

# Depository Services Made Convenient and Dependable



TATA CONSULTANCY SERVICES

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## | Profile

Central Depository Services (India) Limited (CDSL), promoted by The Stock Exchange, Mumbai (BSE) jointly with leading banks such as State Bank of India, Bank of India, Bank of Baroda, HDFC Bank, Standard Chartered Bank, Union Bank of India and Centurion Bank, was set up with the objective of providing convenient, dependable and secure depository services at an affordable cost to all market participants.

## | Business Situation

CDSL developed an online service easiest, that would enable investors to manage their demat accounts and issue delivery instructions in an efficient manner. However, access to sensitive information via electronic media entailed a huge security risk.

## | Solution

A Public Key Infrastructure (PKI) enabled solution was the answer to CDSL's security concerns. This technology ensured that CDSL's services are always secure and confidential for every entity involved with the depository.

## | Benefits

PKI enabling of the application at CDSL ensured authentication, confidentiality, data integrity and non-repudiation in the entire process.

PKI technology has helped CDSL provide its services in a convenient, dependable and secured environment.

## Need for an efficient mechanism

A Depository facilitates holding of securities in electronic form and enables securities transactions to be processed by a Depository Participant (DP) who, as an agent of the depository, offers services to investors. The DP provides the investor a statement of account at regular intervals that gives the details of the securities holdings and transactions.

Earlier, the depository system dealt with paper-based certificates. This process was prone to fake and counterfeit dealings. Moreover, investors had to travel to their DP's office to obtain updated account information and status of transactions. Every time an investor wanted to issue transaction instructions, he/she would have to physically be present to submit the relevant instruction slip(s) to the DP for further processing. The DP would have to verify the instructions and process them further. This process led to delivery and service hiccups.

*Each and every activity of CDSL stems from the essential reason behind forming this depository, i.e. to encourage India's individual investors to benefit from actively participating in a depository. Over 4700 issuers have admitted their securities (equities, bonds, debentures, commercial papers etc.), units of mutual funds, certificates of deposits etc. into the CDSL system, which functions as the central accounting and record keeping office for these securities.*

The need was to have an efficient and instantaneous transfer of securities. CDSL developed an online application, 'easiest' (electronic access to securities information and execution of secured transactions), that would enable investors to manage demat accounts and issue delivery instructions over the Net.

With shorter life cycles that made the process efficient, came to the fore issues on security. The nature of information handled by the CDSL's users on this online system demanded stringent security measures.

*'easiest' is the online service developed by CDSL to allow its clients, including Depository Participants, Beneficial Owners and Clearing Members, to access their demat accounts and issue instructions for transactions of securities through Internet.*

## Securing 'easiest'

CDSL's security concerns were addressed by a solution based on PKI technology. CDSL was made a Registration Authority (RA) as part of TCS-CA's Trust Network. With security infrastructure provided by TCS-CA, CDSL had to verify client credentials before clearing them for Digital Certificate issuance. The actual issuance and management of digital certificates however was handled by TCS-CA.

FormSigner, a tool designed to work in tandem with web-based applications to facilitate digital signing and verification of online forms, was integrated with 'easiest'. Its easy-to-use interface for digitally signing information ensured that the information exchange was valid and secure. By allowing users to clearly and legally establish their digital identities, this framework formed the basis for secure online communication for users.

### About eSecurity Group

The eSecurity Group in the Advanced Technology Centre (ATC) carries out research and development in several areas broadly related to secure communication, encryption and PKI (Public Key Infrastructure) technology. In addition to implementing the latest cryptographic algorithms such as Elliptic Curve Cryptography (ECC), engineers at ATC have developed an entire gamut of PKI related products and solutions. Foremost among these is a complete Public Key Infrastructure (PKI) suite called "Dhruvam", for the issuance of digital certificates, generation and verification of digital signatures, and other aspects of secure transactions.

TCS is a licensed Certifying Authority (CA) and is authorized by the Controller of Certifying Authorities (CCA), Government of India, to issue legally valid digital certificates. Through its Trust Network, TCS-CA provides PKI Services to individuals, companies and government organizations.

### About Tata Consultancy Services

Tata Consultancy Services (TCS) is among the leading global information technology consulting, services and business process outsourcing organizations. Pioneer of the flexible global delivery model for IT services that enables organizations to operate more efficiently and produce more value, TCS focuses on delivering technology led business solutions to its international customers across varied industries.

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*Restricted access only to users; tamper proof transactions; and non-repudiation led to a secure online environment that provided an irrefutable and almost impossible-to-forge evidence of involvement.*

### Process simplified

The registration process was made simple. The DP registered with 'easiest' and submitted his credentials to CDSL-RA for verification. Once his identity was authenticated, a request was sent to TCS-CA for issuing a digital certificate. This digital certificate was downloaded onto a hardware token owned by the DP. A similar registration procedure was adopted for the Beneficial Owners (BO) too, except that his credentials were submitted to and authenticated by the DP before being sent to the CDSL-RA for further processing. At the end of the registration process, each user owned a hardware token containing the user's digital certificate and cryptographic key pair used for signing and verification.

CDSL's users now login to 'easiest' to be able to view the updated demat account and transaction status online. This is convenient since it can be done from anywhere, anytime. In case of contingency, DP's may also set up transactions on behalf of investors, a feature of 'easiest' that is activated on request.

*TCS-CA's Managed PKI Services solution has succeeded in creating a convenient and secure system for CDSL's clients that addresses their most basic and advanced needs.*

### Responsible service for an enhanced user experience

The online system has succeeded in bringing securities' trading to the fingertips of investors. By replacing a trip to the DP's office with the click of a mouse, the system provides an enhanced customer experience to end-users. Latest information is brought to the investors in the shortest possible time, enabling them to make informed decisions. The seamless integration of security components with 'easiest' has ensured maximum security for end-users with the minimum hassles.

Thus, the implementation of the digital signature based solution at CDSL ensured that an authorized user initiated the transactions; the information exchange was tamper proof and users could not refute their involvement at a later stage. PKI technology has helped CDSL provide its services in a convenient, dependable and secured environment.

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