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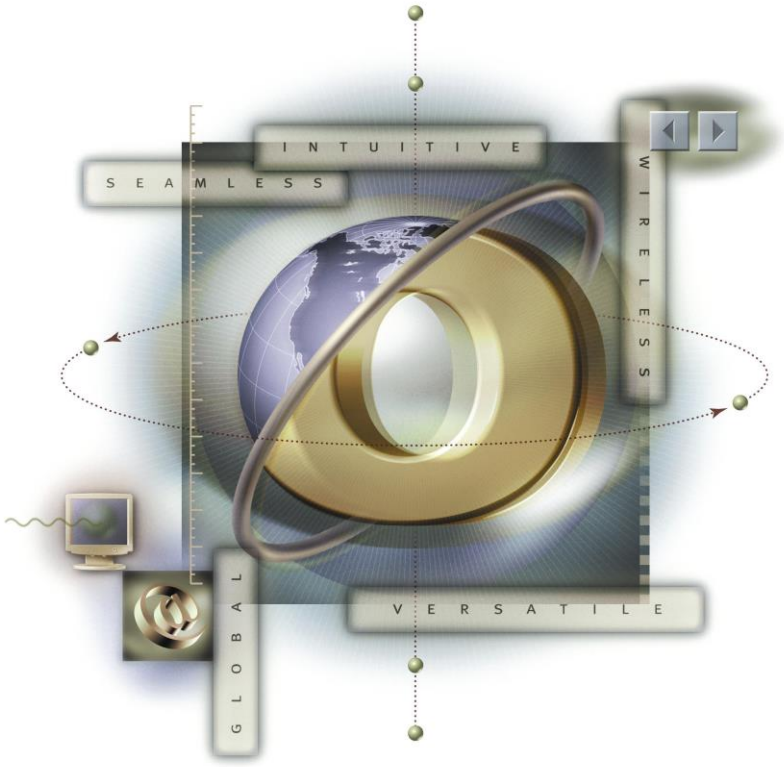


# Opera Hotel Edition

## *5.0.04.03 Hardware Sizing for Microsoft OS*

*OPERA Version 5.0.04.03*

*January 5, 2015*

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Document Number: 1573- V50403 OPERA Hardware Sizing for Windows.doc

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# Purpose

This document is designed for use as a guide when specifying hardware for OPERA Hotel installations running 5.0.04.03 or above, which requires Oracle Weblogic application server media to be used. The hardware specifications are based on a limited production installation base and may be revised.

# Intended Audience

MICROS Sales Representatives, Installers and Technicians. This document contains Micros Systems proprietary information for Micros Employees and Customers.

# Sizing Methodology

There are 3 main components to servers,

- CPU
- Memory
- Drives

Each component has factors that determine proper size. At a High level, CPU and Memory are driven by the number of users and the type of processing. Disk configuration is driven by data size and the necessity for speed of access (Reduced IO contention).

The sizes published in this document are based on analysis of empirical data from Beta sites and load testing results The hardware specifications are based on available hardware at the time of writing.

The number of connections is the sum of the number of PC's with the ability to connect to OPERA at one time plus the number of external connection sources, i.e. third party software, interface PC(s).

Example and generic calculations for determining the user equivalent load of CRS interfaces, GDS and OWS are included in this document and must be considered.

Server sizes are designed to support all OPERA modules in any configuration, as long as the number of connections is not exceeded. Compatibility and performance of OPERA Hotel Servers with other products such as Yield Management, Materials Management or Back office products has not been evaluated and should be considered separately when specifying servers.

### Large installs (Over 150 connections)

Larger installs classified as greater than 150 users will require a detailed analysis for proper sizing. Contact your Regional Micros Fidelio Professional Services Office for help with large configurations, as there are many possibilities based on customer preference.

# Supported Platforms

This document does not necessarily contain the most recent information regarding the versions of Operating Systems etc. that are supported for particular versions of OPERA.

That information is kept current in the document called "Support_of_Opera_Platforms_Versions_xx-date-xx.pdf" which is available on the OPERA Release Schedule page of the MICROS member website.

The most current one at the moment of writing this document is the below, but check for updates.

http://downloads.micros.com/fidelio/opera/ohe/documentation/release_schedule/Support_of_Opera_Platforms_Versions_2010-4-14.pdf

# Change Log

| Date | Description |
|---|---|
| 12/29/14 | Initial 5.0.04.03 sizing guide |
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# OPERA Xpress Limited Services Server Sizing

This sizing is applicable for **OPERA Xpress Limited Services** release of OPERA version **5.0.04.03** or higher. Other Configurations should refer to either the Single server sizing or use the standard dual server sizing.

The following criteria has to be met in order to use these specifications.

1. The server machine is dedicated **only** to OPERA Xpress and can serve no other purpose.

2. a Maximum of **6 concurrent PMS users**,
   4 **property interfaces**
   and **1 Central systems** interface connection (OXI) are allowed.

3. PMS module is the only product in use.
   Other OPERA modules are not designed to be used in this server configuration. Refer to 2 and 4 CPU single server sizing for deployment options with other modules active.

Use of the OPERA Xpress server as a workstation is not supported.

A Dedicated machine for server is required.
Separate workstations for each user.
Printers should be connected to workstations not server.

## *OPERA Xpress Server Specifications*

| | | |
|---|---|---|
| **Operating System** | A Supported 64 bit Windows Server OS | |
| **Number of Users** | Up to 6 Users | |
| | Minimum | Recommended |
| **CPU** | 2 CPU core, fastest available | 4 CPU core, fastest available |
| **Memory Minimum** | 8 GB | 12 GB |
| **Disk Minimum** | 1 x 500 GB IDE 7200k RPM drive. No specific drive letter requirements<br><br>**Optional recommended upgrades**<br>Additional IDE disk for Raid 1 configuration<br>Upgrade to ATA or SCSI and Raid Controller<br><br>**NOTE:** Hardware RAID controller is required in order to use RAID Disk configuration. | |
| **Interface Ports** | 4 port RS232 expansion card. (built in surge protection highly recommended) | |
| **Backup device** | IDE tape drive. Windows Backup can be used to perform **cold** backups to tape. Hot Backups will require regionally approved backup software, and additional Disk space for Archive logs. | |
| **Printer** | Laser printer | |

# OPERA Hotel Single Server Sizing (2 CPU cores)

This sizing is applicable for OPERA PMS and S&C modules of release **5.0.04.03** or higher.

The following criteria have to be met in order to use these specifications.

1. The server machine is dedicated **only** to OPERA and can serve no other purpose.
2. Up to **20 concurrent users**,
   **8 property interfaces**
   and **1 Central systems** interface connection (OXI) are allowed.
3. Postscript print drivers are the **only** print drivers allowed on the server.

## *OPERA Single Server Specifications*

| | | |
|---|---|---|
| **Operating System** | A Supported 64 bit Windows Server OS | |
| **Number of Users** | Up to 15 Users | Up to 20 Users |
| **CPU** | 2 CPU core, fastest available | 4 core, fastest available |
| **Memory Minimum** | 12 GB | 16 GB |
| | When tuning Oracle database buffers or other system components that impact memory consumption, the consideration should be given to the fact that approximately 64MB per user is required for user sessions. | |
| **Disk Minimum** | 2 x 72 GB 10K or 15K RPM SATA drive space. No specific drive letter requirements<br><br>**Recommendations**<br>C: 16GB System partition drive 0<br>D: Remainder of Drive 0<br>E: Drive 1<br><br>**Optional Upgrades**<br>Additional disks for Raid 1 or Raid 0+1 configuration (**NOTE:** Hardware RAID controller is required in order to use Raid Disk configurations.).<br><br>SCSI Tape backup device, Backup software with Oracle Agent, and additional drive space for archive logs required if Hot Backups are used.<br><br>Example 4x72 GB drives (SCSI Ultra 320 or 10k SAS):<br>RAID 1 = 2 x 72 GB usable space<br>RAID 0+1 = 1 x 144 GB usable drive | |
| **Interface Ports** | 4 or 8 port RS232 expansion card. (built in surge protection highly recommended) | |
| **Backup device** | IDE tape drive and Windows Backup can be used to copy cold backups to tape. SCSI Tape device and third party backup software required for Hot Backups. | |
| **Printer** | Laser printer (Postscript drivers only) | |

Consideration should be given to using a separate PC for support connectivity for sites with > 10 Users. Connecting directly to the server using PCAnywhere takes resources and can impact performance if the site has the maximum allowed users connected. A support PC will also allow support to have a dedicated client machine to use to investigate any issues that the site may report.

# OPERA Hotel Single Server Sizing (4 CPU cores)

This sizing is applicable for OPERA PMS and S&C modules of release **5.0.04.03** or higher.

The following criteria have to be met in order to use these specifications.

1. The server machine is dedicated **only** to OPERA and can serve no other purpose. Print Spooling, Third party software and other network services are not supported on the OPERA Server.
2. Up to **40 concurrent users**,
   **1 Central systems** interface connection (OXI) are allowed.
3. Maximum of **4 properties** if configured for multiproperty.
4. Property Interfaces should be installed on a separate server. See Supporting Hardware sizing for details.
5. Postscript print drivers are the **only** print drivers allowed on the server.

## *OPERA Single Server Specifications*

| | |
|---|---|
| **Operating System** | A Supported 64 bit Windows Server OS. |
| **Number of Users** | Up to 40 Users |
| **CPU** | 4 CPU core, fastest available |
| **Memory** | 16 GB |
| **Disk Minimum** | 8 x 72 GB 10K or 15K RPM SATA drive space. No specific drive letter requirements<br>**Recommended setup using 8x 72GB drives**<br>Drives configured as 2 separate Raid strips, one RAID 1 and one Raid 0+1. 128Kb stripe sets. Set 0 to use 2 drives (72GB usable space), set 1 to use remaining 6 drives (216 GB usable drive space)<br>C: 16 GB System partition on strip set 0<br>D: Remainder of stripe set 0<br>E: Strip set 1<br><br>**NOTE:** Hardware RAID controller is required in order to use Raid Disk configurations. |
| **Backup device** | Tape device compatible with backup software. Backup software must use Oracle Agent. |

Consideration should be given to using a separate PC for support connectivity. A support PC will allow support to have a dedicated client machine to use to investigate any issues that the site may report.

# OPERA Hotel Single Server Sizing (8 CPU cores – 80 Users)

This sizing is applicable for OPERA PMS and S&C modules of release **5.0.04.03** or higher.

The following criteria have to be met in order to use these specifications.

1. The server machine is dedicated **only** to OPERA and can serve no other purpose. Print Spooling, Third party software and other network services are not supported on the OPERA Server.
2. Up to **80 concurrent users**,
   **1 Central systems** interface connection (OXI) are allowed.
3. Maximum of **4 properties** if configured for multiproperty.
4. Property Interfaces should be installed on a separate server. See Supporting Hardware sizing for details.
5. Postscript print drivers are the **only** print drivers allowed on the server.

## *OPERA Single Server Specifications*

| | |
|---|---|
| **Operating System** | A Supported Windows Server x64 OS (64bit OS) |
| **Number of Users** | Up to 80 Users |
| **CPU** | 2 x 4 CPU core, fastest available |
| **Memory** | 18 GB |
| **Disk Minimum** | 8 x 72 GB 15K RPM SATA drive space. No specific drive letter requirements<br><br>**Recommended setup using 8x 72GB 15K RPM drives**<br>Drives configured as 2 separate Raid strips, one RAID 1 and one Raid 0+1. 128Kb stripe sets. Set 0 to use 2 drives (72GB usable space), set 1 to use remaining 6 drives (216 GB usable drive space)<br>C: 16 GB System partition on strip set 0<br>D: Remainder of stripe set 0<br>E: Strip set 1<br><br>**NOTE:** Hardware RAID controller is required in order to use Raid Disk configurations. |
| **Backup device** | Tape device compatible with backup software. Backup software must use Oracle Agent. |

**Consideration should be given to using a separate PC for support connectivity. A support PC will allow support to have a dedicated client machine to use to investigate any issues that the site may report.**

# OPERA Hotel Single Server Sizing (8 CPU cores – 140 Users)

This sizing is applicable for OPERA PMS and S&C modules of release **5.0.04.03** or higher.

The following criteria have to be met in order to use these specifications.

1. The server machine is dedicated **only** to OPERA and can serve no other purpose. Print Spooling, Third party software and other network services are not supported on the OPERA Server.
2. Up to **140 concurrent users**,
   **1 Central systems** interface connection (OXI) are allowed.
3. Maximum of **4 properties** if configured for multiproperty.
4. Property Interfaces should be installed on a separate server. See Supporting Hardware sizing for details.
5. Postscript print drivers are the **only** print drivers allowed on the server.

## *OPERA Single Server Specifications*

| | |
|---|---|
| **Operating System** | A Supported 64 bit Windows Server OS |
| **Number of Users** | Up to 140 Users |
| **CPU** | 2 x 4 CPU core, fastest available |
| **Memory** | 24 GB |
| **Disk Minimum** | 14 x 72 GB 10K or 15K RPM SATA drive space. No specific drive letter requirements<br><br>Note: This configuration in typical hardware configurations will require an external drive array.<br><br>**Recommended setup using 14x 72GB 10K RPM drives**<br>Drives configured as 2 separate Raid strips, one RAID 1 and one Raid 0+1. 128Kb stripe sets. Set 0 to use 2 drives (72GB usable space), set 1 to use remaining 12 drives (432 GB usable drive space)<br>C: 16 GB System partition on strip set 0<br>D: Remainder of stripe set 0<br>E: Strip set 1<br><br>**NOTE:** Hardware RAID controller is required in order to use Raid Disk configurations. |
| **Backup device** | Tape device compatible with backup software. Backup software must use Oracle Agent. |

**Consideration should be given to using a separate PC for support connectivity. A support PC will allow support to have a dedicated client machine to use to investigate any issues that the site may report.**

# OPERA Hotel Windows Server Sizing

| # Concurrent sessions Note 1 | | <20 | 21-40 | 41-80 | 81-120 | 121-150 | |
|---|---|---|---|---|---|---|---|
| Database Server | | See Single Server Specifications | | | | | |
| | CPU<br>Memory<br>SCSI Drive Count and size (Raid 1) (Note 3) | | 2 CPU core, fastest available<br>4 GB<br>(4 x 72 GB) | 2 CPU core, fastest available<br>6 GB<br>(6 x 72 GB) | 4 CPU core, fastest available<br>8 GB<br>(8 x 72GB) | 4 CPU core, fastest available<br>8 GB<br>(8 x 72GB) | |
| Application Server | CPU<br>Memory (Note 4)<br>Drive size (Raid 1 or 5) (Note 5) | | 2 CPU core, fastest available<br>8 GB<br>36 GB Usable drive space | 2 CPU core, fastest available<br>12GB<br>36 GB Usable drive space | 4 CPU core, fastest available<br>16GB<br>64 bit OS<br>72 GB Usable drive space | 2 Servers in Parallel (Note 6)<br>2 CPU core, fastest available<br>16GB<br>36 GB Usable drive space | 4 CPU core, fastest available<br>24GB<br>*64* bit *OS*<br>72 GB Usable drive space |

**Note 1**: # Connections is the sum of the number of PC's with the ability to connect to OPERA at one time plus the number of external connection sources, i.e. third party software, interfaces, Web Booking, etc... See page 10 for guidelines on determining users and interface traffic load.

**Note 2**: Servers are sized to support hot backups using 3rd party backup solutions that use an Oracle Agent.

**Note 3**: Raid level 5 not supported for drives containing datafiles due to disk write performance impact. Using bigger drives and reducing the number can negatively impact I/O performance. Number of drives is more important than size for IO distribution. It is not intended that external disk storage be required for standard installations. 72GB configurations for db server are based on SCSI Ultra320 or SAS controllers and drives with < 5ms seek times. Recommended drive configurations are Raid 1, 0+1 or 1+0.

**Note 4**: Application server sizing based on 1 current generation CPU core per 40 concurrent users. Memory sizing based on median of memory consumption of a mix of "medium-lightly" active users 32MB user and "heavily" active users 64 MB/user.

**Note 5**: Raid level 1 or Raid level 5 supported for Application server. Application Server is not I/O intensive but requires disk space for storage of NA reports and export files as well as temporary space used in generating other reports. When using multiple applications servers a shared disk location for NA reports and exports will need to be available. UNC locations on network file servers, DFS and mapped drives can all be used for this purpose.

**Note 6:** For multiple Applications servers Micros recommends the implementation of Network Load balancers. These can either be hardware based e.g. F5, Cisco Load director or software based e.g. Windows network load balancing, DNS round robin. Please contact your regional Micros Professional Services team for details on options and solutions that may be available as a service.