Oracle® MICROS Enterprise Back Office

Server Sizing Guide
Release 9.0 and Later
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ORACLE

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Preface

This document contains hardware requirement and sizing guidelines as well as database growth projections for Oracle MICROS Enterprise Back Office. The server configurations published in this document are based on the analysis of data collected in lab and production environments.

Audience

This document is intended for system administrators responsible for identifying and preparing for hardware requirements and upgrades.

Customer Support

To contact Oracle Customer Support, access the Support Portal at the following URL:

https://iccp.custhelp.com/

When contacting Customer Support, please provide the following:

- Product version and program/module name
- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received and any associated log files
- Screen shots of each step you take

Documentation

Product documentation is available on the Oracle Help Center at https://docs.oracle.com/en/industries/food-beverage/

Revision History

Date	Description of Change
October 2017	Initial publication
December 2017	Updated recommended CPU for the Analysis Aggregation service.
October 2018	Updated release value on the title page.
April 2019	Added statement to Analysis Aggregation Service section on level 1 guidelines for environments that do not use Oracle Business Intelligence.
August 2023	Updated guide title.

1 FAQ

What Does Each Hardware Guideline Include?

The hardware guidelines provided for each server and for each application account only for the components installed by the Enterprise Back Office installation wizard. For example, installing the Reporting and Analytics Portal also installs Oracle WebLogic, and the hardware guideline includes the WebLogic requirements.

The guidelines do not include hardware requirements for operating systems, prerequisite software, and other applications that must be or will be run on the server.

For example, this document specifies 8GB of RAM for Level 1 load for the Aggregation Database, but this specification does not account for:

- The operating system.
- Prerequisite software such as Java or the database server.
- Other applications that may be installed or run on the server, such as Oracle SQL Developer, Adobe Reader, and Microsoft Office.

What do the Level Guidelines Mean?

This document provides metrics to identify three customer levels for each database and application. Evaluate your environment against each metric to identify the applicable hardware specification.

For example, an organization can project 550 total users accessing Reporting and Analytics for reporting or employee self-service functionality, but expects only 10-20 employees accessing Inventory Management. This organization would want to use the Level 2 specifications as a guideline for purchasing hardware for the Reporting and Analytics application server, but likely will only need to use the Level 1 specifications as a guideline for the Inventory Management application server.

How Precise are the Guidelines?

Oracle MICROS provides the guidelines for estimating hardware needs and future growth.

For example, an organization projects having 550 total users for Reporting and Analytics, but expects up to 35 users to be logging into the application at any one time. While the total users indicate a Level 2 hardware requirement, the concurrent users indicate a Level 3 hardware requirement. This document cannot provide rules determining which set of guidelines correlate to the best performance or best cost efficiency in such a scenario.

What if a Server Hosts More than One Application?

Each guideline in this document omits potentially overlapping components, such as operating system and prerequisite software. Add the specifications for each component or application to be hosted on the server to create a combined hardware estimate.

For example, to host Reporting and Analytics (Level 2), Admin Server, and InfoDelivery on one server, you can add the specifications and estimate the need for a 6 (2+2+2) CPU server.

The estimate is based on recommended specifications and not minimum specifications, so you can adjust the estimate based on your environment's expected load for each component. For example, an organization that only exports data once a month may not experience performance degradation using a 4 CPU server.

2 Database Hardware Guidelines

This section provides hardware and storage growth guidelines for Enterprise Back Office database servers.

Enterprise Back Office databases support RAID 0, RAID 1, and RAID 10.
Consider using Storage Area Networks (SAN) instead of local hard drives for large-scale deployments that:

- Are considering database redundancy options such as Microsoft Clustering or Oracle Real Application Clusters (RAC), or
- The throughput of transactions surpasses the load of server-based disk subsystems.

Network-Attached Storage (NAS) devices, even when attached through iSCSI, are not considered a suitable replacement for a professional SAN storage solution and should not be used to operate a production database environment. Only use NAS devices for offline backup.

Location Activity Database

The Location Activity database can be installed with or separately from the Aggregation database.

The following table describes the sizing and hardware guidelines for each level:

Table 1 – Location Activity Database Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Users	1-11	12-25	25+
Peak # of Queries	1-11	12-25	25+
CPU (Cores)	1	4	8
RAM	8GB	16GB	32GB

Aggregation Database

The Aggregation database can be installed as a schema in the same database server as the Location Activity database or in a separate database server.

The following table describes the sizing and hardware guidelines for each level:

Table 2 – Aggregation Database Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Users	1-11	12-25	25+
Peak # of Queries	1-11	12-25	25+
CPU (Cores)	1	4	8

RAM	8GB	16GB	32GB

Gift and Loyalty Database

The following table describes the sizing and hardware guidelines for each level:

Table 3 – Gift and Loyalty Database Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Users	1-11	12-25	25+
Peak # of Queries	1-11	12-25	25+
CPU (Cores)	1	4	8
RAM	8GB	16GB	32GB

Inventory Management Database

The following table describes the sizing and hardware guidelines for each level:

Table 4 – Inventory Management Database Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Users	1-11	12-25	25+
CPU (Cores)	1	2	4
RAM	12GB	12GB	12GB
HDD	146GB	2x146GB	4x146GB

3 Database Storage Growth Projection

Base Operational Data is a per-year estimate of the Location Activity database, which is data common across all Food and Beverage operations (such as check details, menu item sales, discounts, tenders, and taxes) in Enterprise Back Office.

- The data is based on the current version of Reporting and Analytics, and does not account for future functionality requiring more data storage or the addition of subject areas.
- The projection uses the size of data and indexes, and does not account for backups and other maintenance operations.
- The projection is based on an average Food and Beverage operating environment.
    - Organizations with higher transaction volumes or a broader range of guest check features collected by Reporting and Analytics, such as airports, may need to add additional storage to the estimate.
    - Organizations with lower transaction volumes or a limited set of menu items may require less storage than the given estimate.

The Aggregation database is a three-year rolling set of data for analysis, and the storage estimate uses a three-year projection of the Base Operational Data.

Location Activity Database

For the Location Activity database, Oracle MICROS recommends allocating 20GB of storage space per year for every 50 workstations or 10 locations.

Add a percentage per year based on whether your environment or deployment uses the following components and configurations:

- Journal Log: 300%
- Kitchen Display System: 40%
- Inventory: 20%
- Cash Management: 10%
- Labor Management: 5%
- Common Currency: 5%

For example, a deployment using the Kitchen Display System, Cash Management, and Labor Management calculates 20*(1+0.4+0.1+0.05) for an estimate of 31GB of storage needed per year. Furthermore, if the deployment expects data from 80 workstations, calculate 31*(1+0.6) for an estimate of 50GB of storage needed per year.

Aggregation Database

For the Aggregation database, Oracle MICROS recommends the following storage allocation guidelines.

Table 5 - Aggregation Database Growth Projection

Workstations	Locations	Storage Size
0-100	0-20	250 GB
101-200	21-40	350 GB
201-300	41-60	425 GB
301-400	61-80	500 GB
401-1000	81-200	20GB of storage space per year for every 50 workstations or 10 locations
Greater than 1000	Greater than 200	16GB of storage space per year for every 50 workstations or 10 locations

Monthly partitions of the Aggregation database have minimum object sizes, and the amount of data populating each partition can vary by the number of workstations or locations. The following figure shows how the sizes scale as the environment grows:

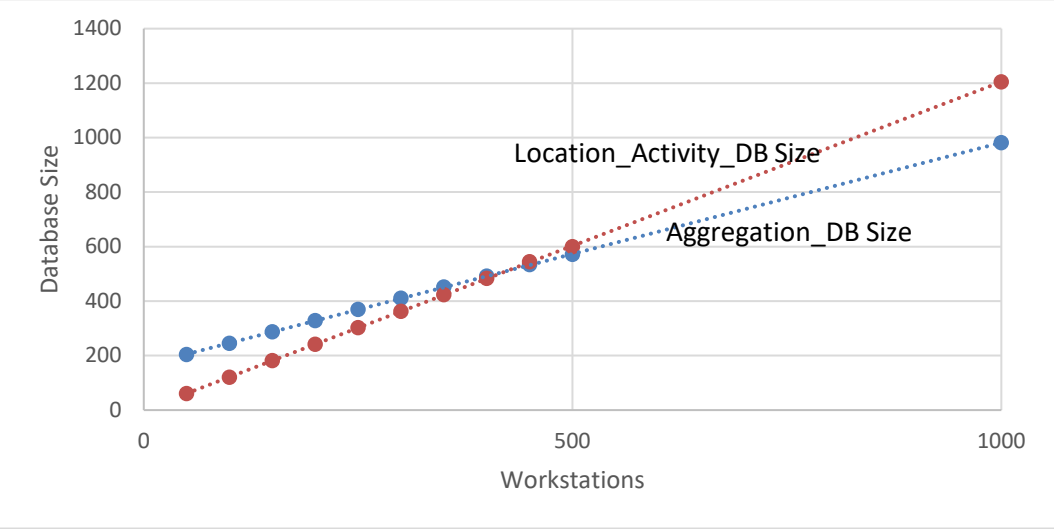

Figure 1 - Reporting and Analytics Database Size Projection by Environment Size

Inventory Management

Oracle MICROS recommends the following storage allocation guidelines for the Inventory Management database:

- 20GB for every 50 workstations, or for every 10 locations.
- 400MB each subsequent year for every 5 workstations, or for every location.

4 Application Hardware Guidelines

This section provides hardware guidelines for Enterprise Back Office applications and services.

Oracle Business Intelligence Enterprise Edition (OBIEE)

Oracle Business Intelligence Enterprise Edition (OBIEE) hardware specifications account for:

- OBIEE
- Oracle WebLogic
- Oracle WebLogic Administration Server

The following table describes the sizing and hardware guidelines for each level:

Table 6 - OBIEE Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Sessions	1-11	12-25	25+
Peak # of Queries	1-11	12-25	25+
CPU (Cores)	2	2	4
RAM	8GB	16GB	32GB
HDD	50GB	50GB	50GB

Reporting and Analytics

The Reporting and Analytics hardware specifications account for:

- Reporting and Analytics web application
- Oracle WebLogic

The following table describes the sizing and hardware guidelines for each level:

Table 7 - R&A Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Sessions	1-29	30-59	60+
CPU (Cores)	2	2	4
RAM	8GB	16GB	32GB
HDD	50GB	50GB	50GB

Analysis Aggregation Service

The following table describes the sizing and hardware guidelines for each level:

Table 8 – Analysis Aggregation Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
CPU	2	4	8
RAM	8GB	16GB	40GB
Read thread pool size	10	15	30
Process thread pool size	2	5	5
Write thread pool size	10	15	30
Max jobs	2	3	5
Connection pool size	25	35	65

Oracle recommends setting up multiple Aggregation servers for environments handling heavy loads. Do not enable the Aggregation Monitor on more than one Aggregation server.

Level 1 guidelines typically apply to environments that do not use Oracle Business Intelligence.

Gift and Loyalty

The Gift and Loyalty hardware specifications account for:

- Gift and Loyalty web application
- Oracle WebLogic

The following table describes the sizing and hardware guidelines for each level:

Table 9 - Gift and Loyalty Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Sessions	1-29	30-59	60+
CPU (Cores)	2	2	4
RAM	8GB	16GB	32GB
HDD	32GB	32GB	32GB

Inventory Management

The Inventory Management hardware specifications account the following components:

- Inventory Management web application
- Inventory Management Automation Service (MIA2)

- Inventory Management Automation Service Monitor

The following table describes the sizing and hardware guidelines for each level:

Table 10 – Inventory Management Guidelines

Components	Level 1	Level 2	Level 3
Total Users	1-499	500-999	1000+
Concurrent Sessions	1-29	30-59	60+
CPU (Cores)	2	6	8
RAM	16GB	20GB	24GB
HDD	4x146GB	6x146GB	8x146GB

Components and Services

You can install the following components and services on standalone servers or with other applications:

- Admin Server
- Aggregation and Adjustment
- Remote Transfer Agent (Master and Posting)
- Alert Engine
- Info Delivery
- Enterprise Maintenance Services Batch Service
- Simphony Mobile Aggregation

Add the following hardware specifications to a server for each component or service you are installing:

Table 11 – Component and Service Hardware Guidelines

Components	Specification
CPU (Cores)	2
RAM	4GB
HDD	8GB

For example, if you are installing the Admin Server and Info Delivery on the same server as Reporting and Analytics, you would add 4 cores, 8GB of RAM, and 16GB of HDD to the Reporting and Analytics server specification to account for the two additional components.