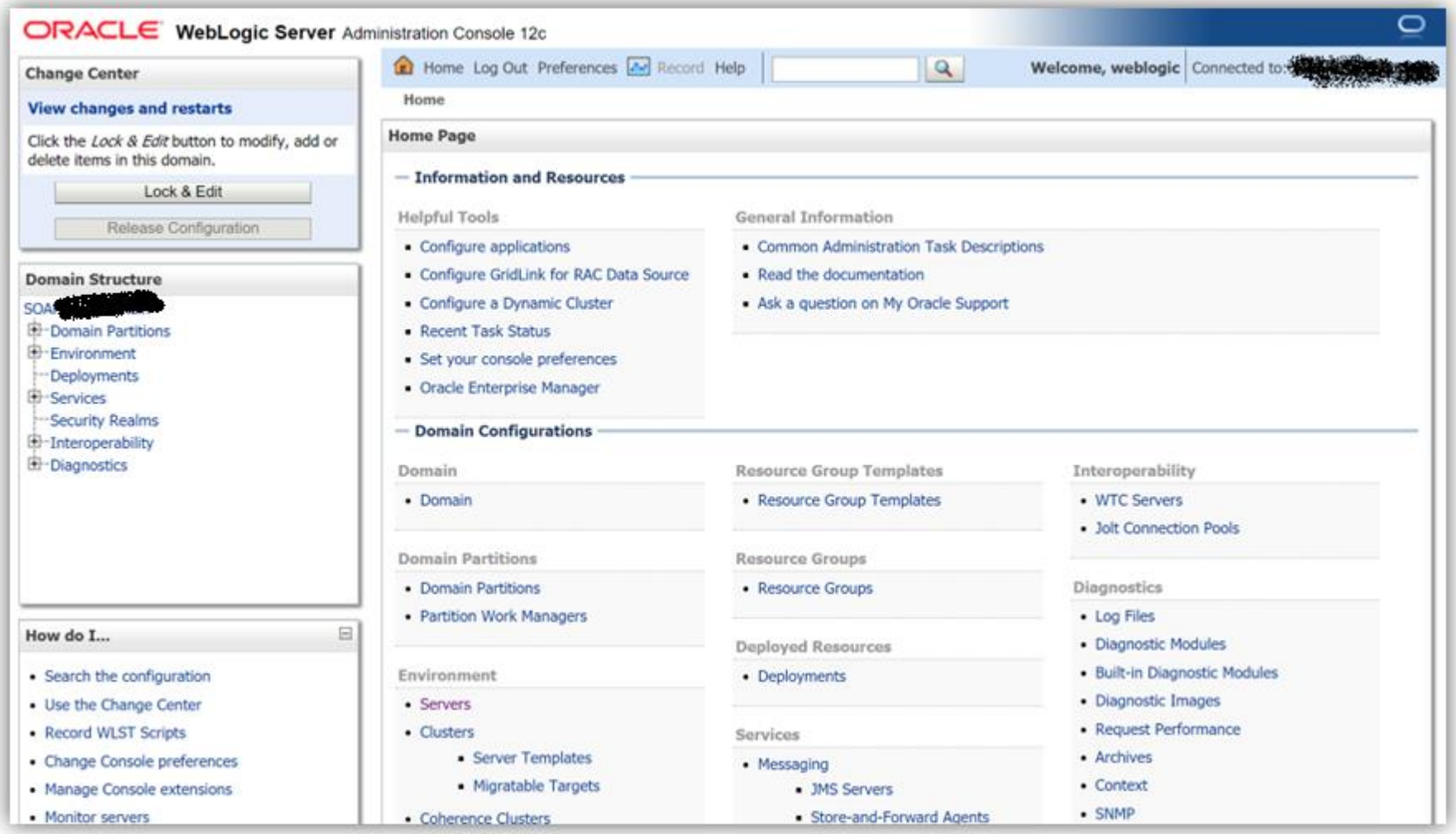
WebLogic Server Admin Console



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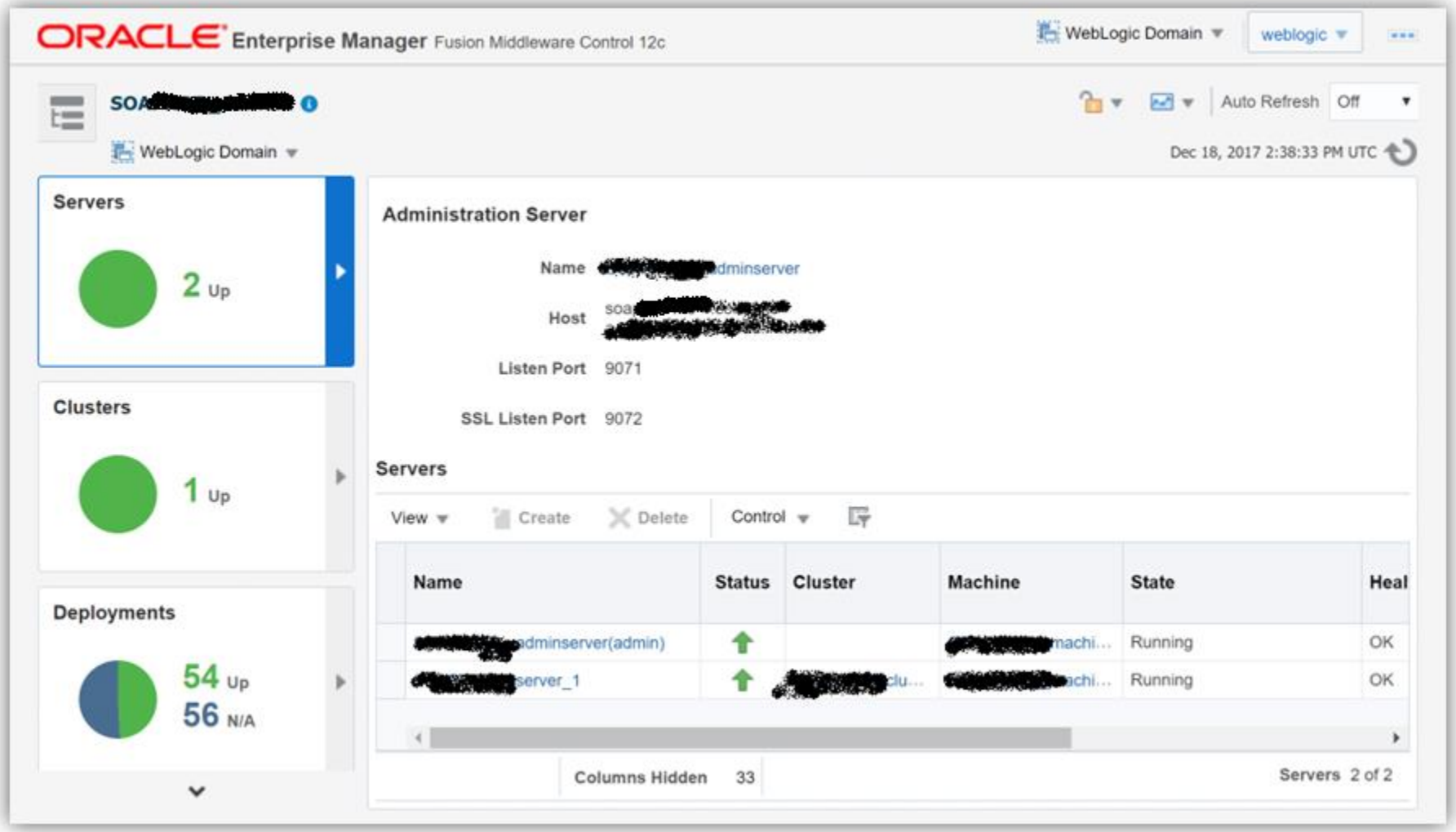
EM Console



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URL Format

- My Services Console

  https://myservices.us.oraclecloud.com/mycloud/a999999/faces/dashboard.jspx

- WebLogic Admin Console

  https://oc-129-xxx-xxx-xxx.compute.oraclecloud.com:7001/console/

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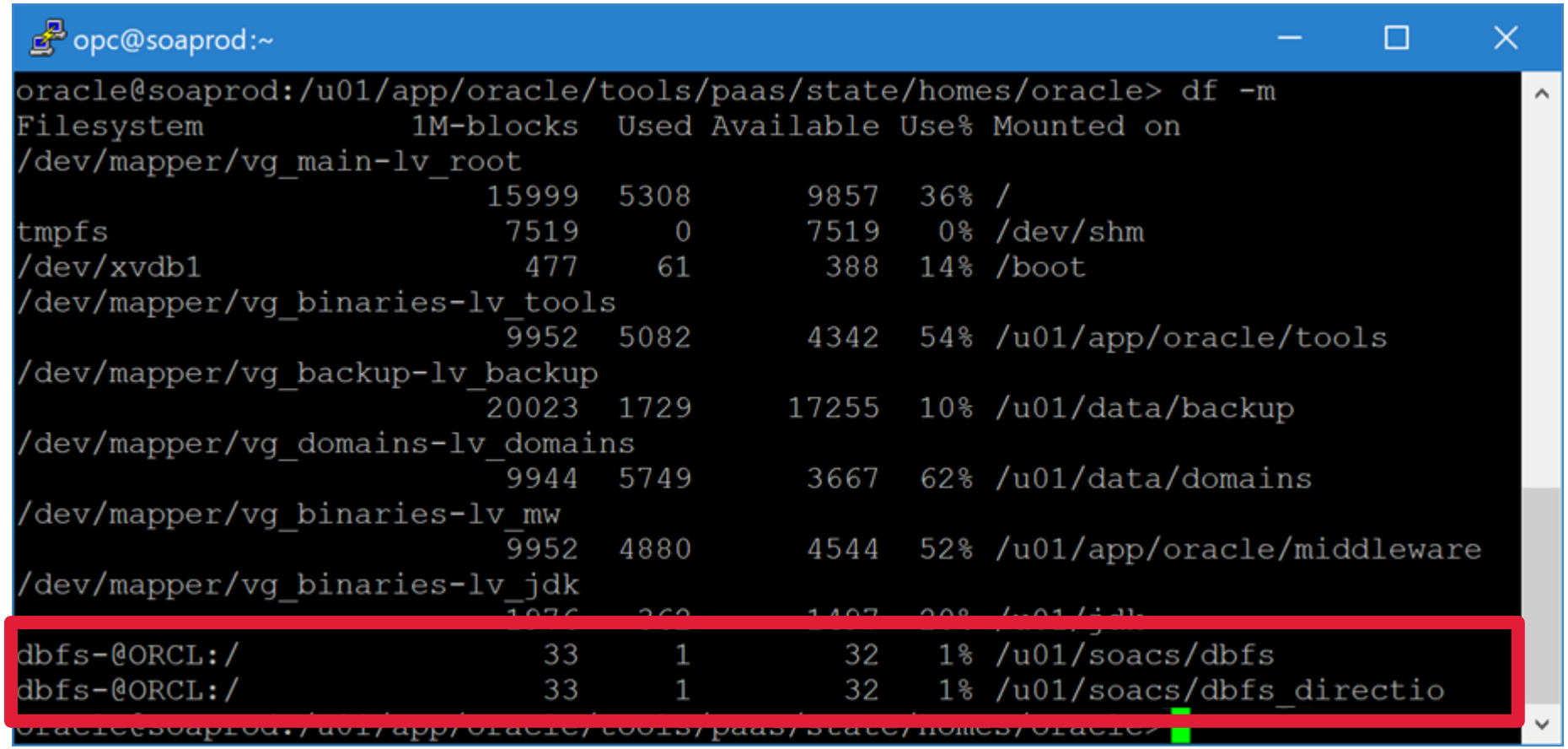
Shared Filesystem

Midtier Shared Filesystem (DBFS)

- DBFS used for shared filesystem between nodes



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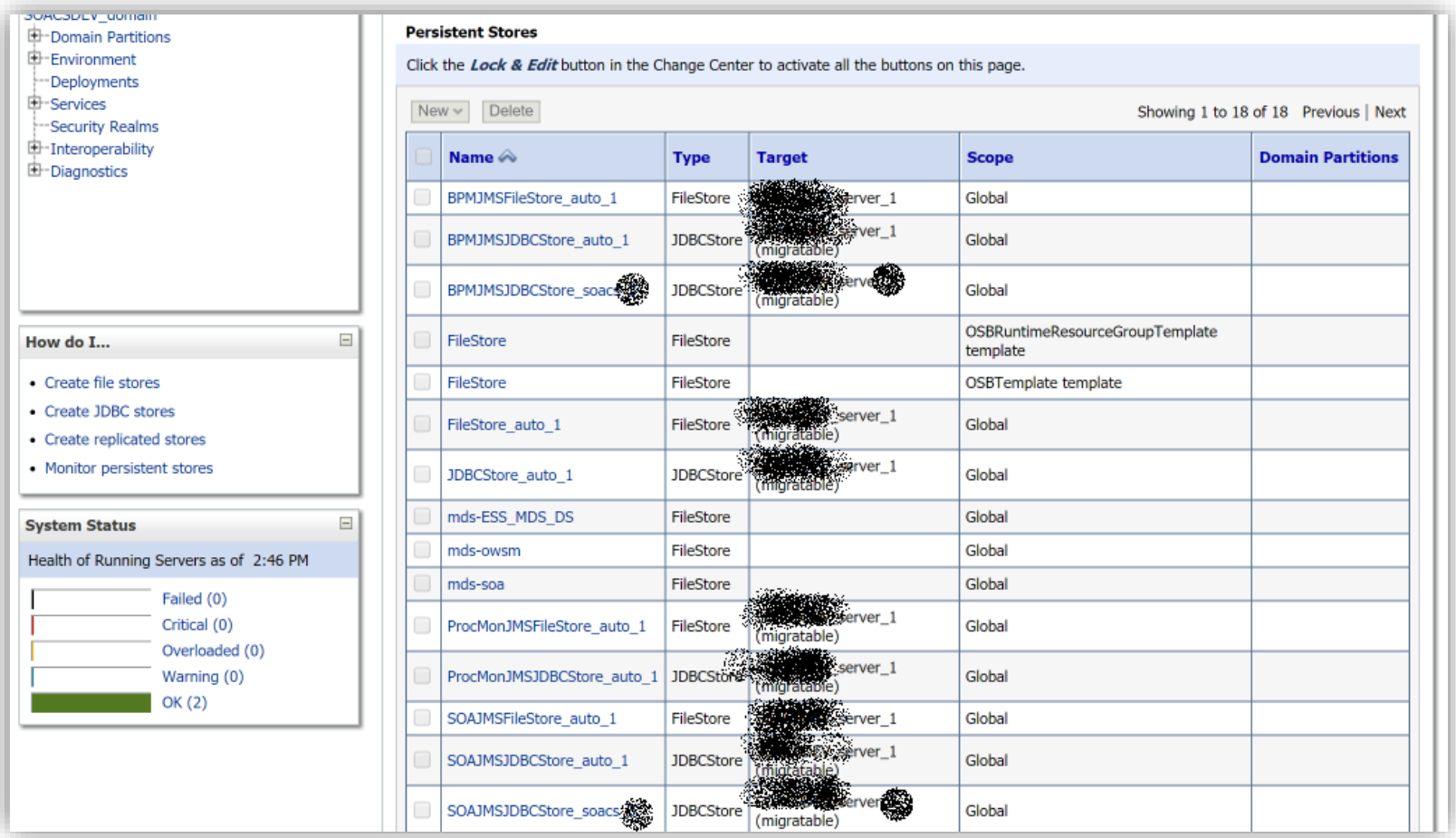
Midtier Shared Filesystem (DBFS)

- TLOGs and many persistent stores are JDBC-based



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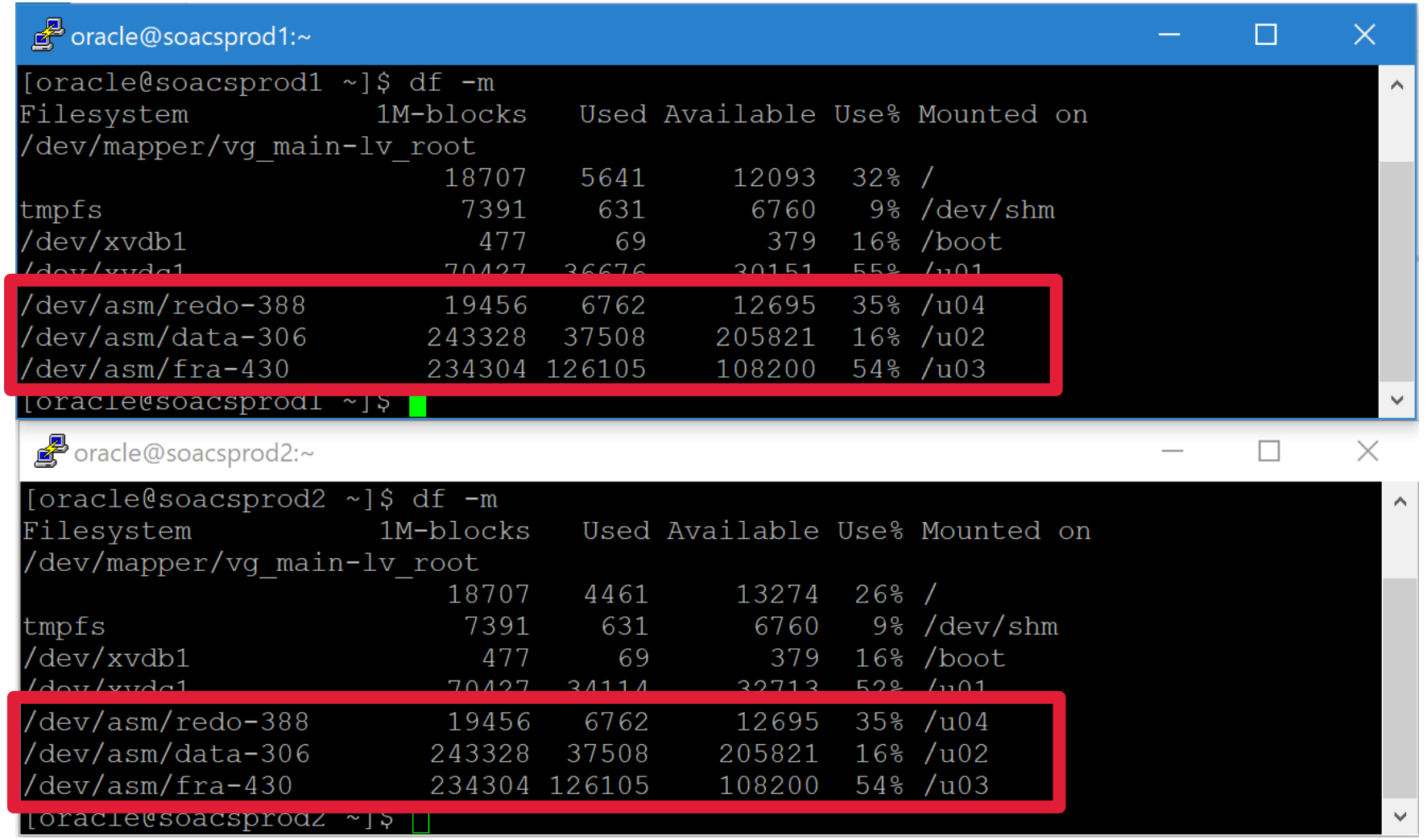
Database Shared Filesystem (ASM)



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Cloud Administration

Cloud Administrator

- So what are your expected duties as a Middleware Cloud Administrator?

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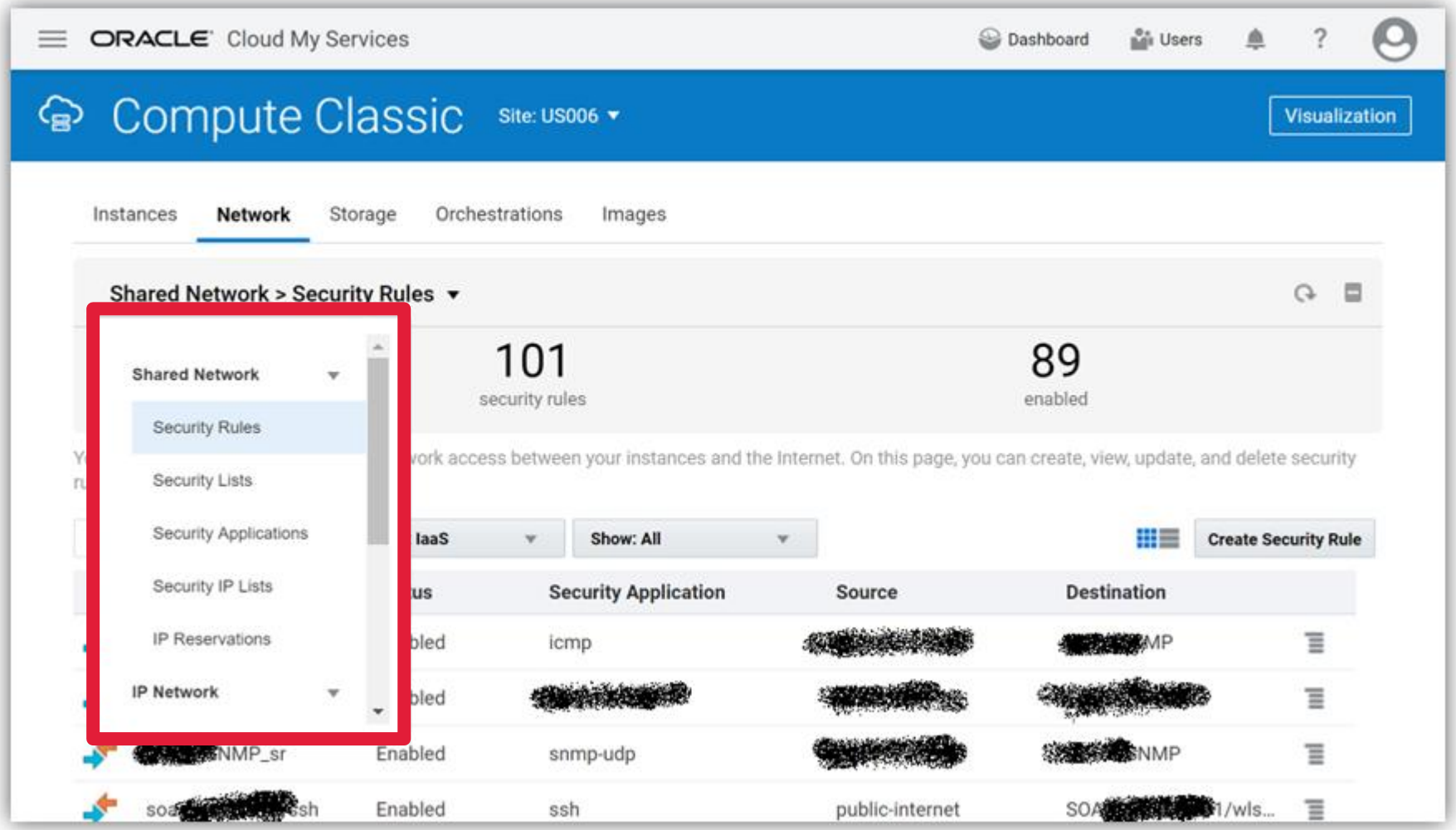
Firewall Management



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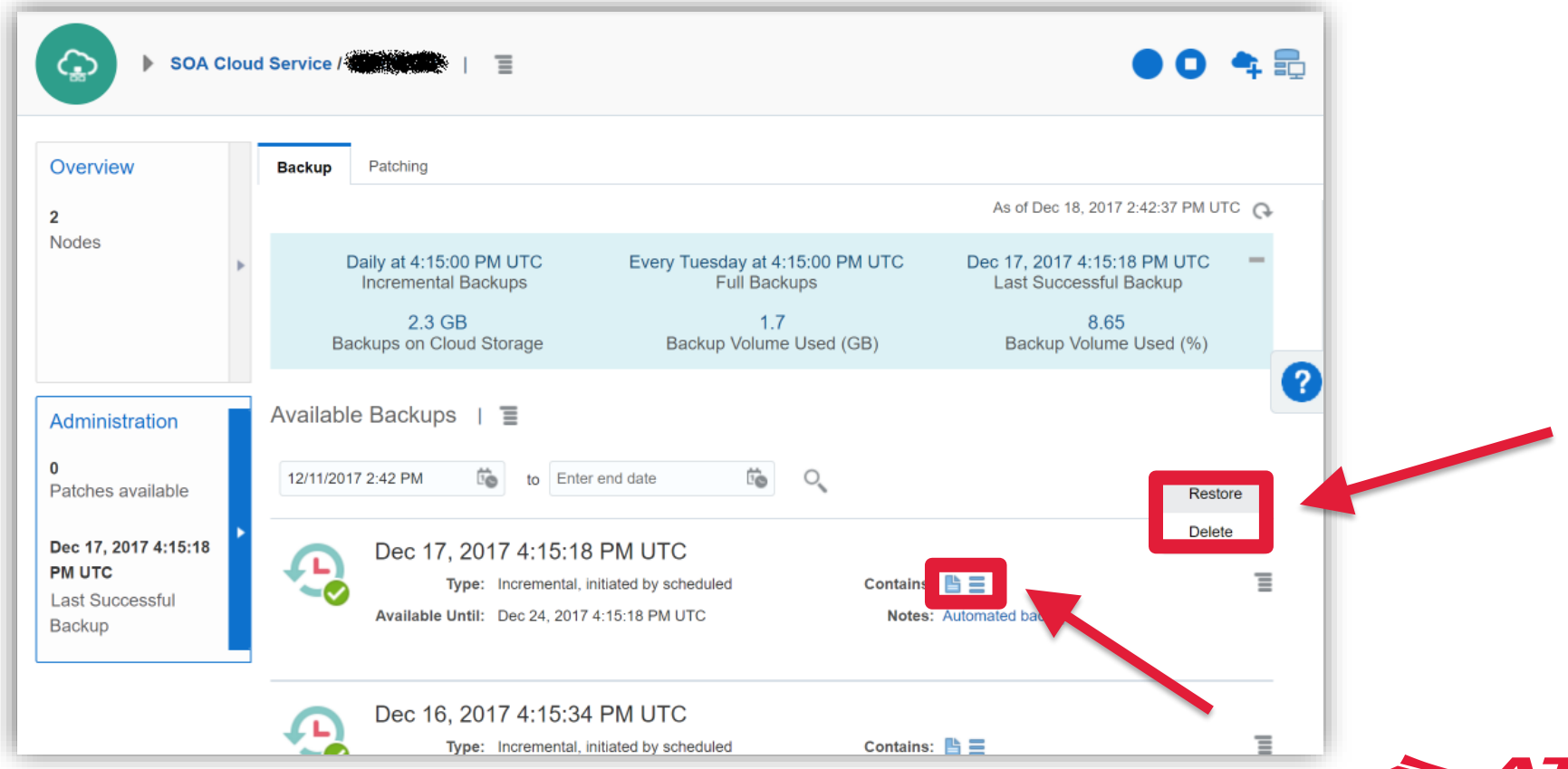
SOACS and DBaaS Backups

- SOACS and DBaaS backups may or may not be co-dependent
- Can restore/delete, but manage available disk space manually



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Monitoring

- No monitoring out-of-the-box
- Consider OEM Cloud Control or equivalent monitoring

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Patching

- Many zero downtime patches available
- Manually, or some through cloud console

```
export ORACLE_HOME=/u01/app/oracle/middleware
export PATCH_TOP=/u01/app/oracle/middleware/OPatch
export PATH=$PATCH_TOP:$PATH
which opatch
which unzip
opatch version
opatch lsinventory -jre /u01/jdk/jre
cd $PATCH_TOP
unzip ~/patches/p24654879_122120_Generic.zip
cd $PATCH_TOP/24654879
opatch apply
```


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Scaling

- Scaling up and down

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SSH Key Management

- SSH key management

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Deployment

- Deployment (e.g., SOA, OSB, BAM, WSM, etc.)
- And configuration (think OTD)

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DNS Management

- DNS managed independently

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VPN Setup

- VPN configuration, as needed

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License Renewal

- A non-metered plan is the way to go
- May involve difficult migration during scale down

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Issues

Pricing Concerns

- Database Edition impact on pricing
  - Enterprise – additional performance and availability
  - High Performance – plus all management packs, but no Active Data Guard, no in-memory, no Oracle RAC One Node, no RAC
  - Extreme Performance – no Oracle RAC One Node

	Standard Edition	**Enterprise Edition**	**Enterprise Edition** *High Performance*	**Enterprise Edition** *Extreme Performance*
Single Instance	✓	✓	✓	✓
Single Instance + Data Guard Standby		✓	✓	✓
Database Clustering + RAC				✓
Database Clustering + RAC and Data Guard Standby				✓

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Technical Issues

- p24525712_122120_Generic.zip

```
<Critical> <WebLogicServer> <BEA-000386> java.lang.IllegalStateException: trying to set
illegal state, present state RESUMING, new state ADMIN
```

- p24654879_122120_Generic.zip

```
PeerSiteRecoveryLeaseMaintenance: Unable to create either connection or prepared
statements for cross-site recovery
```

- Email addresses tied to backup jobs
- Complete environment restarts (due to associations) to add SSH keys ★ *serious*
- Complete environment restart to add more ASM disk space to DB servers ★ *serious*
- EM Console issues when saving properties
- Service unavailability when starting/stopping composites ★ *serious*
- Inability to mount additional DBFS filesystems on midtier ★ *serious*
- Cloud operations not completing due to backend REST timeouts

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Pricing / Performance

Pricing

- Non-metered service is the way to go
- 1 OCPU = 2 AWS EC2 vCPUs

Product	Price	Metric
SOA Cloud Service	$2,750	OCPU/month

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Performance

- 1 OCPU midtier
- 2 OCPU database

Composite Name	State	Avg (ms)	Min (ms)	Max (ms)	Count
CompositeA	Completed	185.938	76.000	234.400	24
CompositeA	Faulted	311.100	310.500	311.700	2
CompositeD	Completed	0.016	0.000	65.700	73,486
CompositeD	Rolled Back	15.450	15.100	15.800	2
CompositeE	Completed	0.257	0.100	239.100	213,775
CompositeG	Completed	11.674	0.700	205.300	20,223
CompositeH	Completed	0.456	0.000	5.200	922
CompositeI	Completed	0.001	0.000	53.100	191,252
CompositeJ	Completed	0.005	0.000	251.900	444,889
CompositeK	Completed	0.001	0.000	49.100	432,434
CompositeL	Completed	0.028	0.000	6.800	13,736
CompositeM	Completed	0.154	0.000	1103.900	722,540
CompositeO	Completed	0.598	0.000	284.500	274,928
CompositeP	Completed	0.358	0.000	1172.300	228,112
CompositeQ	Completed	135.773	0.300	219.900	40
CompositeQ	Faulted	331.300	331.300	331.300	1
CompositeR	Completed	32.700	32.700	32.700	1
CompositeS	Completed	0.001	0.000	0.700	5,611

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Conclusion

My Thoughts

Pros:

- Superior performance
- Truly an impressive, comprehensive, and complete integration toolset
- Easier provisioning, some operations simplified
- Skillsets readily available in the market, some cloud education required
- Great for test environments too

Cons:

- Cost
- Still need a middleware administrator and DBA
- Minor Oracle Cloud Support issues
- Minor product issues not found in on-premise versions
- On-premise will be cost prohibitive in the future

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To Continue the Discussion

Want to learn more about how Attain is different?

Please contact us.
We're eager to work with you.

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