



ClearPath Forward® Libra 8691

Product Information Sheet

Premium performance ClearPath® MCP processing

- Highest performance levels of ClearPath MCP application processing and I/O throughput
- Unmatched security delivered through integrated hardware and software design
- Advanced system availability with multiple levels of component redundancy
- Fully compatible with existing MCP applications and data formats
- Flexible pay-for-use licensing

Unisys commits to providing MCP transaction processing systems that keep pace with our clients' expanding core business workloads. The ClearPath Forward Libra 8691 system delivers this commitment by providing significantly improved MCP single thread and single system performance levels. Increases in the I/O subsystem throughput have been incorporated to maintain a balance with the main processing capacity.

Performance improvements are one aspect of the ClearPath Forward Libra 8691 systems. These systems are designed with the highest levels of resiliency and availability. Each primary system component includes high-availability features for power, cooling and internal disks.

The Libra 8691 system architecture further enhances the overall system resiliency by including redundant MCP application processors, I/O subsystems and supporting infrastructure components. The ClearPath Forward Libra 8691 systems provide a complete unified solution where all components are integrated, tested and supported by Unisys.

ClearPath MCP premium high-end performance

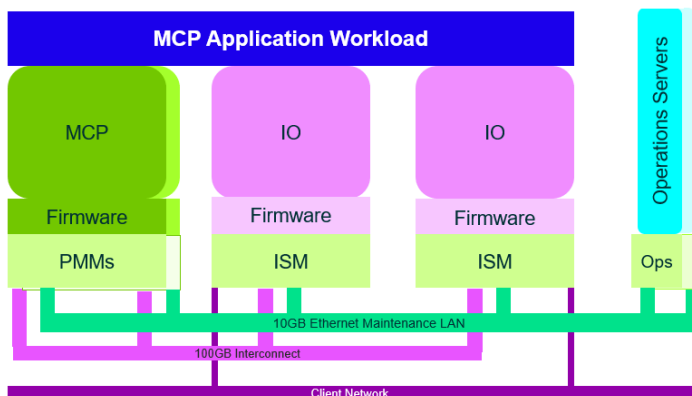
The premium high-end ClearPath Forward Libra 8691 systems are the latest generation of enterprise-class systems to support the MCP operating system on Unisys Intel® platforms. The main processing memory module, or PMM, provides a single thread performance of 1,550 MIPS and a single MCP image of up to 22,500 MIPS. Separate Intel-based I/O storage modules, or ISMs, can be combined to deliver over 312,000 I/Os per second. This represents a single image increase in performance of 55% over the Libra 8591 and more than double the performance of the single image Libra 8390, based on Unisys benchmarks performed under standard conditions.

The Libra 8691 system is licensed following the Unisys pay-for-use business model and utilizes our advanced metering technology.

Metering technology enables you to instantly take advantage of the Libra 8691 full processing capacity while only being charged for the resources used. Pay-for-use licensing allows a reduced capital investment, with a better match of revenues to expenses.

Flexible and secure architecture

The ClearPath Forward Libra 8691 system architecture uses multiple Unisys Intel-based components integrated through a high-speed, private LAN interconnect. This design provides inherent redundancy of all components and allows scalable configurations of the I/O subsystem.



The PMM executes the ClearPath MCP instruction set and includes a full 16GW of memory.

Multiple high-speed Ethernet connections are maintained within the PMM to provide MCP network connectivity.

Two PMMs are included in every Libra 8691. As one PMM is actively processing the MCP workload, the second PMM acts as a warm standby. This two PMM design allows a quick failover of the MCP processing environment and improves system availability during scheduled maintenance.

The Libra 8691 systems also include two I/O Service Modules, or ISMs. Each ISM supports multiple high-speed I/O interfaces to a variety of storage types and for network connections. The latest storage card options supported in the ISM include quad-port 32Gb Fibre connections.

Support for 10/25Gb Ethernet network interface cards allows the Libra 8691 to be part of a high-speed client network, and a full range of copper or optical 1Gb and 10Gb NICs are available.

Each of the two ISMs may be configured with a connection to a shared storage device. This redundancy ensures a balanced I/O flow and ensures that MCP workloads will continue even if one ISM is unavailable.

Unique Libra firmware has been developed for the Libra 8691 PMM and ISM modules to provide compatibility with previous Libra architectures. Existing MCP application code will run without re-compiling or relinking. Supported

storage devices can be connected to the Libra 8691 I/O subsystem, and data formats will be maintained.

The Libra 8691 system demonstrates the Unisys ClearPath commitment to unparalleled security. Multi-layered security is inherent to the architecture; providing protection that helps you maintain data integrity, reduce operational costs, and minimize the risk of lost revenue, regulatory sanctions, or a diminished reputation.

ClearPath MCP integrated stack

The ClearPath Forward Libra 8691 system delivers an integrated stack consisting of hardware, software, middleware and applications optimized for reliability, security, scalability and performance.

A set of powerful enterprise integration capabilities allows existing ClearPath MCP applications and data to expose new services and enable the Libra 8691 system to participate in digital transformation initiatives. In addition, a rich set of industry-standard middleware technologies is available for integrating ClearPath MCP data and transactions.

Software interdependencies

The ClearPath Forward Libra 8691 system requires ClearPath MCP Release 21.0 or later.

Maximizing your ClearPath Forward Libra investment

Unisys recognizes that you are looking for a complete end-to-end solution to satisfy critical IT needs. For ClearPath Forward Libra systems, Unisys offers a single source for integration, support, education, and services.

Additional ClearPath Forward Services maximize your investment in ClearPath Forward systems, applications, tools, and skills. These services help you to implement our solutions, increase the value of your core business applications, and simplify the operation and administration of your ClearPath Forward installation.

Technical specifications

Key Hardware Solution Features	ClearPath Forward Libra 8691 System	
Form Factor	Cabinet	42U rack
MIPS Performance Level (See Note 1 below)	Single Thread Processor MIPS	1,550
	Pay-for-Use Business Model	Libra 8691 (105 – 15,750 MIPS/month with 22,500 MIPS Ceiling)
Processor Memory Module (PMM), I/O Storage Module (ISM)		Unisys x600 R760 - Quantity (2) Processor Memory Module (PMM) (Active/Standby)
	Sockets / Processors / Chipset	(2) / (2) Intel Xeon Platinum 8462Y+, 32C, 2.8 GHz, 60.0 MB Cache, DDR5 Up To 4800 MT/s, 300W Td
	Memory	512GB Memory; (32) 16GB, Low Volt, Dual Rank x4, 4800MT/s RDIMMs
	Internal Storage	(2) 1.6TB NVMe Hot-plug Storage (note: no user internal storage) RAID 1 for H965i Controller
		Unisys x600 R760 - - Quantity (2) I/O Service Module (ISM)
	Sockets / Processors / Chipset	(2) / (2) Intel Xeon Platinum 8462Y+, 32C, 2.8 GHz, 60.0 MB Cache, DDR5 Up To 4800 MT/s, 300W Td
	Memory	256GB Memory; (16) 16GB, Low Volt, Dual Rank x4, 4800MT/s RDIMMs
	Internal Storage	(2) 1.6TB NVMe Hot-plug Storage (note: no user internal storage) RAID 1 for H965i Controller
		Common Attributes – PMM and ISM
	Form Factor	2U
Operations Server	Internal Interconnect	3 x Intel Ultra Path Interconnect (UPI) links; 16 GT/s
	RAID Controller	PERC H965i Integrated RAID Controller, 8GB NV Cache, Front card
	Power	Dual, Hot-plug, Redundant Power Supply (1+1), 1400W
	Availability and Maintainability Features	Hot-plug drive bays; Hot-plug redundant fan; Interactive LCD screen; Extended thermal support; Extended power range
		Unisys x600 R350 - Quantity (2) Operations Servers (OPS)
	Form Factor	1U
	Sockets / Processors	(1) Intel Xeon® processor E-2336, 2.9GHz, 6C (65W)
	Memory	16GB; (2) 8GB, DDR4 3200 MT/s UDIMMs
	Internal Storage	(2) 1.9TB, 2.5" SSD 6Gbps Hot-plug (Note: no user internal storage)
	RAID Controller	PERC H355 RAID Controller
	Power	Dual Hot-plug Redundant Power Supply (1+1), 600W

Note 1: Performance information based on Unisys benchmarks under standard conditions.

Common Solution Attributes		
Environmental Specifications (temperature, humidity, altitude de-rating)	Continuous Operation (PMM, ISM, OPS)	5°C to 40°C at 5% to 85% RH with 29°C dew point. De-rate maximum allowable temperature by 1°C per 175 m above 950 m (1°F per 319 ft).
	Storage (PMM, ISM, OPS)	-40°C to 65°C (-40°F to 149°F) with a maximum temperature gradation of 20°C per hour at 10% to 95% relative humidity at a maximum wet bulb temperature of 33°C (91°F); atmosphere must be condensing at all times.
	Expanded Operation	When operating in the expanded temperature range, system performance may be impacted, and ambient temperature warnings may be reported on the LCD and in the System Event Log. Expanded operation restrictions: No cold startup below 5°C Maximum altitude for the operating temperature must be 3050m (10,000 ft)
Maximum Heat Dissipation		Single Partition, 2 PMM, 2 ISM, 2 OPS: 14,908 BTU/hr. (max)
Cabinet	External Metrics Per Cabinet	US: H(78.39 in), W(23.62 in), D(47.25 in) Metric: H(199.1 cm), W(60.0 cm), D(120.0 cm)
	Chassis Weight (max)	Single Partition, 2 PMM, 2 ISM, 2 OPS: 950 lbs. (430.9 kg) shipping weight
Power	Supply Voltage	100 - 240VAC
	Current Consumption	System: 25.85A @200VAC
	Frequency	50-60Hz
Cooling		Capability to operate at excursion-based temperatures beyond the industry standard of 35°C (95°F). N+1 fan redundancy allows continuous operation with one fan failure in the unit.
Altitude	Operating / Storage (PMM, ISM, OPS)	--16m to 3,048m (-50 ft to 10,000 ft) / -16m to 12,000m (-50 ft to 39,370 ft)
Airborne Contaminant Level		Class G1 or lower as defined by ANSI/ISA71.04-2013
Thermal and Acoustics		Thermal management delivers high performance for the right amount of cooling to components at the lowest fan speeds across a wide range of ambient temperatures from 10°C to 30°C (50°F to 86°F) and to extended ambient temperature ranges.
Remote Management		Embedded Remote Management interface provides server-level management that monitors, reports, and controls power consumption at the processor, memory, and system level.
System Management		IPMI 2.0 compliant
Industry Compliance		Compliant with all relevant industry certifications and guidelines, including 80 PLUS, Climate Savers, and ENERGY STAR.

Note: These specifications do not provide a viable substitute for a detailed configuration, environmental, and infrastructure planning study.

For more information, visit www.unisys.com/clearpath



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