

Unisys ClearPath Plus Libra Model 585 Server

The ClearPath Plus Libra Model 585 server is the most powerful and most secure MCP based system ever built. This Unisys Modern Mainframe delivers all of the traditional mainframe attributes—plus valuable new business characteristics such as diverse computing workloads, flexible buying models, popular software standards, powerful integration middleware, secure Java workloads, autonomic systems management and excellent productivity economics. Libra Model 585 servers are taking MCP mainframes even further into the mainstream by accommodating industry standard tools, application offerings, skill sets and economics.

THE UNISYS CLEARPATH PLUS
LIBRA FAMILY OF SERVERS.



The ClearPath Plus Libra Model 585 mainframe is the newest and most powerful member of the ClearPath Plus Libra Family of Servers, the successor to the highly acclaimed ClearPath Plus Libra Model 580 Series. The Libra Model 585 Series servers offer an ideal infrastructure that delivers extraordinary power and capacity with their high-performance Unisys CMOS processor technology and highly advanced IO subsystem. These high-end servers offer the latest in state-of-the-art hardware and software technologies.

Libra Model 585 servers feature a modular design that supports a high level of infrastructure flexibility for the agile enterprise, including a choice of hardware technologies, operating

environments and applications, growth options, integration software and flexible buying models. 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.

Product highlights.

- ▶ Module-based ClearPath architecture
- ▶ Independent, self-contained modules
- ▶ High-performance Unisys MCP CMOS processors
- ▶ 20% improved high-performance IO subsystem
- ▶ Up to 32 MCP CMOS processor-based native partitions
- ▶ 16-processor-image capability

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

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Imagine it • Done •

- ▶ New Performance Redistribution
- ▶ Secure Java Workloads
- ▶ Secure Java Modules
- ▶ Policy-based Resource Management infrastructure
- ▶ Capacity on Demand
- ▶ Ready IO
- ▶ Ready Networking
- ▶ Ready Memory
- ▶ Reserve MCP processors, memory and IO
- ▶ Cryptographic Co-processor

New levels of flexibility.

The Libra Model 585 servers give you an operating environment that is versatile, powerful and compatible with your existing MCP-based solutions. Unisys keeps on revolutionizing the mainframe and taking it further into the mainstream with access to Java applications and developers, application development tools to rapidly accommodate marketplace changes and flexible buying models that deliver results you can measure in terms of real economic impact.

The Libra Model 585 servers are the world's most versatile servers:

- ▶ **More opportunities for growth.** The scalable 16-way partition/image capability provides major improvements for a single system image with almost twice the performance, twice the IO connectivity and capacity and twice the memory previously available. The result is an improved growth path through both horizontal and vertical scalability.
- ▶ **Multiple-operating-system choices.** The Libra Model 585 platform supports up to 32 independent partitions concurrently running multiple operating environments: Unisys MCP, Virtual Machine for ClearPath MCP (MCPvm), Microsoft® Windows® Server 2003, Enterprise Edition and Windows® Server 2003, Datacenter Edition, Novell SUSE Linux Enterprise Server 9 (SLES 9) and Red Hat Enterprise Linux 4

(RHEL 4) operating systems. This makes it possible to choose the application environments that best meet both your specific business needs and processing requirements. You can dedicate Libra partitions to production, development, testing, disaster recovery, CRM and ERP solutions, the Enterprise Application Environment and many others.

- ▶ **More consolidation options.** The wide choice of concurrently running operating systems enables you to consolidate multiple servers on a single platform: NX Series, A Series, Windows and Linux environments. Consolidation gives you centralized control of multiple servers with potential savings in both your system and operational costs.
- ▶ **Capacity on Demand choices.** Capacity on Demand options help you better manage your changing capacity requirements. Designed to revolutionize the way you buy ClearPath information processing power, Capacity on Demand delivers new agility for managing your dynamically changing workloads, including unpredictable spikes in demand and emergency/disaster recovery situations. Different buying options, licensed on an annual basis, help you achieve the most flexibility in your server operations. The ability to enable reserve capacity is key to supporting dedicated or shared disaster recovery systems with remote secondary systems typically used for development. Three Capacity on Demand options are available:
 - For Disaster Recovery, you pay only for incremental capacity for a period of 30 days—an option that enables you to handle major unplanned operational disruptions.
 - The 12-day Emergency Recovery option

helps you address less serious outages.

- The Temporary Workload option allows you to scale processing capacity up and down. The capacity is provided in daily increments of 5 to 365 days to meet any unplanned or planned peak load demands.

- ▶ **Distribute processing performance.** The Libra 585 server introduces the new Performance Redistribution for Libra servers. Now a single performance key lets you distribute processing performance across multiple partitions within your system at any time. With this new design there are no predefined configurations; you can split the performance between partitions according to your needs with one percent granularity. The new Performance Redistribution also lets you easily distribute performance over any or all processors within a partition, accommodating applications written for single- and multi-processor configurations. In the unlikely event of a processor failure, the system automatically adjusts the remaining processors to deliver the licensed performance. Performance continuity is maintained in a dual-module environment, where you can use the maximum contracted system performance in one module when the other module is unavailable for processing.
- ▶ **Reserve resources when you need them.** The Libra Model 585 server includes a Policy-based Resource Management infrastructure containing reserve processors, IO, networking and memory capacity. While Capacity on Demand and temporary processing capacity have been available on Libra servers for years, the Ready IO, Ready Networking and Ready Memory are new. One of the most important benefits of these new features is the ability to switch to the reserve component in the case of failure of the active IO or memory component—without extra cost. In case of additional demand, you can easily enable reserve IO, networking and

memory capacity by purchasing licensing keys.

- ▶ **Secure Java Workloads.** The Libra Model 585 server makes available the ClearPath Secure Java Technology, which provides an environment with unmatched security and availability, designed especially for Java applications. This rich, robust and secure environment is ideal for new Java applications, composite applications and migration from other vendors' systems. Also available is the JBoss Application Server, the industry's leading Open Source J2EE application server. Secure Java Workloads can optionally be configured with ClearPath Secure Workload for the Java Platform or ClearPath Secure Module for the Java Platform for an exceptionally secure Java environment. These options enable you to add new Java applications to your IT infrastructure with minimal impact on your existing workloads. Java applications can coexist in a partition with other applications or they can run in their own partitions. You can dedicate a set of processors in an MCP module or entire MCP modules to Java workloads.
- ▶ **Economically priced workloads.** Many ClearPath clients use general-purpose production systems and independent development systems. One attraction of the Libra Model 585 system is the ability to consolidate your production and development systems on one platform and take advantage of special value-priced development workloads. This not only reduces the cost of your overall system, but also enables you to operate your environment more efficiently.
- ▶ **"Plug-and-play" modules.** Independent and self-contained modules allow you to easily add and remove a module without disturbing workloads running on other modules. For example, you can add an entirely new workload and module without disturbing your live production workload.

- ▶ **Mix and match modules.** The Libra Model 585 server allows you to mix and match different Libra modules within a single server complex. This unique capability lets you custom build your own system according to your specific business requirements. You can mix high-end MCP CMOS based modules, mid-range MCP modules and Intel modules, different CPU technologies and operating environments—within one server complex. Here are the modules you can combine: Libra Model 595, Libra Model 580, Libra Model 590, Libra Model 520, Libra Model 300, Windows, Linux and Java.
- ▶ **Generate applications quickly.** Align your IT with your business requirements with the Unisys Enterprise Application Environment (EAE), which enables you to quickly generate new applications from business rules and definitions. EAE is a rapid application development and deployment environment that gives you a competitive advantage in that you can react quickly to opportunities and beat your competition to market.
- ▶ **Choice of processors.** You can run your ClearPath MCP applications on both the Unisys MCP CMOS processors and Intel processors in your Libra Model 585 server. You do not have to modify or recompile your MCP applications in order to run them on either type of processor. The Virtual Machine for ClearPath Plus MCP (MCPvm) operating system software does everything for you simply by isolating your applications from the different processor architectures.
- ▶ **Integration automation.** ClearPath ePortal is a modular, enterprise-class, e-business integration automation solution that enables you to easily extend ClearPath MCP applications to reach new partners, channels and markets. ClearPath ePortal is an optimized, application-specific architecture that provides automation at every

point in the solution—from development to deployment. ClearPath ePortal requires no new incremental skills and can radically reduce the cost of creating new business solutions, thus accelerating your time to market and bringing new levels of efficiency to your ClearPath infrastructure. The ClearPath ePortal solution:

- Provides built-in Web and wireless capabilities (HTML and WML)
- Automates the process of modernizing and staging the deployment of MCP applications and system software
- Provides industry-standard interfaces directly from ClearPath software. This capability enables the non ClearPath entities of your organization to gain access to ClearPath applications and system software—without the need to learn or manage any software specific to Unisys.

A complete operating environment.

The ClearPath MCP operating environment for ClearPath Libra 500 Series servers includes all of the software needed to operate the system. The “heart” of the operating environment is the MCP operating system itself, a “kernel” that handles input and output, processes runs, allocates system resources, manages files and data and provides a library of useful subroutines.

The Transaction Server, previously known as COMS, is a transaction manager and application server designed especially for and highly integrated with the ClearPath MCP operating environment. The Transaction Server is extremely versatile; it can process transactions from a variety of clients including Web and mobile devices as well as traditional terminal-oriented devices. It can also participate in distributed “global” transactions and message queuing.

Enterprise Database Server for ClearPath MCP, formerly known as DMSII, is a mature, proven database management system that is highly scalable and reliable. It can be used by applications running in a variety of operating environments including ClearPath MCP, Java, Microsoft Windows, UNIX and Linux.

Unisys and its partners offer a complete portfolio of software for ClearPath MCP servers that includes software for these critical areas:

- ▶ Security
- ▶ Application development tools
- ▶ System tools and utilities
- ▶ Performance monitoring
- ▶ Database, query and reporting tools
- ▶ Communications and networking
- ▶ Middleware
- ▶ Systems management

With Unisys Sentinel you get a single point of access to your Windows and MCP partitions using centralized, Web-based, GUI access to all of its management tools and an "at-a-glance" view of your Libra Model 585 system's overall health. Server Sentinel provides self-healing capabilities for the Microsoft 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 585 server offers exceptional business value based on these improved mainframe hardware and software attributes:

- ▶ High-volume, mission-critical transaction processing
- ▶ The ability to run hundreds of mission-critical workloads and databases under one instance of the MCP operating system
- ▶ Unparalleled scalability in Symmetric MultiProcessing (SMP) mode
- ▶ High-performance interoperability
- ▶ Multiple operating system environments
- ▶ Capacity on Demand options
- ▶ Performance Redistribution
- ▶ Policy-based Resource Management infrastructure
- ▶ Secure Java workloads
- ▶ Secure Java modules
- ▶ Open Source J2EE application server from JBoss
- ▶ Powerful middleware for application, Internet, message and data integration
- ▶ The ability to integrate ClearPath MCP applications and data with external heterogeneous servers, databases and applications using virtually any of the industry's most popular technologies
- ▶ Application access via Web, PDA, mobile, etc.
- ▶ Extensive MCP software portfolio with true mainframe attributes
- ▶ Automated integration of MCP applications with industry-standard connectors such as WEB, WML, XML, etc.
- ▶ A suite of mainframe and industry-standard application development tools
- ▶ Low-cost development environments
- ▶ Unisys Server Sentinel for simplified systems management
- ▶ Choice of hardware and software for consolidation options

Unisys ClearPath Plus Libra Model 585 Server:

System specifications

Maximum processors.

- ▶ A maximum of 32 modules within a system complex
- ▶ Up to four (4) modules per cabinet
 - A MCP module is fully populated with four (4) MCP CMOS processors
 - An Intel® module is fully populated with four (4) or eight (8) Intel® processors
- ▶ Up to 16 Unisys MCP CMOS processors per cabinet; MCP images:
 - Single module: up to four (4) processors
 - Dual module: up to eight (8) processors
 - Three (3) modules: up to 12 processors
 - Four (4) modules: up to 16 processors
 - One (1) image can be from one (1) to 16 processors
 - A module is always fully populated with four (4) MCP CMOS processors
 - Up to four (4) MCP CMOS images per cabinet
- ▶ The overall maximum number of MCP CMOS processors is 128 within a system complex
- ▶ Optionally up to 24 Intel® processors per cabinet; open server images:
 - Up to 24 Intel® processors per image in any combination of 4, 8 or 16 processors for any of the supported open server operating environments: Virtual Machine for ClearPath MCP (MCPvm), Microsoft® Windows® Server 2003, Enterprise and Datacenter Editions, Novell SUSE Linux Enterprise Server 9 (SLES 9), Red Hat Enterprise Linux 4 (RHEL 4)
 - Up to three (3) Intel® based images

Processor types.

- ▶ Unisys MCP CMOS processors
- ▶ Intel® Xeon™ processor MP (EM64T)
 - 3.1 GHz with 1 MB L2 cache
 - 3.66 GHz with 1 MB L2 cache

Operating environments supported.

- ▶ ClearPath MCP AND
- ▶ Virtual Machine for ClearPath MCP (MCPvm)
- ▶ Microsoft® Windows® Server 2003, Enterprise Edition
- ▶ Microsoft® Windows® Server 2003, Datacenter Edition
- ▶ Novell SUSE Linux Enterprise Server 9 (SLES 9)
- ▶ Red Hat Enterprise Linux 4 (RHEL 4)

Performance.

- ▶ 50 to 3,800 MIPS per MCP native partition (1,215 to 92,340 RPMs)
- ▶ 20 to 300 MIPS per MCPvm partition (500 to 7,300 RPMs)

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 cabinet (requires 64 GB physical memory)
- ▶ Reserve memory: the Libra Model 585 module is delivered with 4 GB of active memory and 12 GB of reserve memory

Power domains.

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

Partitions.

- ▶ A maximum of 32 partitions within a system complex
- ▶ Up to four (4) partitions per cabinet
 - Up to four (4) partitions each fully populated with four (4) MCP CMOS processors
 - A single MCP image can be from one (1) to sixteen (16) MCP CMOS processors
 - Optionally up to three (3) Windows, Linux and/or Virtual Machine for ClearPath MCP partitions
 - Optionally up to four (4) Java partitions
 - Optionally up to three (3) partitions with any combination of Libra Model 590/595, Libra Model 580, Libra Model 300, Libra Model 520, Windows, Linux and Java partitions
- ▶ A minimum MCP partition is one (1) module with one (1) active MCP CMOS processor and three (3) processors in reserve
- ▶ A maximum MCP partition is four (4) modules with 16 active MCP CMOS processors

IO slots.

- ▶ Eight (8) 32-bit 66 MHz PCI slots with 64-bit data addressing capabilities per module
- ▶ Reserve IO: Libra 585 systems are delivered with one (1) active and two (2) reserve fibre channel adapters

Architecture.

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

Environmental.

- ▶ Cooling.
 - Seven (7) fans per module (N+1)
- ▶ Power.
 - Two (2) 1200 Watt supplies per module
- ▶ Power domains.
 - Single Phase, /200-240 VAC, 50/60 Hz, 10 Amps per line cord
- ▶ Thermal.
 - 300 cfm of air per module

Access area.

- ▶ Front and rear

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

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 feet (0 - 2,436 meters)
- ▶ Shipping: 0-14000 feet (0-4263 meters)

Unisys ClearPath Plus Libra Model 585 Servers: Table 1 Weights and Dimensions

Style Number	Description	Weight* pounds (kilograms)	Width* inches (meters)	Depth* inches (meters)	Height* inches (meters)
LM585-141	Single module, 4-processor native MCP partition; 4 GB memory **	277 (126)	19 (0.5)	32 (0.8)	11 (0.3)
LM585-142	Single module, 4-processor native MCP partition; 4 GB memory. Upgradeable to a 8-processor configuration	737 (335)	27 (0.7)	43 (1.1)	69 (1.8)
LM585-242	Redundant dual module, single 8-processor native MCP partition; 8 GB memory	870 (395)	27 (0.7)	43 (1.1)	69 (1.8)
LM585-243	Redundant dual module, single 8-processor native MCP partition; 8 GB memory. Upgradeable to 12- and 16-processor configurations	880 (400)	27 (0.7)	43 (1.1)	69 (1.8)
LM585-343	Three (3) modules, single 12-processor native MCP partition; 12 GB memory. Upgradeable to 12- and 16-processor configurations	1,020 (463)	27 (0.7)	43 (1.1)	69 (1.8)
LM585-443	Four (4) redundant modules, 16-processor native MCP partition; 16 GB memory	1,160 (527)	27 (0.7)	43 (1.1)	69 (1.8)

* Outside dimension

** Free-standing configuration for installation in an existing cabinet.

**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)**

**For the most up-to-date ClearPath
Plus Libra Model 580 server
information, visit our website at:
<http://www.unisys.com/cp/libra>**

**You'll find even more details and
documents through our community
of ClearPath users and experts at:
<http://www.unisys.com/cp/community>**

**You can also contact us by email at:
<mailto:cic@unisys.com>**

**For the more information, visit our website at:
<http://www.unisys.com/cp/libra>**

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