



ClearPath FS Series® FS860

Product Information Sheet

Premium performance ClearPath® MCP processing

The solutions you use today need to work just as well when your business increases. Tomorrow's growth often comes from today's seedlings. Unisys is pleased to offer the FS860, an update to the successful FS801. The system delivers:

- The 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 application and data formats
- Flexible pay-for-use licensing

Unisys is committed to delivering ClearPath MCP systems designed to meet the needs of our clients with large, essential business workloads. The ClearPath Forward FS860 systems deliver on this commitment and set new levels of MCP single-thread and single-system performance.

Advances in the main processing capacity is matched by a high-performance I/O subsystem to support even the most demanding transaction processing environment.

The FS860 systems are built with the highest levels of system resiliency and availability in mind. Each primary system component maintains internal resiliency characteristics for power, cooling, local disks and memory.

The overall FS860 system resiliency is further enhanced by the inclusion of redundant processors, I/O subsystems and supporting infrastructure components.

The FS860 systems provide a complete unified solution where all components are designed, developed, integrated, tested and supported by Unisys.

Skyrocketing new levels of ClearPath MCP premium high-end performance

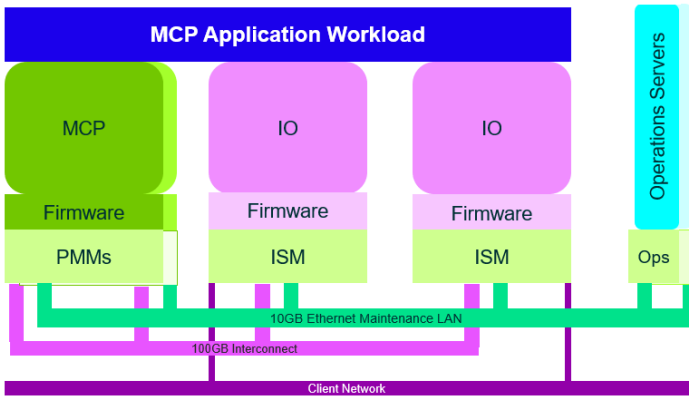
The premium high-end ClearPath Forward FS860 systems are the latest generation of enterprise-class systems to support the MCP operating system on Unisys Intel® platforms. The main processing memory module (PMM) provides single-thread performance of 1,550 MIPS and a single MCP image up to 22,500 MIPS. Separate Intel-based I/O storage modules (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 FS801 and more than double the performance of the single image FS601, based on Unisys benchmarks performed under standard conditions.

Two business models of the FS860 are available to provide flexible licensing options. The FS860 system is licensed following the Unisys pay-for-use business model and utilizes our advanced metering technology. Metering technology lets clients instantly take advantage of the FS860 full processing capacity while only being charged for the resources used. The pay-for-use model allows a reduced capital investment with a better match of revenues to expenses.

The traditional business model offered with FS860 systems provides for software licensing based on a fixed-performance level with options based on the number of accounts or the amount of assets the institution manages.

Flexible and secure architecture

The ClearPath Forward FS860 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. A full range of 1Gb and 10Gb NICs are available, including a 40Gb NIC card to allow the FS860 to be part of a high-speed client network.

Two PMMs are included in every FS860. As one PMM is actively processing the MCP workload, the second PMM acts as a warm stand-by. This two-PMM design allows a quick failover of the MCP processing environment and improves system availability during scheduled maintenance.

The FS860 systems also include two 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 of a 40Gb network interface card allows the FS860 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

balanced I/O flow and insures that MCP workloads will continue even if one ISM is unavailable.

Unique firmware has been developed for the FS860 PMM and ISM modules to provide compatibility with previous architectures. Existing MCP application code will run without re-compiling or relinking. Supported storage devices can be connected to the FS860 I/O subsystem and data formats will be maintained.

The FS860 system demonstrates the Unisys ClearPath commitment for 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 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 allow existing ClearPath MCP applications and data to expose new services and enable the FS860 system to participate in digital transformation initiatives. In addition, a rich set of industry-standard middleware technologies are available for integrating ClearPath MCP data and transactions.

Software interdependencies

The ClearPath Forward FS860 system requires the ClearPath MCP Release 20.0 or later.

Maximizing your ClearPath Forward FS860 investment

Unisys recognizes that you are looking for a complete end-to-end solution to satisfy critical IT needs. For ClearPath Forward FS860 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 FS860 System	
Form Factor	Cabinet	42U rack
MIPS Performance Level (See Note 1 below)	Single Thread Processor MIPS	1,550
	FS860A Account/Asset based	22,500 MIPS
	FS800M Metered Usage	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
	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
Operations Server	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: <ul style="list-style-type: none"> 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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