

Unisys ClearPath Plus Libra Model 590 Server.

The ClearPath Plus Libra Model 590 server is the most versatile and powerful MCP-based system ever offered. It introduces two major innovations—a new “pay-for-use” business model and industry-leading metering technology. Together, the dynamic combination of metering and pay-for-use provide the cornerstone for establishing an in-house “private utility,” secure within your own walls and available today. The Libra Model 590 system is a Unisys Modern Mainframe that delivers all of the traditional mainframe attributes along with unparalleled versatility—letting you realize the rewards of utility computing without the risk.

THE UNISYS CLEARPATH PLUS LIBRA FAMILY OF SERVERS.



The ClearPath Plus Libra Model 590 mainframes are mid-range to high-end servers, and are the newest and most versatile members in the ClearPath Plus Libra Family of Servers. The Libra Model 590 server delivers state-of-the-art metering technology that measures the processing power delivered by the system. The benefits of metering technology are realized by teaming it with a pay-for-use business model, which means that you pay only for the exact amount of processing power you use, as you use it. Metering and pay-for-use functionality leverages the extraordinary power and capacity of the high-performance Unisys CMOS processor technology, highly advanced IO subsystem and Unisys Cellular MultiProcessing (CMP) architecture that underpin the Libra Model 590 server.

Product highlights.

- ▶ Metering technology embedded in the MCP
- ▶ New Unisys Operating Environment (UOE)
- ▶ Module-based, next generation ClearPath architecture
- ▶ Independent, self-contained “plug and play” modules
- ▶ High-performance Unisys MCP CMOS processors
- ▶ High-performance IO subsystem
- ▶ Up to 8 MCP CMOS-based native partitions
- ▶ 16-processor-image capability
- ▶ Self-adjusting processing power
- ▶ Reserve MCP processors
- ▶ 48 GB of memory
- ▶ New-generation Intel® processors

- > Consulting.
- > Systems Integration.
- > Outsourcing.
- > Infrastructure.
- > Server Technology.

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Imagine it • Done •

Libra Model 590 servers feature a modular design that supports a high level of infrastructure flexibility for the agile enterprise, including a choice of metered and non-metered MCP partitions, non-metered Virtual Machine for ClearPath MCP (MCPvm) or open partitions, hardware technologies, applications, growth options and integration software. The overall design maximizes the return on your current IT investment and gives you the agility to quickly and effectively respond to new challenges and business opportunities.

**On-demand agility,
on-demand control.**

The Libra Model 590 server equips you with technology and processing power that is business transforming. Extra resources are “always on” and available at your disposal instantaneously. With metering, you can meet seasonal peaks, be prepared for growth and respond to the expected and the unexpected—seamlessly and cost efficiently. What’s more, Unisys brings another dimension to this versatile environment—control. Through our “governor” feature, you can dynamically control the amount of resources available to be metered. No other solution in the market today gives you this level of control over your operating and financial environment. Unisys revolutionized the mainframe by combining a business-critical environment with open system capabilities. Now we’re revolutionizing the on-demand market by combining the versatility of metering technology with control functionality.

The Libra Model 590 server delivers flexibility, control and mission-critical reliability with these new features:

Metered system performance.

- ▶ On-demand processing power. The Libra Model 590 server is offered in “base and ceiling performance pairs.” When you license the base configuration, you receive a system with the ceiling level of performance activated and available for use. Ceiling-level performance is up to 10 times the amount of base processing power available. Metering technology embedded in the ClearPath Plus MCP operating environment measures your usage, which is reported back to Unisys via e-mail on a monthly basis. (Real-time meter readings are available through a system command for ease of system management.) If you have used processing power higher than the base level you licensed up front, you are billed for it. If you have not done so, no charges are incurred. This versatile metered, pay-for-use feature lowers your up-front capital investment and allows you to treat your monthly metering invoices as operating expenses, resulting in a better match of revenues and expenses. Since we offer a wide range of base and ceiling pairs, you gain a better operational and financial fit for your needs than competitive systems offer.
- ▶ Dynamically adjust performance. Control of your metered system is optimized through the governor, which enables you to dynamically adjust the ceiling level of performance available. You can dial it down to the base level to ensure that no additional metering costs are incurred, raise it up to the ceiling to use the most processing power possible with your system, or set it to values in between. You can adjust the governor at any time using a system command.

Using scripts, you can set a series of timed governor settings to match available processing power with your unique usage pattern.

- ▶ Dynamically add workload. The high ceiling-level of processing power available means that you can add and instantaneously accommodate more workload—without sacrificing service levels.
- ▶ Enhanced disaster recovery capabilities. You can purchase a disaster recovery key that temporarily raises your base level of performance so that in a disaster recovery situation, all of your processing power is accommodated in the base performance and no metered usage is incurred.

Reliable, resilient, flexible.

- ▶ Self-adjusting processing power. The ability of the system to adjust its own performance is realized through *automatic regulation of processing power*, a new capability on the Libra Model 590 server. With this advancement, should a processor go off line (intentionally or not), the processing level of the remaining in-service processors is escalated to recapture as much of the processing power as possible that was being delivered by the off-line processor.
- ▶ New Unisys Operating Environment (UOE). For production workloads, the traditional Integrated Operating Environment (IOE) package is replaced on the Libra Model 590 server with the newest version of our operating environment—the UOE. The UOE includes many software products that used to be licensed separately, enhancing your operating environment with more software functionality than ever before.
- ▶ Optimized resiliency. You can shift full system performance into a single domain on Libra 590 Model servers that have dual-domain configurations.

- ▶ Optimized flexibility. You can combine both metered and non-metered partitions in a single Libra Model 590 system.
- ▶ Improved growth path through horizontal and vertical scalability. The Libra Model 590 server supports horizontal growth through the addition of new partitions and vertical growth through base/ceiling upgrades. With this flexibility, you can manage and implement a growth strategy that best fits your operating environment.
- ▶ Greater application choice through multiple operating system environments. The Libra Model 590 platform supports up to eight (8) independent partitions concurrently running Unisys MCP in metered and non-metered partitions and the following operating systems in other non-metered partitions: Virtual Machine for ClearPath MCP (MCPvm), Microsoft® Windows® 2000 Advanced Server, Windows® 2000 Datacenter Server and/or Windows® Server 2003, Enterprise and Datacenter Editions—making it possible to choose the environments that best meet your specific processing requirements. You can dedicate these partitions to production, development, testing, disaster recovery, CRM and ERP solutions, the Enterprise Application Environment, and many others.
- ▶ Consolidate and save. The wide choice of concurrently running operating systems enables you to consolidate multiple servers on a single platform: NX, A Series and Windows environments. Consolidation gives you centralized control of multiple servers with potential savings on both your system and operational costs. You can consolidate production and development systems on one platform, while taking advantage of specially priced development workloads. This not only reduces the cost of your overall system, but also enables you to operate the environment more efficiently.

Independent and self-contained modules allow you to easily add and remove a module without disturbing other workloads (modules). For example, you can add a new workload without disturbing your production workload.

- ▶ **Align IT with your business requirements.** Enterprise Application Environment (EAE) is a rapid application development and deployment environment that enables you to generate new applications from business rules and definitions. With EAE you are equipped to react quickly to opportunities—even beat your competition to market, positioning yourself for competitive advantage in your market space.
- ▶ **Dedicate processors with greater flexibility.** You can run your ClearPath MCP applications on both the Unisys MCP CMOS processors and Intel processors with your Libra Model 590 server. You do not have to modify or recompile your MCP applications in order to run them on either type of processor. The MCPvm operating system software does everything for you simply by isolating your applications from the different processor architectures.
- ▶ **A single point of access to your Windows and MCP partitions.** Centralized, Web-based, GUI access to all of its management tools. And an “at-a-glance” view of your Libra Model 590 system's overall health. That's what you get using Unisys Server Sentinel for ClearPath Plus servers—and more. Server Sentinel also provides self-healing capabilities for the Windows based partitions of your ClearPath Plus MCP servers and integrates with Unisys Application Sentinel and NetIQ AppManager software for application management. For the enterprise management layer of your data center, Server Sentinel provides an integration path to enterprise management systems such as Tivoli NetView, HP OpenView, BMC patrol and

CA Unicenter for managing your networked hardware and software. Server Sentinel includes functionality previously provided by the System Management Center product for ClearPath MCP systems.

System attributes.

The ClearPath Plus Libra Model 590 server offers exceptional business value based on these improved mainframe hardware and software attributes:

- ▶ Metering technology embedded in the MCP
- ▶ New Unisys Operating Environment (UOE)
- ▶ High-volume, mission-critical transaction processing
- ▶ Unparalleled scalability in Symmetrical MultiProcessing (SMP) mode
- ▶ Unisys Server Sentinel for simplified systems management
- ▶ Self-adjusting processing power
- ▶ High-performance interoperability
- ▶ Multiple operating system environments
- ▶ Choice of hardware and software for consolidation options
- ▶ Powerful middleware for application, Internet, message and data integration in heterogeneous environments using popular industry standards
- ▶ Application access via Web, PDA, mobile, etc.
- ▶ Extensive MCP software portfolio with true mainframe attributes
- ▶ A suite of mainframe application development tools
- ▶ Low-cost development environments

Unisys ClearPath Plus Libra

Model 590 Server:

System specifications

Maximum processors.

- ▶ Up to eight (8) modules total
- ▶ Up to 32 Unisys MCP CMOS processors configured in 4-processor modules
 - MCP images:
 - ▶ Single module: four (4) processors
 - ▶ Dual module: eight (8) processors
 - ▶ Up to eight (8) MCP CMOS images
 - ▶ Up to 56 Intel processors configured in 4- or 8-processor modules
 - Open server images:
 - ▶ Up to 16 Intel® processors per image in any combination of 4, 8 or 16 processors for any of these supported open server operating environments: Virtual Machine for ClearPath MCP (MCPvm), Microsoft® Windows® 2000 Advanced Server and Datacenter Server and Microsoft® Windows® Server 2003, Enterprise and Datacenter Editions
 - ▶ Up to seven (7) Intel® based images

Processor types.

- ▶ Unisys MCP CMOS processors
- ▶ Intel® Xeon™ processor MP
 - 2.0 GHz with 1 MB on-die cache OR
 - 2.8 GHz with 2 MB on-die cache
- ▶ Next generation of Intel® processor technology

Operating environments supported.

- ▶ ClearPath MCP and any of the following:
- ▶ Virtual Machine for ClearPath MCP (MCPvm)
- ▶ Microsoft® Windows® 2000 Advanced Server
- ▶ Microsoft® Windows® 2000 Datacenter Server
- ▶ Microsoft® Windows® Server 2003, Enterprise Edition
- ▶ Microsoft® Windows® Server 2003, Datacenter Edition

Performance.

- ▶ 20 to 2,000 MIPS (486 to 48,600 RPMs) per MCP native partition

Memory.

- ▶ 3 GB of MCP memory minimum per module (requires 4 GB physical memory)
- ▶ 24 GB of MCP memory maximum per partition (requires 32 GB physical memory)
- ▶ 48 GB of MCP memory maximum per system (requires 64 GB physical memory)

Power domains.

- ▶ Minimum: one (1) per module. Maximum: four (4) per cabinet

Partitions.

- ▶ A maximum of eight (8) partitions (expansion cabinet required for more than four (4) partitions)
- ▶ Up to eight (8) MCP CMOS partitions
- ▶ A single MCP partition with either four (4) or eight (8) MCP processors
- ▶ Up to seven (7) Windows® and/or MCPvm partitions
- ▶ Up to seven (7) partitions with any combination of Libra Model 520, Libra Model 580 and open modules

IO slots.

- ▶ Nine (9) PCI slots per module, including eight (8) 32-bit 66 MHz and one (1) 32-bit 33 MHz, all with 64-bit data addressing capabilities

Architecture.

- ▶ Unisys module-based Cellular MultiProcessing (CMP)
- Four-way, non-blocking, crossbar inter-connect
- SMP-based programming model (applications run without change)

Environmental.

The Libra Model 590 system is designed for a Class B, commercial open office environment

- ▶ Cooling.
 - Seven fans per module (N+1)
- ▶ Power (minimum system configuration)
 - 790 Watts per module
- ▶ Power domains.
 - Single Phase, 100-120/200-240 VAC, 50/60 Hz, 6 Amps per line cord
- ▶ Thermal.
 - 300 cfm of air per module

Access area.

- ▶ Front and rear, 42-inch full-width

Weight and dimensions.

- ▶ See Table 1.

Noise level.

- ▶ 6.6 Bels re: 1pW

Shock.

- ▶ Operating: 3.0g, 15ms
- ▶ Non-operating: 8.0g, 15ms

Vibration.

- ▶ Operating: 0.01 in. 5-22Hz; 0.25 g 22-300Hz
- ▶ Non-operating: 0.10 in. 5-10Hz; 0.5g 10-70Hz; 0.002 in. 70-99Hz; 1.0g 99-300Hz

Temperature.

- ▶ Operating: 13°C to 35°C (55°F to 95°F)
- ▶ Shipping: -40°C to 65°C (-40°F to 149°F)

Relative humidity.

- ▶ Operating: 10-80% (non-condensing)
- ▶ Non-operating: 95% maximum (non-condensing)

Altitude.

- ▶ Operating: 0-8,000 ft (0 - 2,436 m)
- ▶ Shipping: 0-14000 ft (0-4263 m)

Unisys ClearPath Plus Libra Model 590 Servers:

Table 1 Weights and Dimensions

Style Number	Description	Weight Pounds (kilograms)	Width* Inches (meters)	Depth* Inches (meters)	Height* Inches (meters)
LM590-140	Single module, single 1 x 4 native MCP partition; 4 GB memory	497 (226)	22 (0.6)	47 (1.2)	69 (1.8)
LM590-242	Redundant dual module, single 1 x 8 native MCP partition; 8 GB memory	790 (359)	22 (0.6)	47 (1.2)	69 (1.8)

* Outside dimension

For more information, please contact your Unisys representative.

Or call Unisys today at:

1-800-874-8647, ext. 776 (U.S and Canada)
00-1-585-742-6780, ext. 776 (Other countries)

You can also contact us by email at:

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For the most up-to-date ClearPath Plus Libra Model 590 server information, visit our website at:

www.unisys.com/cp/libra

You'll find even more details and documents through our community of ClearPath users at:

www.unisys.com/cp/community

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