AIX 5L Version 5.1

Highlights

- ***Provides a robust, scalable, secure and reliable UNIX® platform for critical e-business and Internet applications***
- ***Adds new elements to enhance security, workload management, system management and Java™ software scalability***
- ***Offers the most open UNIX operating system with LINUX® affinity and support for POWER and Itanium™-based servers***

The only one

AIX® 5L Version 5.1, the next generation of AIX, is an open, scalable UNIX operating system from IBM. Compared to AIX version 4.3, it provides increased levels of integration, flexibility and reliability – essential for meeting the high demands of today's mission-critical e-business applications. Only one UNIX operating system leads the industry in delivering advanced software functions, an operating system for POWER and Intel® Itanium-based platforms, and an affinity with Linux. That UNIX is AIX.

Robust, scalable and reliable

AIX 5L Version 5.1 builds on its solid AIX heritage to deliver advanced technology and provide customers with a competitive advantage. It operates over a range of POWER-based systems, including the IBM @server pSeries and IBM RS/6000.® In addition, AIX 5L provides the reliability, availability, performance and security required by today's e-businesses. It continues as a leader in its adherence to operating system standards and is UNIX 98 branded.

AIX is fully integrated to support existing 32- and 64-bit hardware systems in their full range of scalability, with improved software features. It integrates key Internet technologies, such as Java and IP multipath routing, and offers a full complement of development tools, including a Performance Toolbox for system profiling and tuning.

AIX provides the widest choice of UNIX business solutions, leadership technology and flexibility for the future. And, with 32-bit application binary compatability, customers can be assured that AIX 4.3 applications (developed in accordance with IBM guidelines) will continue to run.

Brings new enhancements

AIX continues its tradition of innovation and excellence, strengthening its leadership network security by enabling the use of Certificate Revocation Lists with the Internet Key Exchange (IKE) protocol for authenticating remote users or devices. This feature further enhances the AIX IP security function for Virtual Private Networking support. AIX 5.1 implements MIT's Kerberos V5 Release 1.1 network authentication service to negotiate and optionally encrypt communication between two points on the Internet or between components in a system.

AIX helps ensure that critical applications meet user expectations even during periods of heavy, unpredictable demand. AIX Workload Manager (WLM) allows customers to define a resource allocation policy that dynamically addresses application requirements and allows processor cycles, real memory and disk I/O to be divided between jobs. Business needs are translated into policies that automatically recognize job priority and scheduler dynamics. This is a valuable asset for critical business solution areas such as e-business, business intelligence, server consolidation and enterprise resource planning.

New enhancements to Workload Manager include the addition of an application programming interface (API), enabling external applications to modify system behavior. A new accounting subsystem allows users to perform resource usage accounting per WLM class in addition to standard accounting per user or group.

Workload Manager is easily accessed through the Web-based System Manager (i.e., an intuitive, graphical interface), the System Management Interface Tool (SMIT), as well as through AIX commands.

Reliable Scalable Cluster Technology (RSCT) allows monitoring of system resources either automatically by the system or by an administrator. These resources – such as file systems, programs, processors, adapters and kernel information – are monitored around the clock with preprogrammed responses being run when specified threshold values are reached. This results in improved systems management and operational productivity.

IBM AIX Developer Kit, Java 2 Technology Edition, provides a cooperative interface between the AIX kernel and Java technology for improved application scalability and performance over the range of IBM UNIX servers. It also better enables AIX for Java runtime and applications development.

Another enhancement is a new version of Journal File System – JFS2. This file system allows data to be stored in a more contiguous manner to minimize wasted space. It also uses database techniques to maintain structural consistency and is designed to prevent damage to the file system if the system is halted abnormally.

Linux affinity for flexible solutions

AIX provides a wide choice of critical UNIX business solutions, leadership technology and strategic flexibility for the future. A strong affinity between AIX and Linux provides APIs that allow popular applications developed on Linux to run on AIX with a simple recompilation. These APIs work in conjunction with Linux open source software available separately

from IBM as the AIX Toolbox for Linux Applications. Customers can port existing Linux open source applications to AIX, enhance those applications and develop portable applications utilizing common Linux development tools.

AIX incorporates Linux compatible APIs and header files to provide source compatibility. AIX and the AIX Toolbox for Linux Applications can help customers realize a smooth technology transition between two of the industry's most open standards-based operating environments, AIX and Linux.

Because the applications are running on AIX, customers are able to combine the flexibility of Linux with the advanced features of AIX, including advanced workload management, sophisticated systems management tools and security.

Freedom of choice: POWER or Itanium

IBM has taken the UNIX platform to the next level by including a 64-bit kernel that exploits the speed and processing power of both the IBM POWER and Intel Itanium architectures. Furthermore, AIX has embraced the open development movement through a strong affinity with Linux, making it the most open UNIX operating system in the industry.

AIX allows users to run the applications they want, on the hardware they want. It offers an unprecedented level of flexibility, choice and openness for managing the demands of e-businesses now and in the future.

64-bit performance now

Exceptional 64-bit performance does not come from the 64-bit processors alone, but from the combined ability of the hardware and the operating system. On 64-bit POWER-based systems, AIX provides full coexistence between 32- and 64-bit applications, running applications concurrently or cooperatively, sharing access across files, memory and other system services. This greatly smoothes the transition from 32-bit to 64-bit applications as the use of 64-bit POWER-based solutions becomes more prominent in the industry.

Security customers can count on

AIX provides the seamless system, network and transaction security required for mission-critical e-commerce. In fact, AIX was the first operating system to receive Virtual Private Network certification from the International Computer Security Association (ICSA). AIX bundles a complete set of VPN functions that are ICSA certified and based on the IPSec standard, a definition developed by a working group of the IETF (Internet Engineering Taskforce) to provide a stable, long-lasting base for network layer security.

Service and support to help keep businesses running

AIX provides a platform that lets businesses get the most out of today's mission-critical applications while positioning them for the future. And like all IBM server products, AIX is backed by the worldwide service and support of IBM.

Following are the new features added exclusively for AIX 5L Version 5.1

Feature	Benefit
Flexibility	
Multiplatform operating system	Flexibility to select a POWER- or Itanium-based system helps protect investments in applications, processes and skills
Affinity with Linux	Helps reduce cost and improve e-business solutions by allowing portable Linux applications to be combined with the scalability and robustness of AIX
System Scalability	
New JFS2 File System	Efficient storage of large (4 Petabyte limit, 1 Terabyte tested) files for deployment of advanced e-business applications
Selectable Logical Track Group (LTG)	Helps administrators tune disk storage for optimum performance
e-business and Network Performance	
Virtual IP Address (VIPA)	Helps applications remain available if a network connection is lost
IP Multipath Routing	Improves network availability by providing multiple routes to a destination
Multiple Default Gateways	Keeps traffic moving through a network by detecting and routing around dead gateways
Extended Memory Allocator	Helps improve performance of applications that request large numbers of small memory blocks
Security	
Kerberos V5 Authentication (POWER only)	Helps administrators simplify password authentication for users connecting to several machines
Java Software	
Included in base AIX	Provides a popular cross-platform programming language for e-business applications
Systems and Workload Management	
/proc file system	Helps system administrators more easily review system workloads and processes for corrective action
RSCT	Automates system monitoring thereby helping to improve system availability and performance
UNIX System V Release 4 (SVR4) Printing	Allows users comfortable with SVR4 print utilities to more easily use AIX
Accounting in Workload Manager	Allows users to collect system resource usage information for billing or reporting purposes

Feature	Benefit
Storage	
Optional Passive LVM Mirror Write Consistency	Helps maintain application and data integrity in the event of a system crash
Optional hot spare disk support	Improves availability of applications or data
Hot spot management commands for Logical Volume Manager	Allows administrators to identify hot spots for relocation without sacrificing availability
Reliability, Availability, Serviceability (RAS)	
Automated system hang recovery	Helps systems remain available without administrator intervention
Consecutive counting of duplicate errors	Avoids error capacity overloads
Ability to deactivate active paging space	Dynamically allows deactivation without rebooting
Automatic dump analysis and e-mail forwarding	Accelerates customer support and problem diagnosis
Dump compression and capacity warning	Helps avoid situations where dump exceeds system recording capacity
Development and Performance Tools	
“pax” archive format	Enables 64-bit ready support for files larger than 2GB
New and enhanced Tools Plus program interfaces for access to Performance Monitor data	Allows administrators and users to more easily collect information and optimize system performance in addition to identifying correct upgrade components

AIX Expansion Pack and Bonus Pack

The AIX Expansion Pack (new with AIX 5L) extends the base operating system by providing encryption support, a browser to view online html publications, and an http server to serve online publication pages and support Web-based System Manager.

The AIX Bonus Pack complements AIX by adding features, functions and programs. An Expansion Pack and a Bonus Pack are included with every new order of AIX 5L Version 5.1 when media is selected. Both packs can be ordered separately for existing AIX licenses.

For more information

For more information on AIX 5L Version 5.1 and upgrade benefits, contact your IBM representative, IBM Business Partner or visit the following Web sites:

ibm.com/servers/aix
ibm.com/eserver/pseries
ibm.com/ibmlink

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