SYBASE®

Sybase® Adaptive Server® Enterprise Security and Directory Services Option

Data Protection and Application Security

PRODUCT DATASHEET

The need for enterprises to protect sensitive data from unauthorized parties has never been greater. The growing number of high-profile incidents in which customer records, confidential information, and intellectual property are leaked (or lost/stolen) has created a demand for powerful solutions that protect against the release of sensitive information.

Sybase's Security and Directory Services Option for Adaptive Server Enterprise (ASE) ensures data privacy through row-based access controls, the encryption of in-transit data, and support for LDAP, Active Directory, and PAM services.

Row-level access control is a flexible and unique approach to information filtering. Administrators can define security parameters that are applied to individual data elements or records in a database.

Encryption of in-transit data keeps sensitive data private during transmission using FIPS 140 compliant encryption for Secure Sockets Layer (SSL) and Public Key Infrastructure (PKI) certificates.

Lightweight Directory Access Protocol (LDAP), Pluggable Authentication Modules (PAM), and Active Directory provide mechanisms to simplify the management of directory information across multiple servers and platforms.

DATA PRIVACY THROUGH ROW-LEVEL ACCESS CONTROLS

Data for different clients stored in the same database table can be protected. By using the row-level security mechanism, DBAs can create mandatory rules that describe how data is accessed in a database. These rules can be expressed in terms of the data itself and related to the identity of the user. User credentials are established only once at login, thereby controlling excessive overhead for implementing security.

Rules can be as simple as tagging rows with a label indicating the data sensitivity and tagging the users with clearance levels. More complicated rules can even incorporate relations to data in disparate tables. Row-level security, then, keeps data private for different clients in the same database. In some fields like healthcare, it is extremely important to protect sensitive data. Administrators can use mandatory rules to ensure private information is only accessed by authorized users.

DATA SECURITY DURING TRANSMISSION

ASE allows for link-based encryption using Secure Sockets Layer and PKI certificates. Sybase uses FIPS 140 certified algorithms for encrypting the SSL transmission protocol to guarantee privacy over the communication channel as information is sent to and from the user. FIPS 140 is a U.S. government standard for implementations of cryptographic modules. Users can log in as they normally do, and their entire interaction with a database is encrypted automatically while in transit. Valuable data, flowing over the public Internet or through a corporate network, cannot be intercepted before reaching the intended user. A home-shopping network, for example, can guarantee that account details for credit card purchases remain private. This low-cost, high security solution operates in conjunction with digital certificates.

A digital certificate authenticates the ASE server to its clients. Public Key Infrastructure addresses usability and interoperability issues. Businesses that have adopted a PKI can use their certificate authority of choice for ASE server certificates. In addition, Sybase ASE supports the Kerberos secret key network authentication protocol. Kerberos is available in commercial products, and from hardware platform vendors as native libraries. A free implementation of this protocol is available from the Massachusetts Institute of Technology. Sybase ASE supports CyberSafe TrustBroker, native Kerberos libraries, and MIT Kerberos on a variety of platforms. The combination of SSL encryption and authentication using PKI and Kerberos implementations ensures comprehensive and consistent data security.

DIRECTORY INFORMATION MANAGEMENT

The Security and Directory Services Package offers a unified method for storing ASE directory information. Lightweight Directory Access Protocol (LDAP), Active Directory, and Pluggable Authentication Modules (PAM) support provide mechanisms to handle directory information that is used enterprise-wide.

Directory Services include infrastructure to access any of these services. With PAM support, ASE can be configured to validate a user through a stack of multiple authentication systems identified to ASE, without requiring any changes to the application. By integrating this authentication support into ASE, the cost and time associated with managing directory and security needs of multiple servers and systems are reduced.

The Security and Directory Services Option Features

Row-Level Security

- Protects information down to the level of individual records in a database.
- Permits the creation of mandatory rules that determine how users can access a database.
- Safeguards the data for different clients stored on the same database table.

Secure Sockets and PKI

- FIPS 140 certified algorithms encrypt network data while it's in transit between the client and the database server.
- Ensures client and server authentication by using PKI infrastructure.
- Embedded SSL encryption and PKI certificate protocols protect data from accidental disclosures or interception.

LDAP, Active Directory, PAM and Kerberos Services

- Controls directory and application-related information that is used enterprise-wide.
- Harmonizes directory information on multiple platforms through a single ASE/LDAP server.
- Pluggable Authentication Modules (PAM) supports access to multiple authentication services to validate users.

ADAPTIVE SERVER ENTERPRISE ENCRYPTION OPTION

Complimentary to the Security and Directory Services Option, Sybase offers the ASE Encryption Option that allows DBAs to protect sensitive data on disk while minimizing the performance impact and without exposing encryption keys.

Visit **www.sybase.com/ase** to learn more about the ASE Encryption Option. Together, ASE's security options provide an extremely high level of data protection.

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