A cornerstone of the IBM e-business infrastructure

IBM

IBM Directory Server
Version 4.1

Highlights

■ *Available for AIX®, Solaris, Windows NT®, Windows® 2000, HP-UX and TurboLinux, Suse and RedHat Linux distributions for Intel® and IBM @server zSeries platforms. IBM Directory Server capability is also provided in the OS/400® and z/OS (OS/390®) operating systems as well as in Lotus® Domino™ Server.*

■ *Designed with numerous enhancements to significantly improve performance and able to support millions of entries on a single server, while providing thousands of clients with concurrent access to the server.*

■ *Compliant with Lightweight Directory Access Protocol (LDAP) Versions 2 and 3.*

■ *Based on IBM DB2® Universal Database™ (UDB) technology, which provides proven reliability and scalability as the back-end data store.*

■ *Robust replication support with both master/subordinate and peer-to-peer replication, with up to dozens of master servers.*

■ *Supported by leading LDAP solutions including:*
   - Applications from Siebel and SAP
   - Metadirectory and virtual directory solutions from Critical Path, Maxware, Metamerge, Novell, Radiant Logic, and Siemens
   - Identity Management solutions from Tivoli®, Business Layers, Oblix and OpenNetworks
   - Security solutions from Tivoli, Netegrity, Symantec, enTrust, Baltimore and RSA

■ *Tight integration with IBM operating systems, middleware, identity-management and security products. Integrated into many Tivoli and WebSphere® offerings.*

■ *Usability enhancements include Dynamic and Nested Groups, as well as Sorted and Paged Search Results.*

■ *Interoperable with LDAP solutions as demonstrated successfully at The Open Group LDAP Plugfest.*

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"Directories will become critical security infrastructure to support e-business initiatives."[1]

Security and authentication are top concerns for most firms. The ability to leverage advanced IT capabilities like Web services and grid computing will increasingly depend upon a comprehensive enterprise directory. IBM Directory Server V4.1 adds security, authentication, consistency and flexibility to a company's e-business infrastructure. With IBM Directory Server V4.1, companies can reliably authenticate their users, allowing them greater control across their enterprise and a protected e-business environment as they open up their internal business processes to their customers, supply chain partners and automated transaction systems.

LDAP directories are a core component of the next-generation e-business infrastructure and are being integrated with operating systems. Directories are evolving from limited application-specific and network operating system (NOS) administration roles to a core universal network service. They are taking on a greatly expanded role in enterprise computing and are becoming the central data repository of the network. The directory is a key integration point where identity, security, applications, systems and network management, and other network services all converge to store and retrieve data.

IBM Directory Server is designed and built to perform a role. As the central store for data within an enterprise, it is a powerful, secure and standards-compliant enterprise directory for corporate intranets and the Internet. A common goal within the enterprise today is to consolidate and unify the management of identity. IBM Directory Server is built for identity management with role supports, fine-grained access control and entry ownership. It provides the foundation for improved security and rapid development and deployment of Web applications. For mission-critical enterprise requirements where 24x7 availability is a must and exceptional performance is required, IBM Directory Server is the right choice. Using the power of the IBM DB2 Universal Database solution, IBM Directory Server provides the reliability and stability in an enterprise or e-business LDAP directory.

In addition to Directory Server V4.1, IBM offers Professional Services to provide directory solutions including metadirectory services, implementation services, and identity provisioning. IBM's metadirectory services provides integration middleware solutions to tie together heterogeneous directories. Metadirectory services enable enterprises to create one integrated enterprise directory, helping to significantly decrease the cost of maintaining discontiguous directory systems.

Is your Directory Solution open?
Yes. In fact, IBM takes an open approach to our directory technology, ensuring that our customers have a wide array of identity provisioning application choices. Some vendors
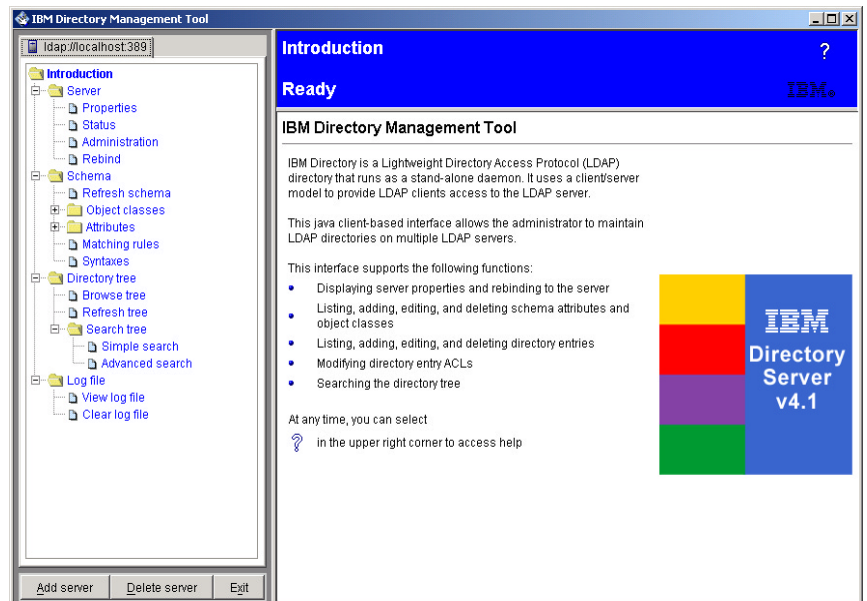
The IBM Directory Server Web-based interface allows you to set up and manage your directory.

build proprietary extensions into their directory that "prefer" their own provisioning applications.

How does it improve usability?
IBM Directory Server V4.1 supports a number of features that increase administrator usability. For example, you can sort and view search results as "pages". Groups can be nested or "dynamic," that is, changes in a defined variable can automatically update the group profile.

How about its scalability?
Our current offering runs a number of multimillion-entry customer directory implementations. For example, the IBM BluePages service, built on our Directory, supports over 15 million directory operations per day. IBM Directory Server V4.1 supports groups as large as hundreds of thousands of entries and is built on DB2® database software, which scales to about a billion database entries.

How do the replication facilities work?
An example of an replication options that IBM Directory Server V4.1 supports is "peer-to-peer" replication that allows the directory to be con-

figured with up to dozens of master servers, maximizing reliability.

How is it offered?
Besides coming as a stand-alone offering, available as a no-charge download from the Web, IBM Directory Server v4.1 is integrated into Tivoli Identity and Access Manager offerings, WebSphere Application and Commerce Servers, and the OS/400, z/OS and AIX operating systems.

What does it compliment?
IBM Directory Server V4.1 is an excellent, extremely scalable stand-alone directory supporting a wide range of LDAP-compliant applications. Increasingly, enterprises also need metadirectory capability, which joins heterogeneous directories into one enterprise-side system. With this announcement, IBM is also introducing enhanced metadirectory services.

Tell me about the services
IBM offers comprehensive services to turn software into solutions. These include directory implementations, as well as metadirectory identity-provisioning solutions.

ibm.com/software/network/directory

Feature	Benefit
SSL data encryption	IBM Directory Server V4.1 includes the ability to encrypt data that is transmitted on the wire. By using Secure Sockets Layer (SSL) technology with IBM Directory Server, data can be securely sent from a client to the LDAP server.
DB2 UDB 7.2 DataStore	Proven performance, reliability and data integrity.
Write-through cache	Updates are committed to the back-end data store and will not be lost if the server fails.
Fine-grained access control	Controls access to data down to the individual attribute level, allowing self-service and delegated administration. Allows access to a limited number of attributes within an entry, enabling users to update a specific number of attributes while the rest are read-only.
Entry ownership	Allows not only access but entry ownership to be defined, providing a very robust delegated administration model.
Client SDKs	C SDK is provided, including a 64-bit AIX client, allowing fast application development. Java™ access is also supported using standard J2EE™ interfaces.
Logging on server events	Audit, Change and Error logs are provided to allow quick problem detection and prevention. The Change log can be used to allow connection to external data sources and avoid comparison of all data to find changes that occur.
Robust replication	Single-master multiple replication and multiple-master replication are supported. Allows the server to be configured to prevent any server outage for either reads or writes. Allows configuration of servers to match the topography of the network to ensure data availability and to maximize server response time. IBM Directory Server provides flexibility in the deployment of servers. A single master server with an unlimited number of replica servers or multiple master servers with an unlimited number of replica servers.
National Language Support (NLS)	Administrative consoles and documentation are available in many languages.
Comprehensive and extensible schema	The IBM default schema is one of the most complete in the industry. The schema includes not only person objects and attributes but the Dynamic Enabled Networking (DEN) schema for devices and support for Java object storage. Using the IBM schema helps avoid the time-consuming design of schemata, which can slow the deployment of the LDAP directory. The schema can be updated dynamically without causing a service interruption of a server restart. All schema updates are replicated.
Management	There are two management consoles. The first console is the Web browser-based directory administration console. This console can be run remotely and thus, lets you manage the operation of IBM Directory Server. The other console provided is the Directory Management Tool (DMT). This console allows the remote administration of data within the server. You can quickly add new attributes, modify existing attributes, add object classes, view the directory tree, add entries, and modify schema. You can easily perform all the data-administration tasks easily from a remote client.
Plug-in support	You can add additional server function quickly by using the server plug-in framework.
Authentication	There are a number of authentication options for IBM Directory Server. You can use simple user ID and password authentication. You can use the more-secure digital certificate-based authentication. IBM Directory Server also includes an Simple Authentication Security Layer (SASL) plug-in interface, including Challenge-Response Authentication Mechanism MD5 (CRAM-MD5) and Kerberos authentication if required. The choice of authentication method is left to the user, who can choose a method that is supported or define an alternative using the SASL interface.
Installation	Consistent GUI-driven cross-platform install experience.

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[1] Enck, John. "Directory Services, Metadirectories and E-Provisioning," Gartner Spring Symposium/IT Expo, May 2001.

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