

Recommendations for Standard ERP 8.1 Server hardware, software and network infrastructure

January 15, 2016

Standard ERP Server Hardware

Standard ERP is usually installed as the core ERP system in a business or as the core ERP system with an integrated on-line front-end. This makes it the most critical piece of software most of our customers are using, so the cost of a slow or unavailable installation is usually very high. As hardware gets older the risk of failure increases. As the business grows and the usage of Standard ERP changes and expands, the hardware requirements also changes. For these reasons we recommend that customers plan on buying a new server every 12 to 18 months. The old server can usually be used for duties less critical than running the primary ERP system.

We require our customers to have reserve machines in place in case of hardware failure of the primary system.

When recommending hardware we first look at three factors that will determine performance requirements. These factors should be measured at the peak hour of the month or year if the business is highly seasonal:

- The number of users active simultaneously. If the system will be licensed with named users this needs to be estimated.
- The type of users: CRM, Stock, Invoicing, Bookkeeping, POS, Hotel etc.
- The number and type of interactive transactions added and changed.

There are also some special considerations that can cause the required size of the system to grow:

- The required availability outside office hours leads to a shorter maintenance windows
- Large amounts of historical data saved in the system
- Complex customizations
- Large or frequent imports of data from other systems
- Integrated web-server with more than five hundred visitors per day

Below we describe four sample configurations. These configurations have been shown to give acceptable performance in normal use. If your usage is expected to be very heavy or very light you may need to make adjustments, as follows:

- If you have other functions running, such as anything from the list of special considerations above, extra capacity must be calculated.
- If you have other software running on the server machine, the requirements of that software must also be taken into account

The users in the example configurations are assumed to be normal users in a typical system using the Sales, Purchase and Nominal Ledgers, Logistics and CRM. If you are deploying a system with a significantly different usage pattern, your needs could be different.

For example, a high-volume Point of Sales environment in which users create many large invoices that update stock would need more powerful hardware than the average environment.

Very Small Server - suitable for 1 - 5 users

- CPU 1.8 GHz base frequency, two cores
- RAM 4 GB
- Disk 2x7200 RPM mirrored disks • Network 100 Mb/s

Small Server - suitable for 3 - 20 users

- CPU 2.0 GHz base frequency, two cores
- RAM 6 GB
- Disk 2x128 GB mirrored SSD units • Network 100 Mb/s

Medium Server - suitable for 15 - 40 users

- CPU 2.5 GHz base frequency, four cores
- RAM 10 GB
- Disk 2x256 GB mirrored SSD units
- Network 1 Gb/s (for backups over the network)

Medium Large Server - suitable for 30 - 80 users

- CPU 3 GHz base frequency, eight cores
- RAM 16 GB
- Disk 2x512 GB or 4x256 GB mirrored (RAID 1+0) SSD units for database
- Disk 4x15k RPM RAID 5 disks for OS and backups
- Network 1 Gb/s (for backups over the network)
- A Database Accelerator is recommended if the disks are not SSD

The CPUs recommended are the current generation (2015) Intel and AMD x86 CPUs. For IBM POWER8 and later based systems, similar GHz numbers apply.

SSD units should normally be of the Single Level Cell (SLC) type as Medium Level Cell (MLC) SSD units are less durable and have shorter lifespans. At the time of writing (January 2016), an SLC SSD costs €2.50- 3.00/GB.

For larger configurations please contact your HansaWorld office for help with configuring the appropriate hardware for your situation.

A cost-effective alternative to buying a new server every 12-18 months is to use the HansaWorld Cloud-Based Hosting service. This provides you with access to the best and optimal hardware as well as up-to-date software for a fixed monthly fee, giving you the opportunity to start using the best ERP solution without any initial investments.

RAM

We recommend that the server has

- 1 GB RAM for the operating system, 2GB RAM if the operating system is Microsoft Windows
- 0.5 GB for the base Standard ERP engine, and
- 10-50% of the database (HDB) size in extra RAM on top of that.

For example, a system with an 8 GB database should have 2.3 - 5.5 GB RAM. The higher percentage applies when the database contains little or no historical data, and the lower percentage when it contains 10 or more years' worth of historical data.

Standard ERP Server Software

The Standard ERP server runs on the following operating systems:

- Mac OS X and Mac OS X Server 10.10 or later (Intel 32 and 64bit)
- Windows Server 2008 SP2 or later (x86 and x64) .NET Framework 3.5 or .NET Framework 3.5 Client Profile must be installed
- RedHat Enterprise Linux version 7 and later (x86, x86-64, ppc and ppc64)
- SuSE Enterprise Linux version 12 and later (x86, x86-64, ppc and ppc64)
- Ubuntu 14.04 LTS and later

You should only use versions of Linux distributions that are officially supported by their developers. Glibc 2.6 is required, and Linux kernel version 3.0 or later should be used.

You should consider the following when choosing the software environment in which you will run Standard ERP:

- Do not use a Desktop Windows versions for the Standard ERP server
- When running on Microsoft Windows, anti-virus software should be used.
- When running on Microsoft Windows, 2GB RAM memory should be left for the operating system
- On all platforms, backup software is strongly recommended.
- When installing in a virtual environment (VMware, Xen etc.) special care must be taken to ensure disk writing consistency. Standard ERP normally ensures the consistency of its database by forcing data to the physical disk device, or battery backed cache if available. In some configurations with visualization software these safety features can fail to be enabled. Care must be taken that this disk synchronization is enabled inside the virtual environment.
- Visualization environments have a small to medium performance impact, especially during database rebuilds, therefore we recommend avoiding them for larger installations.
- In large installations we recommend the purchase and use of HansaWorld's Database Accelerator. This will give a performance improvement when Standard ERP writes to the database, particularly if the drives in the server are not SSD units.

Business Intelligence

If you plan to use SmartView by HansaWorld or any other Business Intelligence (BI) software, you may need a separate physical server for the BI Server application for performance reasons. This

server should be designed to different specifications than the main Standard ERP server for optimal performance. For example, BI tools need more RAM than the Standard ERP Server application.

Relational Database Connection

If you plan to use the Relational Database Shadowing capability that is built in to Standard ERP, you should consider the following:

- You may need a separate physical server for the Oracle or Microsoft SQL database for performance reasons.
- Running in "shadowed" mode will have a small performance impact on the Standard ERP server.

Backups and Reliability

It is vital for your business's survival that you take proper responsibility for the safety, reliability and disaster-recoverability of your installation. A modern company that faces a computer disaster without proper backups will often face serious difficulties to even survive. You need to take responsibility for your own system, its data, and your company's profitability and survival.

Listed below are some minimum recommendations. You must not use this as a final checklist of all that you need to do to be "safe":

- It is vital that your disks have protection (RAID 1, 5, 1+0 etc.) Unprotected disks, such as single disks and disks in RAID 0 configuration, will put your vital data at considerable risk.
- Off-site backups are an important part of any backup and recovery strategy. This can be solved with network transfers of the backups or regularly sending physical tapes to a different location.
- Reserve systems and infrastructure onto which the backups can be restored in case of a disaster are a must. A full backup and a broken machine still means your business will be stopped until you can find a machine. And then you need to order the tape-drive that might have a weeks delivery time.
- You must test your recovery process. If you have not successfully tested your backup procedure you should assume that it does not work.
- If you are running a Windows server, you must of course install an appropriate anti-virus solution.

Standard ERP Network Infrastructure

Standard ERP communicates using TCP/IP networking, and has relatively low bandwidth requirements. However, for a good user experience we do recommend a low latency.

A network connection of 30 kb/s for the first user and an additional 10 kb/s per user tends to give an acceptable working environment. The recommended bandwidth is 50 kb/s for the first user and an additional 15 kb/s per user. This is the bandwidth that should be dedicated to Standard ERP. The figures should be increased if users will also be using the network for other purposes, such as web-browsing. The bandwidth requirements will also increase in the following circumstances:

- If users will routinely produce large reports (with many pages of output).
- If you are using pictures on items and especially if you are using the CoverFlow paste special feature on Mac OS X.

- If you will frequently be using the Document Management feature to attach files to records.
- If users are frequently idle, the bandwidth usage decreases.

Network latency should preferably be at or below 0.1 seconds. Latencies up to 0.5 seconds can generally be worked with; however, the user experience will start to suffer at this level or above. As an example, a 128 kb/s line into the server with a 0.1s latency can be expected to give good performance for up to six users and will be useable for 10 - 11 users if used exclusively for Standard ERP.

Standard ERP Clients

Standard ERP 8.0 clients run on several platforms. These are the recommended versions:

- OSX 10.10 or later
- Windows 7 or later
- Android 4.4 or later
- iOS 6.1 or later

For a normal client, the system specifications required by the operating system will be sufficient to run the Standard ERP client if no other applications are being used. If other applications are used at the same time, more CPU and memory might be needed. For a synchronized POS client, 4 GB RAM, a 1.5 GHz CPU and a 100 Mb/s network are recommended.

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