
HP 9000 Series 700 Model 735CL Computational Cluster



Supercomputing performance at a fraction of the cost.

Overview

The Hewlett-Packard Series 700 Model 735CL cluster combines the industry's leading price/performance Model 735 workstations into a single computational resource. Whether you are looking to downsize from a traditional mainframe or super mini-computer parallel processing or interested in improving the throughput of multiple batch jobs, the Model 735CL is an ideal choice for your most demanding enterprise computing needs.

The Model 735CL is packaged as a complete system with pre-configured hardware, software, and cabinet. The Model 735CL is available in two base configurations: a four-node system, configured and priced for a low-cost entry into cluster computing, or a fully configured eight-node system. Each system includes a choice of either factory-installed Ethernet or a low-latency FDDI interconnect. The four-workstation cluster can be incrementally expanded by adding preconfigured "cluster expansion nodes."

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Model 735 Product Structure				
	Model 735CL Ethernet Workstation Cluster—4 or 8 Node	Model 735CL FDDI Workstation Cluster—4 or 8 Node	Terminal Console Model 735 (Ethernet or FDDI)	Terminal Console Model 755 (Ethernet or FDDI)
Base Workstation Configuration:	<ul style="list-style-type: none"> • (4/8) Model 735 99MHz Headless Workstations • 80MB RAM (per workstation) • 1GB Fast-Wide SCSI-II Disk • ThinNet 802.3 Ethernet LAN • (1) EISA Slot (per workstation) 	<ul style="list-style-type: none"> • (4/8) Model 735 99MHz Headless Workstations • 80MB RAM (per workstation) • 1GB Fast-Wide SCSI-II Disk • FDDI/9000 (per workstation) • (1) EISA Slot (per workstation) 	<ul style="list-style-type: none"> • Model 735 • CRX Color Graphics • 32MB RAM • 1GB Fast-Wide SCSI-II Disk • ThinNet 802.3 Ethernet LAN, or FDDI/9000 LAN • (1) EISA Slot 	<ul style="list-style-type: none"> • Model 755 • CRX Color Graphics • 64MB RAM • 2GB Fast-Wide SCSI-II Disk • ThinNet 802.3 Ethernet LAN, or FDDI/9000 LAN • (4) EISA Slots
Base Cabinet Configuration:	<ul style="list-style-type: none"> • (1) 1.6m, 19" Rack (includes factory wiring) • (1) Ethernet Concentrator • (1) Terminal Server • (1) 5m Ethernet Cable 	<ul style="list-style-type: none"> • (1) 1.6m, 19" Rack (includes factory wiring) • (1) FDDI Concentrator • (1) Terminal Server • (1) 5m FDDI Cable 		
Options:	<ul style="list-style-type: none"> • 735 Workstations • Memory 	<ul style="list-style-type: none"> • 735 Workstations • Memory 	<ul style="list-style-type: none"> • Memory • Disks • Mini-towers • EISA 	<ul style="list-style-type: none"> • Memory • Disks • Mini-towers • EISA

A workstation connected to the cluster serves as a console to manage system administration. While any existing Series 700 system can be used as a terminal console system, two preconfigured terminal console systems are offered. They are preconfigured Model 735 and 755 workstations which provide the performance and expandability appropriate to serve as a file server or as a network router to the cluster

system. Software residing on the server workstation manages the task distribution. The cluster may be linked to a number of different clients, including workstations and X terminals.

Benefits

- Supports thousands of third-party applications; users buying supercomputers must write their own applications
- More affordable to purchase and operate than supercomputers

- Runs sophisticated job management software such as load-balancing and batch queuing tools
- Supports a variety of parallelization software development tools
- Modular in design, with the ability to scale to hundreds of nodes
- Exceptional CPU performance scalability at a fraction of the cost of traditional supercomputers
- Flexibility to deploy clustered workstations onto the desktop

Batch Processing Software Available

Task Broker—HP
 NQS and NQS/Exec—Sterling Software
 Convex NQS+—Convex Computer Corporation
 Load Balancer—Freedman Sharp and Associates Inc.

Parallel Processing Software Available

Convex PVM—Convex Computer Corporation
 Convex MLIB—Convex Computer Corporation
 Express—Parasoft Corporation
 Forge 90—Applied Parallel Research, Inc.
 SIS—ISIS Distributed Systems, Inc.
 Network Linda—Scientific Computing Associates
 PVM/HeNCE—Oak Ridge National Laboratory
 Tuplex—Torque Systems

**System Administration and Management Software**

Network Node Manager and PerfView
 HP GlancePlus
 RemoteWatch
 Omniback and Omniback/Turbo

Network Options

Ethernet—10MB/sec
 FDDI—10MB/sec

Additional, New Software for HP Cluster Computing

NetShare SDK and NetMake—Aggregate Computing Incorporated
 LINPACK, p4, MINPACK, OTTER, and PCN—Mathematics and Computer Science Division of Argonne National Laboratory
 Fortran M—Mathematics and Computer Science Division of Argonne National Laboratory
 LSF (Load Sharing Facility)—Platform Computing Corporation
 Isbatch, Ismake, Istcsh, , IsPVM, Islogin, Istools—Platform Computing Corporation
 DQS (Distributed Queuing System)—Supercomputer Computations Research Institute

For demanding applications requiring performance beyond an eight-node configuration, the Model 735CL cluster supports multiple systems daisy chained or cascaded together. The Model 735CL is an excellent choice for large compute-intensive CAE, CAD, software development, and scientific analysis applications. Configured with job scheduling and balance software, the Model 735CL can automatically and efficiently manage multiple batch processing.

In addition to batch processing, the Model 735CL can be used in parallel processing mode where large jobs are sent to the cluster and divided among multiple CPUs. This advanced form of clustering requires modification to the application software using such software tools as Linda or PVM.

The Model 735CL's high performance, scalability, and low cost—backed by Hewlett-Packard's commitment to quality and computer investment protection—make this system an ideal choice for the most advanced computing requirements.

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