

Profile

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Entrust Is Firing on All Cylinders to Safeguard the Enterprise

Preface

Information Systems (IS) decision-makers charged with extending enterprise applications and information to customers, suppliers, partners, and employees are converging on digital certificates as the appropriate technology for identifying users and protecting the enterprise's information assets. Pioneering IS executives are already deploying Public Key Infrastructures (PKI) as cornerstone components of the enterprise's computing infrastructure. Planning for future applications of PKI in securing Information Technology (IT) assets and facilitating an increasingly interconnected Web world, decision-makers are retaining control and managing PKIs internally.

To meet current and future business requirements, decision-makers are turning to trusted suppliers for PKIs and the surrounding applications. One company, Entrust Technologies (Entrust), has already earned a reputation with the pioneers as a trusted supplier for digital certificates and internally managed PKIs. Like a powerful engine, the company is firing on all cylinders, with continuous technology investment to produce new solutions and rapid revenue growth while winning high praise from customers for responsiveness, technical prowess, and fast resolution of technical issues.

In this *Profile*, Aberdeen provides IS decision-makers with an overview of Entrust, including:

- Its market position and solutions;
- Its approach to providing digital certificate-based applications for users, both directly and through partnerships; and
- Its customers' experiences with the company's products.

Executive Summary

Entrust has established a leadership position as the pre-eminent supplier for IS decision-makers deploying internally managed PKIs. The company is delivering enterprise-class solutions for safeguarding network-based communications and access to applications and information.

The company places great emphasis on partnerships with technology suppliers, resulting in a variety of Entrust-secured applications surrounding Entrust's core offerings. Through tight-knit relationships with professional service suppliers, the company is dramatically expanding the pool of knowledgeable professionals available to assist users with developing and deploying Entrust PKIs and the surrounding business solutions.

Market Dominance

Entrust is the supplier of choice for IS organizations deploying and managing PKIs. Perceived as one of the most experienced suppliers of a technology still seen as leading-edge, Entrust has captured mindshare and earned trust among business-oriented IT executives in forward-thinking enterprises.

Nearly 800 customers, including financial service giants such as J.P. Morgan and Salomon Smith Barney, have adopted the company's products. The Canadian federal government and the provincial government of Ontario have selected Entrust as the supplier for all PKI solutions within the respective government entities.

Acknowledging the company's leadership position, more than 75 IT suppliers have established partnerships with Entrust, offering an impressive range of professional services and nearly 100 PKI-based solutions, which the company certifies through its *Entrust-Ready* program. Entrust-Ready is the company's designation for products that can access the Entrust/PKI and provide digital certificate services to users.

Now publicly held, Entrust (NASDAQ: ENTU) spun off from Nortel Networks in 1996. For the fourth quarter of 1998, the company reported revenues of \$15.0M with a net loss of \$0.8M. Since 1995, the company's revenues have grown more than 230% annually. As of December 31, 1998, the company's working capital was \$77.6M, a result of the company's August 1998 initial public offering.

Core Products

Entrust's product line includes a Certification Authority (CA) and a series of digital certificate-based products solving specific business problems (Figure 1).

Entrust's PKI Foundation

The foundation for all Entrust deployments includes a CA, a directory service, and administrative tools, collectively referred to as the *Entrust/PKI*.

The CA, *Entrust/Authority*, provides the core functions of the PKI, including:

- Signing of certificates;

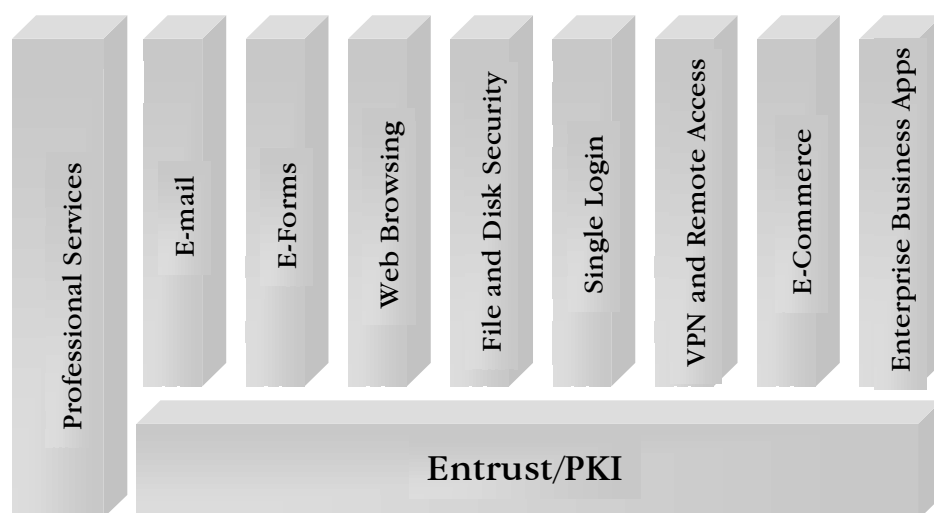
- Backup and recovery of users' private decryption keys;
- Generation of certificates for encryption and signature verification;
- Generation and publication of Certificate Revocation Lists (CRLs); and
- Cross-certification with other Entrust CAs, as well as CAs from Thawte Consulting and Baltimore Technologies.

The company deploys Entrust/Authority in parallel with a directory system, allowing users to choose between the included LDAP-compliant *Entrust/Directory* and solutions from ICL, Netscape, Novell, Siemens, and other suppliers. Public key certificates for encryption are stored in and managed from the directory. Entrust/Authority is supported on Sun Solaris, HP-UX, and Windows NT.

Entrust/Admin provides administrative tools enabling IS staff to add and delete users, revoke certificates, and perform key recovery operations. Entrust deploys the product on HP-UX, Solaris, Windows NT, Windows 95, or Windows 98 clients; and the product is configurable to meet the different requirements of security officers and directory and IS administrators — with each having different privileges.

The company deploys *Entrust/Entelligence* on users' workstations to provide security extensions and cryptographic services that are tightly integrated with the desktop operating system. The product allows users to log on to Entrust-Ready applications and obtain certificate-based encryption, decryption, signing, and verification services. Entrust/Entelligence is an underpinning for many of the applications that the company and its partners provide.

Figure 1: Entrust Surrounds the PKI with Business-Enabling Applications



Source: Aberdeen Group, March 1999

Business Applications

With the Entrust/PKI as a foundation, the company offers a suite of certificate-based applications delivering safe and secure business communications, including:

- E-Mail and Web browsing;
- File, disk and laptop security, and single login; and
- Virtual Private Networks (VPNs), remote access, and e-commerce transaction security.

E-Mail

Entrust offers users two e-mail solutions. The company deploys *Entrust/Express* on the desktop to deliver digital certificate services to Microsoft Exchange, Microsoft Outlook, and Qualcomm Eudora Pro. The product leverages the Entrust/PKI and Entrust/Entelligence, enabling users to automatically send encrypted compressed messages, insert digital signatures into messages, and ensure the integrity of message contents. Entrust/Express automatically decrypts and decompresses messages, verifies the integrity of messages, confirms the identity of the sender, and checks digital certificates against published CRLs.

The company deploys *Entrust/Unity* on the desktop to provide security services to Microsoft's Internet Explorer, Outlook'98 and Outlook Express, and Netscape Communicator. The product provides signing and verification services and support for encryption and decryption in the mail applications. Unlike Entrust/Express, the product offers no compression or CRL checking.

Both solutions can be deployed within the same enterprise, creating interoperable digital certificate-based e-mail services and eliminating the expense of standardizing on a single e-mail application.

The company also offers the *EntrustFile Toolkit*, with Application Programming Interfaces (APIs) for adding encryption, decryption, digital signatures, and key management capabilities to other mail-based applications, ensuring that users can leverage a PKI for other business applications throughout the enterprise. Novell and JetForm have used the APIs to make GroupWise and JetForm Entrust-Ready.

Web Browsing

For enterprises employing intranets and extranets, Entrust offers solutions for IS staff to safely deploy Web-based applications and information meeting the diverse needs of customers, suppliers, partners, and employees — and supporting multiple browsers and Web servers.

Entrust/Direct leverages the Entrust/PKI and Entrust/Entelligence for enterprises employing intranets and extranets. Using digital signatures, the product delivers mutual authentication between Windows-based Web browsers from Microsoft and Netscape and Web servers running on Windows NT, Sun Solaris, and HP-UX.

Entrust/Direct encrypts communications between browsers and servers; automatically checks CRLs to validate client and server-based digital certificates; and verifies the integrity of the information the browser receives from the Web server.

Entrust/Unity leverages the Entrust/PKI and Entrust/Entelligence for enterprises deploying intranets and extranets. The product enhances the native security capabilities of Microsoft Internet Explorer and Netscape Communicator, with Entrust digital certificates authenticating Secure Socket Layer links between browsers and Web servers and verifying the integrity of the information received from Web servers. Entrust/Unity does not support anonymous digital certificates and relies on the browser to verify server-based digital certificates through CRLs.

For enterprises deploying extranets to customers, suppliers, and partners — where the IS organization does not control or influence the configuration of the desktop system — *Entrust/Web Connector* distributes digital certificates to browsers without the need for any Entrust software on the desktop.

File, Disk, and Laptop Security

Entrust's *Enterprise Desktop Suite* combines a series of the company's desktop-based solutions in a single package, including Entrust/Entelligence, Entrust/Express, Entrust/Direct, *Entrust/ICE*, and *Entrust/TrueDelete*.

Entrust/ICE is the company's solution for safeguarding information stored on users' PCs. With Entrust/ICE, administrators and PC users can transparently encrypt and decrypt files or entire folders with a user's public and private keys. The product runs on Windows 95, Windows 98, and Windows NT.

Included with Entrust/ICE, Entrust/TrueDelete enables users to delete files from desktop systems with certainty that the files are not recoverable from the desktop's hard disk. When a user or application deletes files, the product immediately re-uses the disk space previously occupied by the files, ensuring that unauthorized users cannot recover confidential information from a desktop or laptop PC.

With Entrust/ICE, enterprises can leverage the Entrust/PKI to protect laptop computers even for mobile users, ensuring that the information on the laptop remains confidential if the system is lost or stolen.

With the Enterprise Desktop Suite, Entrust provides integration with Network Associates' McAfee VirusScan and Symantec's Norton AntiVirus products, automatically scanning encrypted files for viruses as the files are decrypted and opened.

Single Login

Enterprises deploying Entrust/Entelligence also gain the convenience of single login at no additional cost for Entrust-Ready applications relying on digital certificates for user credentials. Eliminating the need for application-specific user IDs

and passwords, IS staff can enable users to access all authorized Entrust-Ready applications after being validated through the Entrust login.

VPNs and Remote Access

Entrust offers several solutions for enterprises connecting branch offices to headquarters and remote access to customers, suppliers, partners, and employees.

Entrust/Access, in concert with the *Entrust/PKI* and *Entrust/Entelligence*, creates encrypted links over the Internet between remote users and the enterprise's Internet gateway. Remote users' digital certificates are the keys to encrypting the link and enabling strong authentication. Connecting to the Internet through an Internet Service Provider (ISP), remote users tie into the enterprise's IT infrastructure with *Entrust/Access*. Avoiding the need for dial-up lines and expensive modem banks, the IS organization delivers remote access capability to users through individual VPNs, ensuring strong authentication and confidentiality for all Internet-based communications.

The *Entrust/VPN Connector* issues digital certificates from the *Entrust/PKI* to firewalls, gateways, routers, and VPN solutions offered by other suppliers. Using only Entrust's X.509v3-compliant digital certificates, the *Entrust/VPN Connector* eliminates the need to install Entrust software on firewalls, gateways, routers, and VPNs.

For VPN suppliers, Entrust offers the *EntrustIPSec Negotiator Toolkit*. Developers use the tool kit to extend the key and certificate management capabilities of the *Entrust/PKI* to VPNs.

Electronic Commerce Transaction Security

The company also offers PKI-based solutions, allowing enterprises to engage in safe and secure e-commerce transactions relying on the Secure Electronic Transaction (SET) protocol. *Entrust/CommerceCA* is a CA for issuing and managing SET-compliant digital certificates, used by customers with SET-compliant "wallets" installed on desktop systems. The product is supported on Windows NT servers and interoperates with other SET-based CAs.

SET protects the customer's privacy, shielding credit card information from merchants even as merchants are assured of payments from financial institutions. SET also encrypts communications between customers and merchants and verifies the integrity of the communications.

Partnerships Expand Entrust's Value to the Enterprise

Expanding value for users, Entrust has a web of partnerships with other solution and professional service suppliers. Users are extending the Entrust infrastructure to support other business processes, exploiting Entrust's partnerships for:

- Directory services from ICL, Netscape, Novell, and Siemens;

- Electronic forms from JetForm and Shana;
- Firewalls and VPNs from Ascend, Axent, Check Point, Cisco, IRE, Lucent, Network Associates, Nortel, Red Creek, Shiva, TimeStep, and V-One;
- Network operating systems from Novell; and
- Relational databases from Oracle and Sybase.

Safeguarding Enterprise Business Applications

The company has also established partnerships with SAP and PeopleSoft, enabling users to safeguard business-critical applications and the related data. Developed by Entrust, the integration links have been certified by PeopleSoft and SAP, making Entrust's offering the first PKI certified by the two companies.

Professional Services Partnerships

Entrust has initiated certification programs for consultants from professional service suppliers, ensuring each partner's ability to effectively deploy and integrate Entrust's product family. Partnerships with professional service suppliers include Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers.

Expanding the Market for PKI-based Applications

Entrust has also embarked on several initiatives aimed at rapidly expanding the breadth of and market for PKI-based applications and services.

Entrust Worldwide is the company's new alliance program facilitating worldwide use of the Entrust/PKI. Alliance members include ABAecom, Bell Emergis/MPACT Immedia, BNL Multiservizi, Digital Signature Trust Co., Entrust Japan, SECOM, The Royal Mail, PricewaterhouseCoopers, and Deloitte & Touche — with additional members expected soon. Members are offering Entrust-based digital certificate services to businesses and individuals.

With the Entrust Worldwide program, the company is responding to users' desire to leverage the benefits of Entrust's PKI and the surrounding applications without the corresponding need to deploy and manage the infrastructure. Users can now obtain the benefits of the Entrust infrastructure on an outsourcing basis from program members. For IS decision-makers planning to deploy PKIs but placing low importance on internally managing the PKI, the program offers the ideal mix of capability and burden avoidance.

Leveraging the company's fervent adherence to Internet standards, Entrust has demonstrated interoperability with Baltimore Technologies' CA and with IBM's PKI client reference software ("Jonah"). The company's interoperability with Baltimore enables either supplier's CA to recognize and trust digital certificates issued by the other supplier's CA. Entrust demonstrated the ability for IBM's client software to request and receive digital certificates from the Entrust/PKI.

Entrust is also offering developers a tool kit, including APIs and support for multiple Internet standards and encryption algorithms. Both the tool kit and access to a fully functional PKI are available at no cost on Entrust's Web site, enabling application developers to build and test PKI-based solutions compatible with Entrust's PKI and PKIs from Baltimore, Microsoft, Netscape, and VeriSign.

Conclusions and Observations

Entrust is delivering on the value proposition of world-class security infrastructure for IS executives. The company's core competency, PKI, is complemented by a series of PKI-based applications, enabling forward-thinking decision-makers to select and deploy applications built on a common, scalable, and secure foundation. Relationships with e-commerce suppliers, enterprise business application suppliers, and other security suppliers enhance Entrust's value to the enterprise. And the list of Entrust partners continues to grow.

Users are leveraging the Entrust/PKI for multiple applications, reducing incremental investment and resource requirements for future applications, as well as maximizing the return on investment.

The company has grown very rapidly, deftly balancing the need for continued technology investment, meeting ongoing customer support obligations, and successfully deploying new customer implementations. Offering a leading-edge security infrastructure and complementary solutions, Entrust has established a well-respected brand. Continually earning users' respect, the company is successfully expanding beyond the financial services market to the pharmaceutical, energy, state and federal government, and large-scale manufacturing markets.

With scalable products solving the critical business problems for the enterprise, Entrust is delivering value for IS executives. Decision-makers struggling with the challenges of selecting and deploying PKIs to meet multiple current and future business requirements should learn from the experiences of the PKI pioneers and evaluate Entrust as a trusted supplier for safeguarding the enterprise.

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