A SERVER FOR TODAY AND TOMORROW

The HP ML110 G7 ProLiant Server can start small yet deliver enterprise-class capabilities

AS COMPANIES EMERGE from a period of restricted IT budgets demanded by the recent economic downturn, many have decided to make long-overdue investments in personnel and equipment. For some organizations, this means taking stock of their server infrastructure with an eye toward meeting present needs and gearing up for future growth.

This is certainly great news, but it also challenges managers to make the best possible investment decisions with still-limited funds. In some cases, this involves making a first-time server purchase. In other cases, it means upgrading or expanding what's already in place.

As corporate purse strings gradually loosen, small companies will add staff, and with that, increase data storage needs. Medium-sized companies will branch out, open new offices, and need a new or improved IT infrastructure. And it's likely that merger and acquisition activity will also increase, keeping IT managers busy sorting out disparate systems.

Whichever situation you find yourself in, you need to base your purchasing decisions on two sets of criteria: current staff size and workload requirements, and what these demands will look like in the future.

WHEN A SERVER IS NEEDED

For the small organization that has never purchased a server, it's inevitable that at some point employees will need to go beyond using separate client computers. They will need to access common files and work collaboratively. A server provides centralized file storage and access, the ability to back-up work, and security. The best bet would be a server that is affordable but capable of handling the task at hand, has easy setup and operation, features automated backups, and offers reliable file access and sharing. In short: affordability, reliability and simplicity.

A medium-sized organization has greater data storage and processing needs. A large-scale server, or set of servers, may be required to run central applications. But the same company may have a number of smaller branch offices or facilities that don't have the same needs.

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An example would be a retail chain with a central office, and a growing number of individual storefronts. In addition to centralized data, each store may also maintain local data such as inventory and price lists. A perfect solution in this scenario would be separate local servers that complement a central server, located at each remote location, that are reliable and offer the right performance at the right acquisition cost.

THE HP PROLIANT ML110 G7 SERVER AT-A-GLANCE

PROCESSOR AND MEMORY SPECIFICATIONS

Processor family: Intel Xeon E3 series, Intel Core i3, Intel Pentium and Intel Celeron

Maximum number of cores: 4; quad-core, dual-core

Processors supported: E3-1280, 1270, 1240, 1230, 1220; i3-2120, 2100; G850, G840, G620, G530

Maximum processor speed: 3.50 GHz

Memory type: PC3-10600e unbuffered DDR3 ECC up to 1333 MHz

Memory slots: 4 DIMM slots

Standard memory: 2 GB or 4 GB, depending on the model

Maximum memory: 16 GB

STORAGE SPECIFICATIONS

Storage type: Non-hot-plug 3.5 in. SAS and 3.5 in. SATA

Drives supported: 4 LFF HDD NHP and HP SAS/SATA; 8 SFF

Maximum internal storage: 8 TB

Maximum internal drives: 4

Removable media bays: 2

Expansion slots: 4

Storage controller: HP Embedded Smart Array B110i SATA RAID Controller (RAID 0/1/10)

OPERATING SYSTEM SPECIFICATIONS

Linux: RHEL 5 & 6; SLES 10 & 11

Embedded OS: OEL 6; latest versions of each of the following: CentOS, Ubuntu, openSUSE, Asianux, Debian, Fedora

DEPLOYMENT

Form factor: Tower with rack-mount options kit

Rack height: 4U

System fans: Standard

Power supply: Standard 350 W non hot-plug, non-RPS; RPS 460 W

Graphics card: 64 MB; NVIDIA Quadro 600 & FX 380 LP

Port: 10 USB 2.0

Networking: 2 Intel 82574 Gigabit NIC

Remote management: HP Integrated Lights Out 3 & SmartStart CD

Warranty: 1 year parts, labor and onsite; except Brazil, where parts are warranted for 3 years

Obviously, buying a server is not a one size-fits-all proposition. To select the server that will best meet your needs, start by asking where your company is heading, not just where is it now. For example, perhaps you're a small company now. But you expect a lot of activity in your market. Consider:

- What will your business look like in two to three years?
- Will you still be a small company?
- If not, how much larger will you be?
- How many employees do you expect to add?
- Will you be likely to have more than one company location?
- What type of work does your organization do, and how does that translate into the workload you place on a server?

Answering these questions will give you a better idea what to look for.

A SERVER THAT'S BASIC, BUT ADVANCED

For a small company or midsized company with branch offices, an entry-level server is probably the best option. A first server should offer speed, simplicity and efficiency, along with compact size and a low price tag.

One of the most popular server lines on the market is the HP ProLiant series. Recently, HP added the ProLiant ML110 G7 server built with Intel® processors to this line. If your organization fits the profiles outlined above, this may be just the server for you, as this product supports enterprise-level features and solutions designed for the small and medium-sized businesses.

The ML110 G7 server is no larger than many desktop computer towers. This small package packs all the computational power that most small companies are likely to need right away.

The ML110 G7 is intended for a company with up to 25 employees, making it a good investment for a new company just starting out, or a small company that's starting to grow. And the ML110 G7 can be remotely managed, again making it perfect for a remote branch location.

Powered by the Intel Xeon® processor, the ML110 G7 also offers a choice of the Intel Core™ i3, Intel

Customer Problem	What they do today?	How the ML110 G7 solves the problem and adds business value	Why now with HP? Differentiators
Budget constraint	Use desktop as a server	↗ Benefits of a server at desktop price ↗ Flexible design for low cost expansion ↗ iLO3 remote management drives down the cost of managing the servers by reducing visits while decreasing the need for multiple remote management solutions ↗ Reduces overall operational costs with system and power supply efficiency	↗ Common options across the portfolio create costs savings for businesses looking to deploy a number of server-based solutions
Reliability/ Data Protection	Data stored on desktops	↗ ECC memory protects business from data loss and unplanned system downtime ↗ Smart Array options provide businesses RAID mirroring and striping capability to protect critical data ↗ Decrease downtime with iLO3 remote management ↗ Redundant PSU for more security and essential productivity backup	↗ Extensive selection of storage, controllers, and server options ↗ Proven ProLiant reliability
Limited or no IT resources	Dependent on support provided by local players	↗ HP Smart Start CD simplifies the set up process	↗ Worldwide network of HP trained service professionals ↗ Comprehensive service support options

Pentium® or Intel Celeron® processors. The ML110 G7 is a remarkably powerful, yet compact machine and is also extremely energy efficient. The Intel Xeon Processor E3-1200 family includes a feature known as Enhanced Intel SpeedStep Technology, which enables the processor to adjust its power consumption to a much finer degree than a desktop processor. This processor can even adjust the speed and power consumption of each of four processor cores independently.

Intel Xeon processors provide other advantages for the ML110 G7 server, including Intel Virtualization Technology. Virtualization enables you to run several virtual machines on the same physical computer, reducing hardware needs and costs. It also enables you to run more than one operating system on the same computer, or to run software that the computer would otherwise not be able to run, such as Linux software on a Windows-based computer.

FITTING A SERVER TO THE TASK

But technology specs alone won't help you decide which server is best for you. Managers need to anticipate the workload impact of expected growth. In other words, how will the server be used, and how much computational power and data storage will that work require? What factors fuel your company's growth, and how do they impact your computing needs? That is what places the ultimate demand on your server.

Ask the following questions: Does your company do a lot of work with video content? Does it require a lot of photo file storage? Is the majority of your stored work text-based? Do you manage centralized email or large databases?

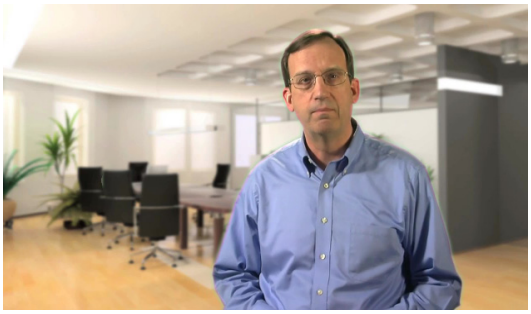
Again, the ML110 G7 stands out as an ideal choice for many small businesses. Thanks to Intel technology, the ML110 G7 offers state-of-the-art data processing that will handle all of your data processing needs quickly and reliability. And the ML110 G7 is expandable, enabling it to grow with your company.

When used with a branch office or remote site, the ML110 G7 is ideal for running file and print tasks, Web messaging, small applications or databases, and shared Internet access and LAN infrastructure. And as good as the ProLiant server series already was, HP improved processor and memory performance

with the ML110 G7. Enhancements to power usage and remote access also help keep operational costs low. In addition, HP has enhanced the security and reliability features of the ML110 G7.

Here are a few more characteristics of the ML110 G7 server to consider:

- **EXPANDABILITY:** The ML110 G7 can grow with your organization, aided by two network interface controllers (NICs), which connect your computers to the network. You can add new users to the network as your staff expands, with a recommended limit of 25 employees.
- **RELIABILITY:** Redundant power supply (RPS) protects against data loss. In the event that one power supply should fail, the RPS in the ML110 G7 will immediately take over and power the workload. In addition, the Intel Xeon processor provides automatic error detection and correction, dynamic reassignment of workloads in virtualized environments, and interconnect error detection and recovery.
- **MANAGEABILITY:** The ML110 G7 offers HP's Integrated Lights Out (iLO) Advanced technology, featured on all ProLiant servers. With iLO, you can manage the server remotely. Just enter your Advanced license key to gain precise remote control of your ProLiant server from anywhere in the world. HP iLO Advanced also enables simplified server setup, power and thermal optimization, and embedded performance health monitoring.



VIDEO: Senior Managing Editor Stan Gibson describes how the HP ProLiant ML110 G7 server supports enterprise level features/solutions designed for small and medium businesses.

- **EFFICIENCY:** The ML110 G7 features double-data rate (DDR3) memory, providing higher-rate data transfer, with lower energy consumption. In fact, DDR3 can transfer data at twice the rate of DDR2 server technology. At the same time, the DDR3 technology runs on 30 percent less power.
- **ADAPTABILITY:** Hot plug, small form-factor (SFF) and RPS support enable you to embrace growth—and keep costs low as well.

All in all, the ML110 G7 offers small and medium-sized businesses a fast, reliable, secure and easy-to-use server that will handle the organization's computing needs, flexibility to grow with those needs, and can help the organization find efficiencies to become more successful. ■