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Solutions

AT&T WorldMark™ 5100C Server

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Bringing computing and communications together to help you get, move, and use information.

AT&T WorldMark™ 5100C Server

AT&T Global Information Solutions introduces the Clustered member of the AT&T **WorldMark**™ 5000 server series – the AT&T **WorldMark** 5100C server.

As businesses continue to perform more of their vital processing on open systems, three requirements become essential:

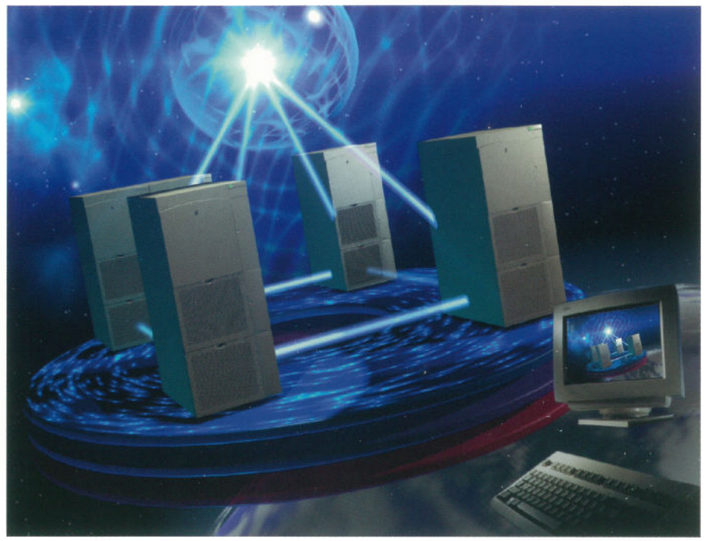
- the system must be available, often 24 hours a day
- the system must be able to grow, protecting an investment which is small by "mainframe" standards yet still substantial
- the system must be manageable, a parameter often cited as a weakness of open distributed systems

The **WorldMark** 5100C server provides the answer to all three of these requirements.
The **WorldMark** 5100C server offers exceptional availability, performance, manageability and investment protection through a unique scalable system design that is compatible with other AT&T LifeKeeper™ clustered systems.

The **WorldMark** 5100C server uses the same processor subsystem found in the **WorldMark** 5100S server, providing the same performance, in-box scalability and high availability features. We then add the clustering and fault resilient capabilities of AT&T LifeKeeper to the system along with an innovative systems management solution which provides a single point of control of your configuration, no matter how many **WorldMark** nodes you decide to employ. Finally, we add to this the ability to quickly, easily and inexpensively grow the system into a Massively Parallel Processing (MPP) architecture. The AT&T **WorldMark** 5100C server clearly stands out as a system that provides outstanding investment protection and flexibility in a simple, elegant, and complete platform-level solution.

Clustered systems -- So exactly what is a cluster? Recent terminology has evolved the meaning of clustering to some degree. The "traditional" definition is multiple systems performing together as a single larger system; however, clustering has expanded in scope to describe a group of systems (or subsystems) interconnected by a LAN, sharing disk storage. In this looser definition, clustering is used to describe systems which provide fault-resilience in a "fail-over" mode along with the traditional clustering. Clustering, used in reference to the WorldMark 5100C server, describes the support of Oracle Parallel Server™ and/or AT&T LifeKeeper Fault Resilient System (FRS) software on WorldMark 5100C server processor subsystems.

Clustering provides a powerful solution essential for business critical applications. Applications which require consistent uptime and/or demand high performance in OLTP environments are especially suited for clustering. Examples of these types of environments include reservation systems, self-service banking, credit authorization, and on-line access to other types of large databases such as medical records, claims information, or billing detail.



Clustering Increases Performance, Ensures Availability

AT&T LifeKeeper FRS, an integral part of the **WorldMark** 5100C server, is a clustering software solution which can be employed with Oracle Parallel Server to enable users to have simultaneous access to databases and shared applications. It can also be employed with other merchant databases to provide high availability. Up to eight processor subsystems can be joined in a single cluster to provide a cost-effective means of increasing performance and ensuring high data availability.

Fault Resilient Software Maximizes Availability

The AT&T LifeKeeper FRS software provides failure protection for the **WorldMark** 5100C server's processor subsystems. During a processor subsystem failure, user connectivity and applications are switched to a surviving processor subsystem to ensure maximum availability, as well as transaction and data protection. Database integrity and availability is also assured since it can similarly be switched to a surviving processor subsystem. While all databases can be supported, packaged AT&T LifeKeeper recovery kits are available for INFORMIX®, SYBASE® and Oracle® (single system version) solutions to provide easier implementation. (With systems using Oracle Parallel Server, the cluster is re-formed using the surviving processor subsystems.) The end result of these activities is an operational system within minutes of a subsystem failure.

Fault Detection and Recovery Preserves Data Integrity

AT&T LifeKeeper Clusters using Oracle Parallel Server employ the AT&T LifeKeeper Distributed Lock Manager (DLM) to provide fault detection and data lock management for your critical applications. The AT&T DLM coordinates database sharing by systems in an Oracle Parallel Server cluster. The AT&T DLM manages data requests by communicating data locking information among the systems in a cluster over the LAN. When a processor subsystem failure occurs, the AT&T DLM automatically recovers the cluster using the surviving processor subsystems to create a new cluster.

Easy and Efficient System and Cluster Management

The **WorldMark** 5100C server offers a single operational view for your entire clustered system. This single point of system administration and management is provided by the Administration Workstation (AWS), essentially a deskside computer. The AWS allows you to easily monitor the system's processor subsystems and disk subsystems, no matter how many cabinets comprise the cluster. The AWS functionality can be expanded to include additional Administration Stations for those customers who desire remote administration capabilities.

The AT&T WorldMark™ Servers are Designed for Growth

With the **WorldMark** 5000 server series you can start with a **WorldMark** 5100C server, our AT&T LifeKeeper-ready solution, or upgrade your **WorldMark** 5100S SMP server to a clustered system by adding additional processor subsystems and external disk arrays. Oracle Parallel Server, AT&T DLM with switchover, and AT&T LifeKeeper are also supported across the **WorldMark** 5100M server's BYNET™ interconnect, providing high performance communications for larger system configurations.

AT&T WorldMark™ servers provide the power, availability, and scalability your business needs to get, move, and use information.

AT&T WorldMark™ 5100C Server

Cluster System Scalability

Cluster System

- From two to eight processor subsystems

Processor Subsystem

- One or two processor subsystems per **WorldMark**™ 5100C server

CPUs per Processor Subsystem

- 4 to 32 90 MHz or 133 MHz Intel® Pentium® processors, each with 4 MB second level cache; 32 MB LARC (Limited Address Range Cache) per Quad processor board
- Support for the next generation Intel processor family

System bus per Processor Subsystem

- 400 MB/second total bandwidth

Memory per Processor Subsystem

- One or two Disconnect Memory Boards
- 64 MB to 4 GB Error Checking and Correcting memory with 2/4-way interleaving

I/O per Processor Subsystem

- Enhanced Micro Channel® - Dual I/O bus at 80 MB/second
- 16 I/O slots; 32-bit bus width per slot
- Quad SCSI Fast and Wide channels at 20 MB/second

Cluster Interconnect

- Ethernet LAN
- FDDI
- BYNET (**WorldMark** 5100M server)

Administration Workstation Subsystem (AWS)

- Single point of system administration and management for the clustered system
- Connected via Ethernet LAN to the processor subsystem
- Connects to external disk subsystems
- Optional Administration Stations
  - Provides additional console connections for local or remote system monitoring

Backup Devices per WorldMark™ 5100C server

- Two local media subsystems
- Up to eight half-height drives
- 3.5-inch flex drive
- Support for:
  - 600 MB CD-ROM
  - 4/8 GB DDS-2 DAT Tape
  - 1 GB QIC Tape
  - 7/14 GB 8 mm Tape

External Data Storage

- AT&T 6256 Rack Mount Disk Array Subsystem
  - 256 GB internal storage capacity
  - Supports RAID 0, 1, 3, 5
  - Internal UPS
  - Supports AWS Interconnect
  - Hot Plug drives, fans, disk controllers
- AT&T 6091 Tape Subsystem
  - Digital Linear Tape (DLT)
  - 7/14 GB 8 mm Tape
- AT&T 5607 Disk Subsystem
- AT&T 6298 Disk Subsystem
- AT&T 6299 Disk Subsystem
- AT&T 6357 Tape Drive
- Exabyte® 210 and 440/480 (available from AT&T)
- StorageTek® 4400 Silo (available on a referral basis)

Connectivity per Processor Subsystem

- Up to 7 LAN and 24 WAN connections
- Optional MPCM Communications Subsystem
- Optional IBM Channel for Teradata™
- Optional IBM Channel via Deployer

High Availability Features

- Automatic System Recovery
- Automatic User and Application Switchover upon system failure
- Internal uninterruptible power
- Three fault resilient hot-pluggable fan modules per processor subsystem
- Hot pluggable disk drives
- Redundant power supplies
- Optional redundant battery back-up

Model Upgrades

The **WorldMark** 5100S server is upgradable to the **WorldMark** 5100C server which is upgradable to the **WorldMark** 5100M server.

Specifications

- Physical dimensions per **WorldMark** 5100C server cabinet:
  Height: **183 cm** (72 in.)
  Width: **76 cm** (30 in.)
  Depth: **102 cm** (40 in.)
  Weight: **499 kg** (1100 lbs) (fully configured - two processor subsystems)
- Operating temperature
  5° to 45° C
  (40° to 113° F)
- Up to 8 750 Watt power supplies
- Power Requirements
  Voltage Range:
  200 to 240 VAC three phase
- Compliance with U.S. and international safety and emissions standards.

Supported Operating Systems

- AT&T UNIX SVR4 MP-RAS

Supported Databases include:

- In fail-over mode:
  - INFORMIX OnLine Dynamic Server™
  - Oracle
  - SYBASE SQL Server™
- In clustered mode:
  - Oracle Parallel Server

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