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| Doc Name | Capacity Planning for Oracle Workload in Azure |
| Gassco Reviewer / Approver: | Kenneth / Frode |
| Author: | Bidyendu Dey |
| Classification: | VM Capacity & Provisioning in Azure for Database Servers |
| Last Revision Date: |  |
| Purpose | This SOP covers the |
| Scope | This SOP should be used for decide VM Capacity & Provisioning in Azure for Database Servers |
| Task Accountability |  |
| Task Responsibility |  |
| Prerequisites |  |
| Applicable Region | West Europe |

**Requirements**

* Database size and growth rate.
* IOPS requirements, which can be estimated based on Oracle AWR reports or other network monitoring tools.
* **Configuration options**

There are four potential areas that to improve performance in an Azure environment:

Virtual machine size

Network throughput

Disk types and configurations

Disk cache settings

* Oracle AWR report to get the metrics (IOPS, Mbps, GiBs, and so on). VM based on the metrics collected during Regular and peak workloads,

Following are the metrics that you can obtain from the AWR report:

* Total number of cores

### Virtual machine size

Following Information can be obtained from AWR reports from Different sections

A screenshot of a computer

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### Top 5 wait events

A screenshot of a graph

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**Memory   
  
A blue and yellow stripes

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**The following diagram shows the total I/O of read and write. There were 70.7 T read and 16 T written during the time of the report.**

A screenshot of a data

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**Choose VM Type**

Based on the information that you collected from the AWR report, the next step is to choose a VM of a similar size that meets your requirements.

Available option via Linux VM Provisioning scripts :

* **Standard\_E32s\_v4**
* **Standard\_E16s\_v4**

**Network throughput**

The total network throughput is estimated based on the following information:

* SQL\*Net traffic
* MBps x number of servers (outbound stream such as Oracle Data Guard)
* Other factors, such as application replication

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A screenshot of a table

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The following diagram shows the relation between throughput and IOPS

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**Disk types and configurations**

Disk Types in Azure

**Managed disks**: Azure manages the storage accounts that you use for your VM disks. You specify the disk type (Ultra-Premium or premium SSD or standard SSD) and the size of the disk that you need. Azure creates and manages the disk for you.

**Please refer to Provisioning scripts for the type of disks can be allocated in Gassco Azure Platform**

A screenshot of a screen

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**Capacity Management On server for Oracle**

We have the following threshold for the various file system.

/db and /prog: 90%

/dbbck and /dbfra: 75%

/log and /dblog:75%

/dbarch: 30%

Oracle database should not use more than 66% of memory allocated to any VM

Please refer to the Following view ORACLE\_MONITOR.FILESYSTEM\_ALERT

**How being Monitored :-**

* Scripts are scheduled on centralized Repository server which runs to check space utilization of every mount point on each server. Whenever we have a space crunch do below checks:
* Gassco Database environment having OEM 19c and in-house scripts as monitoring tools. All the supported databases are monitored by OEM
* Most of the System Level Monitoring and maintenance is done by in-house scripts which is schedule on Server Cron-Job.
* **Some of monitoring Jobs scheduled on servers are as below.**
* Archive log
* Alert log Monitoring
* Filesystem size
* SIDs with low defined processes
* High load on DB Server
* Some of the Maintenance jobs also trigger form Cron jobs
* Deleting expired/obsolete flashback archive log
* Deleting old data from aud$ Tables from database.

Note: Above procedure are also application indifferent of Primary or Standby server

**Reference:**

**Please refer to the repository database P008 :-**

ORACLE\_REPORT.DB\_GROWTH\_ALLOCATED

ORACLE\_REPORT.DB\_GROWTH\_USED

ORACLE\_MONITOR.ORACLE\_IO\_INFO

Note: This is database teams internal repository data collection database. Please reach out to database team

In case of any assistance required