

CA Directory

CA DIRECTORY HELPS ORGANIZATIONS PROVIDE SUPERIOR EXPERIENCE AND SECURITY FOR ONLINE APPLICATIONS. BY DELIVERING THE HIGHEST LEVELS OF AVAILABILITY, RELIABILITY, SCALABILITY AND PERFORMANCE, CA DIRECTORY HELPS YOU MEET THE NEEDS OF YOUR BUSINESS APPLICATIONS WITH REDUCED HARDWARE COSTS. PROVEN TO SCALE TO HUNDREDS OF MILLIONS OF USERS AND HUNDREDS OF SERVERS IN DISTRIBUTED ENVIRONMENTS, CA DIRECTORY CONTINUES TO SET THE BENCHMARK FOR SUPPORTING ONLINE SERVICES.

Overview

Businesses are becoming increasingly dependent on their online applications to provide critical services for customers, employees and business partners. Meanwhile, security requirements are evolving from simple user authentication to tracking detailed login and personalized information associated with dynamic business operations. The ability of online applications to support superior availability, reliability, scalability and performance is directly dependent on the capabilities of the supporting directory infrastructure.

Benefits

CA Directory provides you with a high-performance directory foundation for online applications. This lets your organization:

- Provide scalability without exorbitant hardware costs
- Meet the needs of new, dynamic business applications
- Improve operational efficiency by consolidating islands of data into a single information backbone
- Provide a highly responsive and always available experience for your online application users

The CA Advantage

CA Directory meets the challenges of performance and scalability for online applications through unique features such as ultra-fast write performance and distributed operations. This enables online applications to provide better user experience and stronger security without incurring high hardware costs. CA Directory supports CA's greater vision for Enterprise IT Management (EITM), which is to help you unify IT and simplify the management of complex computing environments across your enterprise for better business results.

CA Directory Provides Superior Performance and Scalability for Online Applications

Online applications provide vital services for organizations whether they enable customers to access their electronic accounts or allow employees to access critical business data. These web-based applications are becoming more numerous, dynamic and complex while businesses must support around-the-clock operations across a global infrastructure. Application performance is directly dependent on its supporting infrastructure, especially the underlying directories that provide identity, policy or session information. Any improvement in directory performance, scalability and reliability results in better performance, scalability and reliability for online applications.

In the past, organizations have coped with directory performance limitations by restricting applications to performing only simple searches on the directory. However, this is no longer sufficient. Increased security and compliance requirements mean more dynamic information needs to be stored in the directory. For example, a login has become more than a simple lookup of a name and password. Instead, a login requires storing the last login time and other sophisticated password policy information. With increased application demands, the underlying directories need to write data with the same level of efficiency as they read data.

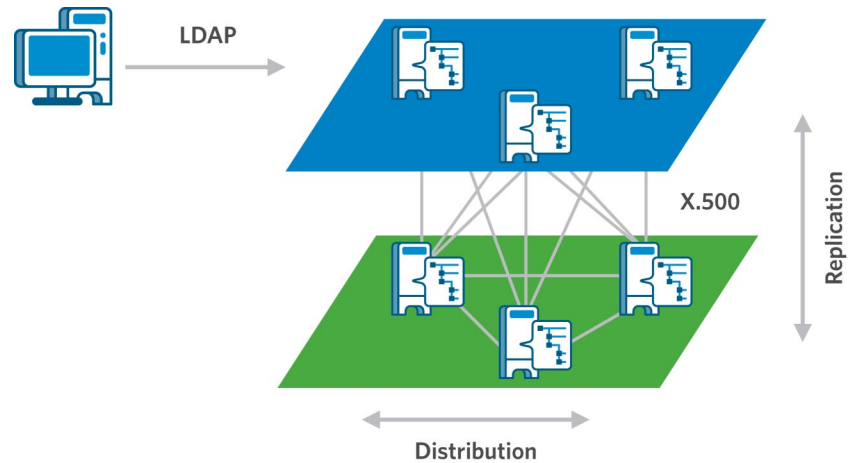
Online applications must also support millions or tens of millions of users without becoming sluggish or unresponsive. Traditionally, the only way to accommodate larger directory systems was to increase the power of a central server which can be an expensive proposition. A more cost effective method of scaling is to use distribution and horizontal partitioning to share the data and the load across many smaller and cheaper servers.

CA Directory provides you with the performance, scalability and reliability needed to support your most demanding online applications. Its superior technology enables ultra high-speed performance for both read and write operations as well as transparent distribution and replication to scale to any number of servers (see Figure A). Unlike common LDAP servers that cannot efficiently communicate with one another, CA Directory is architected to perform and scale in a distributed environment with significantly reduced hardware costs.

FIGURE A

The performance, scalability and reliability of CA Directory stems from its ability to mesh any number of servers into a transparent backbone service capable of seamless distributed operations, guaranteed consistent replication and automatic recovery.

CA DIRECTORY MESHED BACKBONE



Key Capabilities

Performance and Scalability

Independent benchmark testing has shown that CA Directory is faster and more scalable than other directory products.

EXCEPTIONAL READ AND WRITE PERFORMANCE CA Directory has the revolutionary ability to perform operations at rates of up to 20,000 modifications or searches per second on entry level hardware. This is especially important for your write-intensive operations, such as storing the last login time with each authentication or managing user personalization on large-scale web sites. This makes CA Directory an attractive alternative to other directory solutions that require massive amounts of hardware to achieve high throughputs.

UNLIMITED SCALABILITY CA Directory can scale to hundreds of millions of users and a billion entries by distributing data amongst any number of servers. The mesh of directory servers is transparent to applications through the use of seamless distributed operations. CA Directory scales both vertically with tens of millions of entries in a single server, and horizontally by connecting together as many servers as required into a unified backbone.

MULTI-SERVER OPERATIONS CA Directory excels in providing many distributed performance features, such as high-speed switching and routing, concurrent replication, intelligent load-sharing, shortest path meshing and distributed parallel searching. This allows large-scale backbone directory services to be built using numerous servers without a significant loss in performance.

Distribution and Routing

A core strength of CA Directory is its ability to support large-scale distributed and replicated backbone infrastructures without sacrificing reliability or performance.

HIGH-SPEED SWITCHING AND ROUTING CA Directory provides intelligent and transparent chaining of queries to distributed servers. This lets your applications view the directory as a single, logical federated backbone directory system regardless of the number of servers.

HORIZONTAL PARTIONING In addition to subtree distribution, CA Directory can also split large flat-namespaces across many servers using horizontal partitioning. This is very useful for applications that want to view the directory as a simple flat data store while still facilitating efficient operations by distributing the data and operations over many smaller and lower cost servers.

HIGH AVAILABILITY CA Directory can automatically and transparently route queries to alternative servers if a server fails or is taken offline in a replicated environment. This is key to providing 24 hours a day, 7 days a week availability as it allows uninterrupted service in the case of hardware failures, link failures or in the event that servers must be taken offline for maintenance.

VIRTUAL DIRECTORY CA Directory can seamlessly integrate LDAP-only servers into a distributed directory backbone. This means that LDAP islands can be linked into a single virtual directory, which can greatly simplify applications and your enterprise administration.

Replication and Reliability

CA Directory is the only directory that supports multi-master consistent-state replication. This lets it safely load share and instantaneously failover to alternative servers when a machine or network fails with no loss of data integrity.

GUARANTEED CONSISTENCY CA Directory provides you with the unique ability to support replication mirroring, in which updates are concurrently replicated to other servers as part of that update. This design ensures that servers are kept synchronized in real-time and that replicated servers do not fall behind under load. This is very important for guaranteeing consistency of information between your servers and thus, safe load-sharing and failover.

ALL-MASTER REPLICATION CA Directory replication is symmetrical and thus does not need to be configured in master-slave arrangements. By using the meshed capability of CA Directory, any number of replicated servers can be used without losing performance. In addition, the peer relationships are automatically calculated and so there is no need to configure replication agreements as is required in most other directory products.

AUTOMATIC RECOVERY CA Directory provides seamless failover and failback capabilities. If a server goes down, the other servers can take over with no loss of service. When the failed server comes back up, it automatically resynchronizes and rejoins the backbone without the possibility of LDAP clients receiving out-of-date data from the recovering server.

Security and Data Management

CA Directory includes many security and data management capabilities that support your critical business applications.

STRONG SECURITY CA Directory gives you a full range of features including: strong authentication to Hardware Security Modules (HSMs); rich password policies; fine-grained, rule-based and role-based access controls; SSL and TLS link encryption; and all common password hashing standards.

DISTRIBUTED SECURITY CA Directory also provides distributed authentication, mutual authentication, network authentication, distributed trust, and routing checks based on access control policy. All of these features are fundamental in providing a secure, distributed backbone directory service.

DATA VIEWS CA Directory includes an ability to create data views that are similar to stored procedures to simplify LDAP applications. This allows high-level searches to be resolved into many searches, perhaps conditional, across the directory backbone to resolve complex data relationships. The Data Views functionality simplifies applications by insulating them from changes in the underlying directory data structure.

AUTOMATED DATA MANAGEMENT CA Directory provides many mechanisms to maintain directory data. These include referential integrity to automatically maintain relationships between entries, dynamic roles that at operation-time determine membership based on a filter, and inbuilt periodic dumps to guarantee regular data backups. This reduces administrative costs and increases the integrity of the information being stored.

Administration and Deployment

The challenge of managing a distributed environment is to manage servers collectively rather than individually. CA Directory helps you to simplify the management and deployment of a directory system.

WEB ADMINISTRATION CA Directory provides a flexible, graphical web-based management portal called DXmanager (see Figure B). This gives your administrators a visual representation of configuration, status and monitoring. Configuration of the whole directory backbone can be achieved from a centralized point. DXmanager also lets your administrator monitor important operating levels, such as replication queue levels and link traffic. This helps identify potential bottlenecks before they become an issue.

GLOBAL POLICIES Configuration is defined in terms of global policies which can greatly simplify maintenance, deployment and auditing. Examples include security, schema, distribution and replication policies. Because all servers have the same configuration, changes need only occur once, which reduces the possibility of inconsistent configurations between servers.

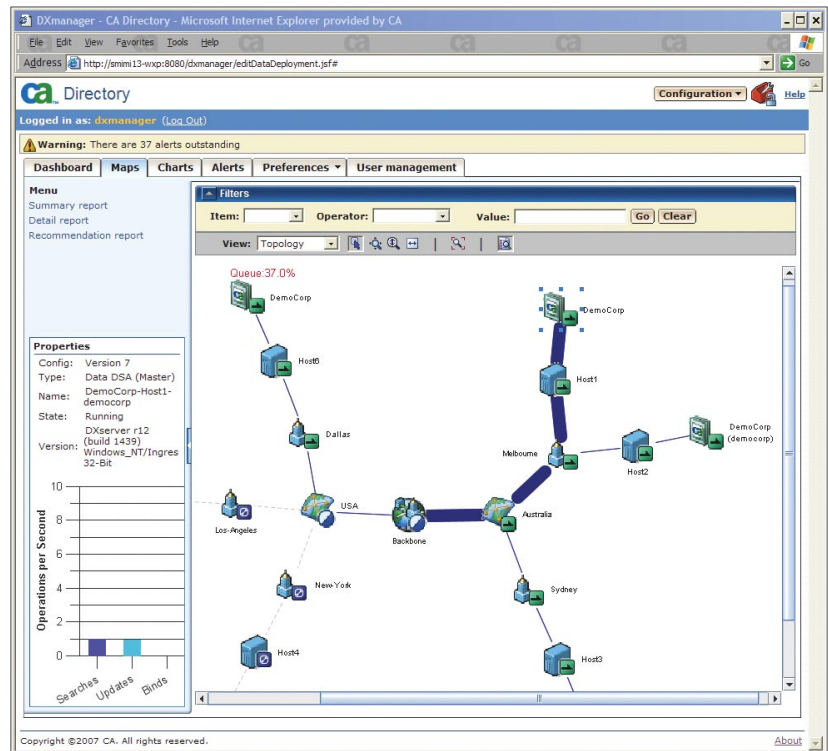
PLATFORM SUPPORT CA Directory supports all major operating systems including most versions of Windows and UNIX as well as 64-bit operating systems such as Linux 64, Solaris 10/Intel 64, UltraSparc 64, IBM Power5 64 and HPUX Itanium 64.

OPEN STANDARDS CA Directory supports all major open standards to ensure that applications can work seamlessly with a CA Directory backbone. Supported standards include: LDAP (and related RFCs), X.500 (DAP, DSP, DISP), Security (SSL, TLS, password hashes), Management (SNMP and related RFCs), Network (IPv6, RFC1006), and US Federal Government standards (FIPS 140-2, Common Criteria EAL3, Section 508).

FIGURE B

The DXmanager Graphical User Interface provides your administrator with a visual display of the design and the ability to monitor all servers from a central point.

CA DIRECTORY DXMANAGER INTERFACE



CA Directory Helps Improve User Experience and Security for Online Applications

CA Directory enables your organization to support the ever increasing number, complexity and size of online applications without a similar growth in hardware or administration costs. Deploying your online applications on a superior directory foundation will have a direct impact on those applications, including:

- Support for dynamic operations, particularly security features, as a result of CA Directory's ultra-fast read and write performance
- Extraordinary application responsiveness as a result of CA Directory's inherent efficiency and high-speed switching and routing capability

- Near guaranteed availability as a result of CA Directory being able to provide automatic and transparent fail-over and recovery
- Scaling to huge user bases without incurring large hardware costs as a result of CA Directory's ability to distribute information across any number of servers

CA Directory has been proven across most industries and organizations from small to huge and provides the full range of features that are necessary to help your organization provide better customer experience, service and security.

The CA Advantage

CA Directory helps your organization accelerate time-to-market, reduce development and administration costs, and efficiently maintain maximum security. In doing so, it delivers the assured performance, reliability and virtually unlimited scalability required by today's online applications. CA Directory is extremely fast, has a small footprint and supports all the relevant industry standards to provide you with the most flexible directory on the market.

CA's vision for enabling this higher level of management control is Enterprise IT Management (EITM). EITM is a dynamic, secure approach that integrates and automates the management of information technology applications, databases, networks, security, storage and systems across departments and disciplines to maximize the full potential of each. CA's comprehensive portfolio of modular IT management solutions helps you to unify IT and simplify the management of complex computing environments across your enterprise to better manage risk, costs and services, and ensure that IT meets your business needs.

Next Steps

CA Directory can help you change the pattern of an unsuccessful project to a successful one because of its flexibility to mold to specific business requirements. See how leveraging a superior directory foundation can improve performance, availability and scalability of your online applications and overall business.

To learn more, and see how CA software solutions enable organizations to unify and simplify IT management for better business results, visit [ca.com/products](https://www.ca.com/products).

Learn more about how CA can help you
transform your business at ca.com

