HP Asset Manager

Asset Manager® 5.20 Sizing Guide Using the Oracle® Database Server, or IBM® DB2® Database Server, or Microsoft® SQL Server

Legal Notices

Introduction

This sizing guide is intended to assist you in implementing an Asset Manager® version 5.20 Web server and one of the following database configurations:

- On HP® HP-UX® 11i, either the IBM® DB2® Universal Database (UDB) Version 9.1, or the Oracle® Database 10g

  Or

- On Windows Server® 2003, Microsoft® SQL Server 2005 SP1

- On Windows Server® 2008, Microsoft® SQL Server 2008 (64bits)

Asset Manager® Architecture

AssetCenter
WebTier
Server

AssetCenter
WebService
server

AssetCenter WebTier and
WebService servers

AssetCenter Background
Application Server (amsrv)

AssetCenter
Web Client

AssetCenter
Windows
native client

AssetCenter
RDBMS Server
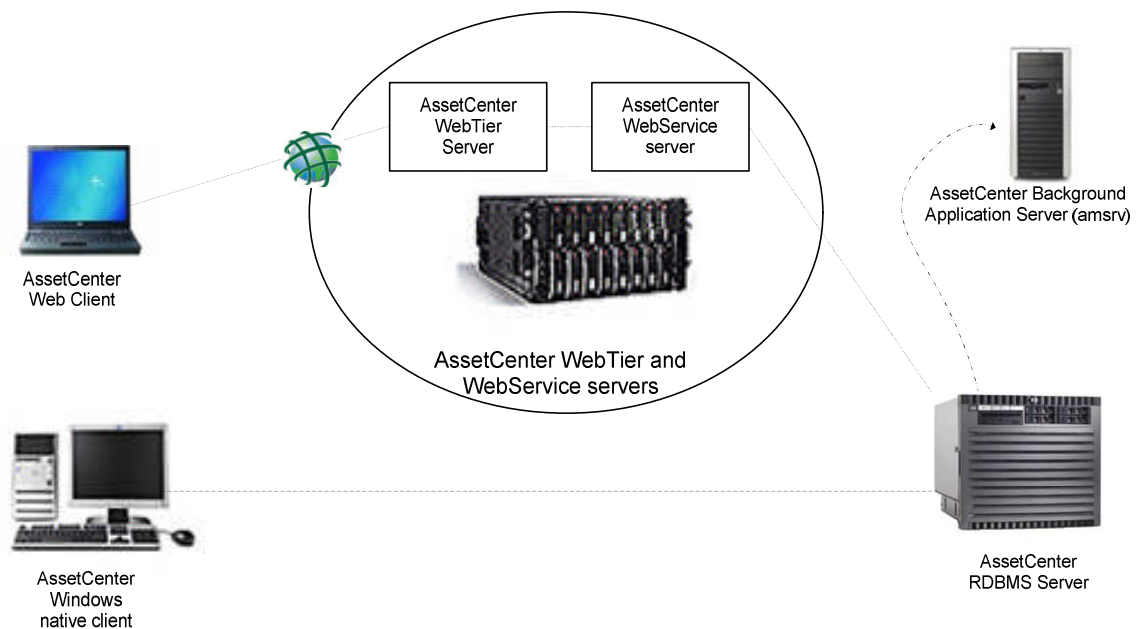
The following events occur:

- The Asset Manager Windows® client (GUI) connects directly to the RDBMS server.
- The Asset Manager Web client connects to the Asset Manager Web Tier server. The Web Tier server connects to the Web Services server. Notice that some custom-made, end-user applications could connect directly to the Web Services server.
- The Asset Manager Web Tier and Web Services logical servers can be installed on the same physical server or on different servers. There can be one or multiple instances of each Web Tier and Web Services logical server.

- The Asset Manager background application server (amsrv) connects directly to the RDBMS server. There is no direct connection between the Asset Manager Windows GUI or Web Client and the Asset Manager background application server.

Sizing definitions

This section defines the components of an Asset Manager implementation that are described in this sizing guide.

Database and Windows® client

These sizing categories are given for a classical installation of Asset Manager 5.20 (amsrv server and database):

- A small user environment would consist of fewer than 100 concurrent users and fewer than 500,000 Portfolio items.
- A medium user environment would consist of between 100 and 500 concurrent users, and between 500,000 and 2.5 million Portfolio items.
- A large user environment would consist of more than 500 and up to 1000 concurrent users, and between 2.5 million and 5 million Portfolio items.

Note: User environments with more than 1000 concurrent users would be handled on an individual basis, and are not specifically addressed in this document.

Web environment

This sizing guide has been redacted based on the following hypothesis: A Web user actively interacts with the Web server during 15% of his or her working time with Asset Manager 5.20 Web. During the rest of the time the user is filling forms, reading tables, or involved in actions that do not require data exchanges. Sizing for Web users is as follow:

Asset Manager Web environment	Number of concurrent users:
Entry-level	0-100
Small	100-200
Medium	200-300
Superior	300-500
Large	500-1000

Note: Web environments with more than 1000 concurrent users would be handled on an individual basis, and are not specifically addressed in this document.

You can have several Asset Manager Web 5.20 instances, of varying sizes, for a unique database. In such a case, you must evaluate separately how many Web users will use each instance. You can then decide either to split them into separate physical servers or keep a single one. For example, if you have 50 French users and 100 English users, consider a single small server with two separate Asset Manager Web 5.20 instances accommodating all 150 users, rather than an Entry-Level server for French users and a separate Small server for English users.

These physical servers are dedicated to running the application servers. An instance of Asset Manager Web 5.20 is made of two logical application server engines.

- The first one generates the HTML pages required by the Web users (the *Web Tier* Web application)

- The second one handles the database link and the processes logic (the *Web Services* Web application).

For example, if Tomcat is your application server, then you should have a Tomcat instance handling the Web Tier and another Tomcat instance running the Web Services, where each has a JVM® tuned precisely to its needs.

You can merge the two Web applications on a single application server engine for a very small number of concurrent users (fewer than 15). However, this is not recommended on Windows systems for a larger number of concurrent users.

Web connection

Notice: All the measures indicated on "Web connection" were done on the 5.01version of AssetCenter. An updated document will be available through support shortly after the release.

The recommended Web usage is to have the Web server as close as possible to the RDBMS: at least on the same LAN, and if possible on the same hub or switch.

When separate server machines are used for the Web Tier and for Web Services, they should be on the same LAN, and if possible on the same hub or switch.

Asset Manager 5.20 has been successfully tested on WANs having up to 400 ms ping time between the end user and the Web Tier.

Network latency recommendation for WANs

Usage	Recommended maximum ping time between the end user and the Web Tier Web server
Intensive	250 ms (latency time of 125 ms)
Casual	400 ms (latency time of 200 ms)

The network bandwidth required depends on the operations performed and the free available bandwidth on the network. As the free available bandwidth of a network is often statistically-based in a multi-user and multi-application environment, this document provides metrics compiled on a full screen-set type rather than simple bandwidth considerations. A simplified screen-set will require less data exchange on details.

Operation	Typical size (in kilobytes)
Display a list	43 kb on average
Display a detail	30 to 50 kb depending on the complexity of the screen
Detail : Display another tab with sub-details	28 to 45 kb depending on the complexity of the screen
Detail : Display a tab with a sub-list	30 to 45 kb depending on the complexity of the screen
Duplicate a Portfolio	110 kb on average

Hardware considerations

The hardware systems listed below are not intended to be a "shopping list" for hardware components. Rather they are chosen as representative of the hardware that would typically be used in a given implementation. Additionally, each level of hardware allows for future growth.

Resources required for the RDBMS server, such as CPU and memory, are very dependent on the implementation. Factors that may impact required hardware resources in Asset Manager systems can

include custom access restrictions, configuration of the lists, custom code for scripts, and wizard implementation. Refer to the *Asset Manager Tuning Guide* for further information on those topics.

Note: The sizing recommendations given here are for Asset Manager version 5.20.

Recommended hardware for database servers

This section suggests hardware configurations that are appropriate for HP-UX-based and Windows-based RDBMS servers.

Note: All the recommended HP server machines are available at www.hp.com.

Oracle® and DB2® Running on HP-UX®

The following hardware configurations are recommended for the Oracle and DB2 database servers used in the small, medium, and large Asset Manager implementations:

Small Asset Manager configuration

- HP Integrity rx2660 Server with two Dual-Core Intel® Itanium® 2 processors @ 1.66 gigahertz (GHz) with 18 MB cache (or better)
- 16 GB RAM (or more)
- A RAID 10 storage array that includes between four and six 146 GB or larger hard disks (for example a SAN RAID 5)

Medium Asset Manager configuration

- HP Integrity rx6600 or Integrity rx7640 Server with four Dual-Core Intel Itanium 2 processors @ 1.66 GHz with 18 MB cache (or better)
- 16 GB RAM (or more)
- A RAID 10 storage array that includes between six and eight 146 GB disks or or larger hard disks (for example a SAN RAID 5)

Large Asset Manager configuration

- HP Integrity rx8640 Server or SuperDome with twelve Dual-Core Intel Itanium 2 processors @ 1.6 GHz with 24 MB cache (or better)
- 32 GB RAM or more
- A RAID 10 storage array with between four and eight 300 GB hard disks

Microsoft® SQL Server Running on Windows Server® 2003 or Windows Server® 2008 (64bit)

Note: Microsoft® SQL Server 2005 is running on Windows Server® 2003 32bit operating system. Microsoft® SQL Server 2008 is 64bit version running on Windows Server® 2008 64bit operating system. And for the large Asset Manager Configuration or above, 64bit database on 64bit operating system are recommended.

The following hardware configurations are recommended for SQL Server database servers used in the small, medium, and large Asset Manager implementations:

Small Asset Manager configuration

- HP ProLiant DL180 G6 with one Quad-Core Intel® Xeon® 5520 processor (2.26 GHz, 8 MB L3 cache)
- 8 GB RAM

- A RAID 10 storage array that includes four 146GB or larger hard disks or a RAID 5 with at least 8 physical disks, or a SAN disk Array

Medium Asset Manager configuration

- HP ProLiant DL180 G6 or DL 380 G6 with two Quad-Core Intel® Xeon® E5540 processor (2.53 GHz, 8 MB L3 cache)
- 12 GB RAM or more
- A RAID 10 storage array that includes between six and eight 146 GB hard disks, or Storage Area Network (SAN) storage with 800 GB free space

Large Asset Manager configuration

- HP ProLiant DL580 G5 with 4 six-Core Intel® Xeon® 7460M processor (2.67 GHz, 16 MB L3 cache)
- 32 GB RAM or more
- A RAID 10 storage array with eight 300 GB hard disks, or SAN storage with 500 GB free space

Recommended hardware for the Automated Process Manager (amsrv)

The following hardware configurations are recommended for the application servers that can be used in all the Asset Manager implementations described in this document, for small, medium, and large user environments.

The Asset Manager Automated Process Manager (amsrv) can be set up on the same machine as the RDBMS, Web server or Connect-It, using Pentium and Xeon processors (and compatible CPUs). UNIX versions are supported for amsrv too.

In any case, HP Management Software recommends that you use a dedicated server machine, or a machine shared with HP Connect-It. The sizing below is for a server machine dedicated to amsrv.

Choose one of the following server machines (or better), which are available at www.hp.com:

• HP ProLiant DL120 G6 with one Quad-Core Intel® Xeon® X3430 processor (2.40 GHz, 8 MB L3 cache)

• HP ProLiant BL280c G6 blade server with one Dual-Core Intel® Xeon® E5502 processor (1.86 GHz, 4 MB L3 cache)

Make sure to include the following as well:

- Either the Windows XP, Vista or Windows Server 2003 x32 operating system
- At least 2 GB RAM
- 4 GB of free disk space

Sharing Asset Manager Automated Process Manager with Connect-It

- If you plan to use Connect-It with several scenarios consider an HP ProLiant DL180 G6 with one Quad-Core Intel® Xeon® 5520 processor (2.26 GHz, 8 MB L3 cache) and 8 GB RAM
- If you plan to use Connect-It intensively with many scenarios running in parallel then consider an HP ProLiant DL180 G6 or DL 380 G6 with two Quad-Core Intel® Xeon® E5540 processor (2.53 GHz, 8 MB L3 cache) and 16 GB RAM.

Recommended hardware for the Asset Manager Web server

The following hardware configurations are recommended for the Web application servers used in the Entry-level, Small, Medium, Superior, and Large Asset Manager Web instances, which are defined in the section *Web environment*.

In a production environment WebTier and WebService servers should each run on a dedicated instance of the web server (Apache® Tomcat®, IBM® WebSphere® or BEA® WebLogic®). These instances of the web servers can be run simultaneously on the same physical server or on distinct servers. In case separated servers are used, they should be linked by a High-speed low latency network (typically WebService and WebTier servers should be connected physically on the same hub/switch on a Giga-bit type LAN). Most of the listed configurations below are designed to have the WebTier and WebService instances on the same server. It is strongly recommended to use 64bit operating system for small web environment configuration and above (it will improve performance). 32bit environment is only suggested for entry level configuration.

Entry level Asset Manager Web instance configuration

- HP ProLiant DL180 G6 or DL 380 G6 with one Quad-Core Intel® Xeon® E5540 processor (2.53 GHz, 8 MB L3 cache)
- 6 GB RAM
- 10 GB free disk space
- 1 Web Tier instance
- 1 Web Service instance
  x64 Windows OS

Small Asset Manager Web instance configuration

- HP ProLiant DL180 G6 or DL 380 G6 with two Quad-Core Intel® Xeon® E5540 processor (2.53 GHz, 8 MB L3 cache)
- 8 GB RAM
- 10 GB free disk space
- 1 Web Tier instance
- 1 Web Service instance
- x64 Windows OS

Medium Asset Manager Web instance configuration

- HP ProLiant DL580 G5 with two six-Core Intel® Xeon® E7450 processor (2.40 GHz,12 MB L3 cache)
- 16 GB RAM
- 15 GB free disk space
- 1 Web Tier instance
- 1 Web Service instance
- x64 Windows OS

An alternative to the single Web server architecture is to use two separated Web servers, each as described in the section *Small Asset Manager Web instance configuration*.

Superior Asset Manager Web instance, single server configuration

- HP ProLiant DL580 G4 series with three six-Core Intel® Xeon® Processor X7450M (2.40 GHz, 12 MB L3 cache)
- 24 GB RAM
- 20 GB free disk space
- 1 Web Service instance
- x64 Windows OS

Superior Asset Manager Web instance, two server configuration

For this configuration, you will need two servers that fit this description:

- HP ProLiant DL180 G6 or DL 380 G6 with two Quad-Core Intel® Xeon® E5540 processor (2.53 GHz, 8 MB L3 cache)
- 12 GB RAM
- 20 GB free disk space
- 1 Web Tier instance per server
- 1 Web Service instance
- x64 Windows OS

Large Asset Manager Web instance configuration

For this configuration, you will need two servers that fit this description:

- HP ProLiant DL580 G4 series with three six-Core Intel® Xeon® Processor X7460M (2.67 GHz, 16 MB L3 cache)
- 32 GB RAM
- 20 GB free disk space
- 1 Web Service instance
- x64 Windows OS

For more information

Please visit the HP Software support Web site at:

http://www.hp.com/managementsoftware/support

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valuable support customer, you can benefit by being able to:

- Search for knowledge documents of interest
- Submit and track progress on support cases
- Submit enhancement requests online
- Download software patches
- Manage a support contract
- Look up HP support contacts
- Review information about available services
- Enter discussions with other software customers
- Research and register for software training

Note: Most of the support areas require that you register as an HP Passport user and sign in. Many also require an active support contract.

To find more information about support access levels, go to the following URL:

http://www.hp.com/managementsoftware/access_level

To register for an HP Passport ID, go to the following URL:

http://www.managementsoftware.hp.com/passport-registration.html

Limited responsibility clause

Asset Manager is integrated with several third-party applications. Examples: Database engines, Web servers, single sign-on software, load-balancing and clustering hardware and software solutions, reporting software such as Crystal Reports, etc.

Support for these applications is limited to their interface with Asset Manager. Support does not cover installation problems, setup and customization problems or malfunctioning of the third-party application.

White papers contain examples of implementations that may work in your environment with or without customization. There is no guarantee that this will be the case. It could also be that some of the solutions covered by white papers appear as standard features in a future release of the software. When this is the case, there is no guarantee that you will be able to upgrade the solution you implemented based on the white paper to the equivalent standard feature.