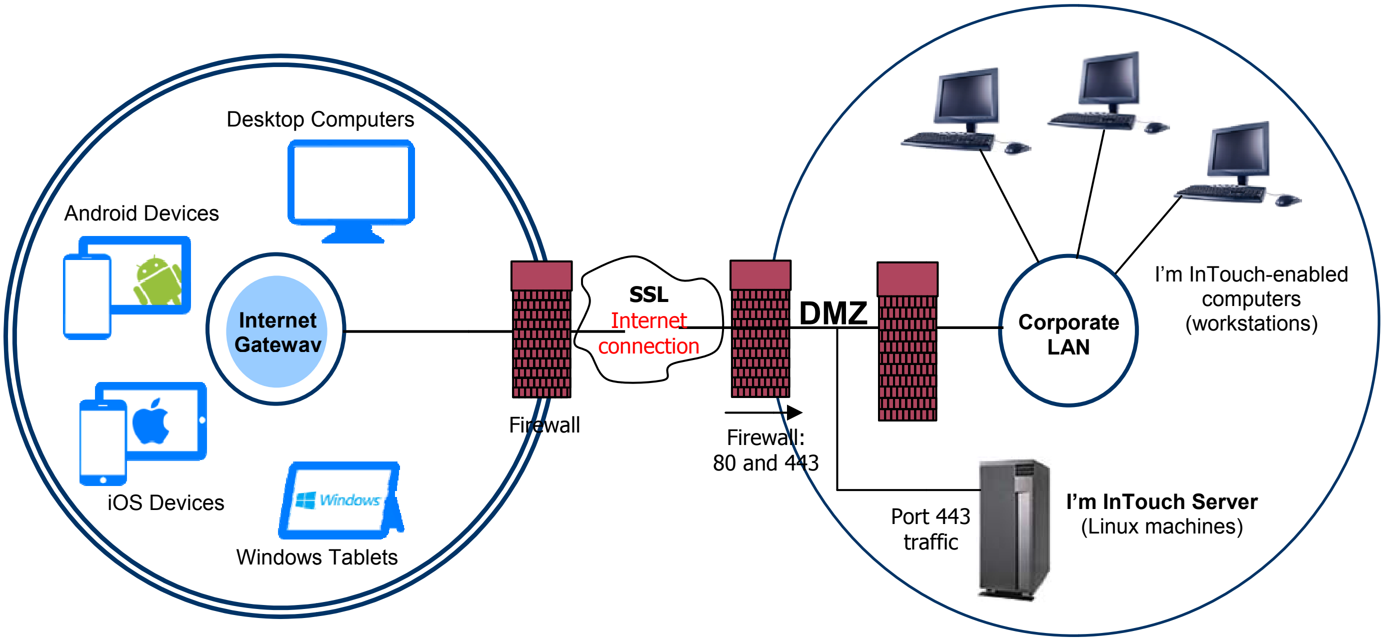
I'm InTouch™ Server Edition

Security White Paper

Introduction to I'm InTouch Server Edition (SE) Architecture

I'm InTouch – Server Edition (SE) – (US Patent #6928479, #6938176, #8234701) provides businesses a secure and cost-effective way to implement remote access for employees to work on their workstations anytime, anywhere.



Remote Computers
(Access Clients)

I'm InTouch-enabled computers
(Computers off the LAN can also become I'm InTouch-enabled)

Remote access is accomplished by allowing authorized users to remotely access their workstations on the network from virtually any device with an Internet connection and uses Secure Socket Layer (SSL) to provide encrypted access to business resources.

The service is comprised of a Server (or server farm depending on the load requirement) deployed within the DMZ of the business that runs the I'm InTouch Linux operating system and components. This Server is the communication gateway between the remote computers and the I'm InTouch-enabled computers. All the data is exchange authenticated, encrypted and transported through the I'm InTouch server.

The I'm InTouch-enabled computer maintains a SSL session with the I'm InTouch server by polling the server to see if any remote connection request has been made, using outbound HTTPS through port 443 on the firewall. As no port needs to be opened through the firewall (other than the usual Internet ports) you do not have to bypass or compromise your firewall and existing security policies of the business.

An employee can establishes a connection to the I'm InTouch server gateway remotely using virtually any Internet device. The server gateway, upon receiving an authenticated client request, will manage and forward the encrypted data request to the user's I'm InTouch-enabled computer. The request will be processed by the I'm InTouch-enabled computer and returned to the server gateway for delivery back to the remote computer. The I'm InTouch-enabled computer does not just implicitly trust the remote computer request during a session. The remote computer must specifically authenticate itself to the I'm InTouch-enabled computer via a password that is stored only on the I'm InTouch-enabled computer.

I'm InTouch maintains the workstation OS-level access controls which has already been setup by the business. When a user logins remotely, the user only has access to the individual workstation and is subject to the access controls already configured for that workstation. They will be restricted to those domains, file drives, etc. that have been assigned. I'm InTouch's design approach ensures that the introduction of a remote access solution does not change the access rights of the employees to the network. Existing business security policies set up at the employee or organizational level are maintained. Further restrictions, such as what time periods of the day will remote access be allowed, can be defined by the system administrator when creating the user accounts.

Mobile workers benefit from the flexibility to use virtually any device with an Internet connection and eliminate the need for pre-configured software on the local device (typical of a traditional IP Sec VPN solution) making I'm InTouch a versatile and easy-to-use service for end-users. Remote access also provides the assurance that in most cases, employees are able to get access through the firewall of their local network to their own workstations. Productivity gains, reduced customer response times and improved employee morale are just a few of the many benefits of implementing I'm InTouch.

I'm InTouch (SE) Server Security

Operating System

I'm InTouch (SE) is deployed on a server within the DMZ and installs with an optimized Linux operating system. All recent security patches and an optimized kernel are applied. No port needs to be opened through the firewall (other than the usual Internet ports 80 & 443), maintaining the existing security policies of the business. The server runs Apache as the web server.

Encrypted Transport using Secure Sockets Layer (SSL)

Protection of the confidential business data is enforced by the utilization of the SSL HTTPS protocol. All traffic between the remote computer, server gateway, and the I'm InTouch-enabled computer, including screen images and file transfer are protected with the end-to-end SSL encryption.

“Wake-up” server architecture (US Patent #8234701)

This patent-protected feature allows employees to remotely power-up their computers. Employees can choose to “Shut Down” their computers when leaving the office to conform to their corporate security or environmental policy.

Dual Authentication

The purpose of authentication is to ensure that the identities of the server gateway, the remote computer and the I’m InTouch-enabled computer are verified. I’m InTouch deploys a number of authentication processes to ensure that data exchange is permitted among trusted sources only.

During a remote session the server gateway must first authenticate itself to the remote computer by supplying a digital certificate, issued by a trusted authority.

After knowing that the server gateway is a trusted source, the user inputs the Computer Name (selected by the user during the installation of the I’m InTouch-enabling software) that can contain up to 64 characters of both letters and numbers. Long and complex Computer Names naturally provide stronger protection. The server gateway checks to see if this is a valid Computer Name and that this workstation is currently on and running the I’m InTouch software, thereby being “registered” or polling with the server gateway.

The server gateway then passes a further authentication request to the I’m InTouch-enabled computer. Authentication is in the form of a login name and password that are stored only on the I’m InTouch-enabled computer and managed by its owner. The login name can contain up to 254 characters and the password can have up to 12 case-sensitive alphanumeric characters. This login name and password are encrypted and will not be seen on the server gateway.

Ongoing data exchange between the remote computer and the I’m InTouch-enabled computer is encrypted and is managed through the server gateway.

The system administrator can further enhance the end-to end authentication by constraining remote users to login only from a remote computer that has installed a pre-assigned digital certificate, issued to the user by the administrator.

Security Features of the I’m InTouch remote access system

To be remotely accessed, authorized computer must be I’m InTouch-enabled. After the system administrator creates a user account, the user will receive an activation email, you are advised to use the computer that will become I’m InTouch-enabled to receive the activation email. Follow the simple instructions on the email to download and install the I’m InTouch enabling software. Installation requires physical access to the computer.

Authentication to the I'm InTouch-enabled computer requires a User Login Name and Password that are stored only at the I'm InTouch-enabled computer, eliminating the risk of passwords being stolen at the server gateway during an unlikely event of a system-wide hacker attack. Local management of the authentication passwords at the I'm InTouch-enabled computers allows frequent updates by the end-users which is a good security practice.

To help protecting against dictionary attacks, I'm InTouch limits the number of times any user can attempt consecutively to login. By default, after three unsuccessful login attempts, access to the I'm InTouch-enabled computer is disabled for five minutes.

To minimize the risk associated with users leaving a remote session on a public computer without logging out, inactivity time-outs are applied. After a user-defined time period of inactivity on the SSL session, the I'm InTouch-enabled computer will automatically terminate the session.

To provide assurance to the owner of the I'm InTouch-enabled computer that nobody can silently access his/her computer, a notice is displayed on the computer's screen whenever a remote computer establishes a connection to the I'm InTouch-enabled computer. In addition, users can always check the log to view the history of their last login. Both of these tools help to assure end-users that I'm InTouch is secure and safe to use.

System Administration and Authorization Controls

I'm InTouch provides the system administrator with the required authorization tools to ensure the administrator can assign different remote access privileges to different employees. The administrator can also set restrictions on how and when the user can access the system and what features they will be able to utilize. The robust system reporting allows full monitoring for both security auditing and accounting purposes.

I'm InTouch administration can be undertaken directly at the server and/or restricted to the URL defined by the administrator during the Server installation. The administrator will assign his/her own login name and password for the administrator account. Authentication with the Server while logging in from a remote computer is achieved by using an X509 digital certificate installed by the Administrator. Accordingly, all remote administration activities will be protected from disclosure by SSL encryption.

Only the administrator can create new user accounts. After creating a new user account and its specific access rights, the user will be provided with an activation email with instructions to download/install the I'm InTouch enabling software. During installation, the user will set his/her personal login name and password to be used as authentication when starting a remote session. These are stored only on the I'm InTouch-enabled computer. Installation requires physical access to the computer.

At any time, the administrator has the ability to remove user account from the server. Any attempt by a user to login to an inactive account will be denied, as the remote computer will not be able to "register" or communicate with the server gateway.

The ability to set remote access restrictions on each user account is crucial in ensuring the business security policies that have already been established at the employee or organization level are upheld. Restrictions that can be configured include allowing or disallowing file transfer, access to the complete desktop, access to email only, and whether a user has the right to invite guest users to his/her I'm InTouch-enabled computer to participate an online training or presentation. For file management restrictions, the administrator can allow access to all file system rights of the I'm InTouch-enabled computer or limit file access to specific folders on the network. Day of week and time of day access restrictions can also be defined as part of the remote access policy management. Mandating users to login only from a remote computer that has been installed with a pre-assigned digital certificate is an optional feature which can provide enhanced endpoint protection.

Remote Access Usage Monitoring and Auditing

There are always needs to monitor remote access usage for security purposes and to measure the return on investment of the I'm InTouch implementation. The I'm InTouch administration console allows monitoring of individual user accounts across a selected date range and also provides a quick list view of all users and their usage.

Account level monitoring displays details such as the total number of remote sessions, total hours and minutes of usage, average session length, last login attempt and a view of what features are most often used. A list view of all accounts shows whether a user session is active, number of logins in the date range and the average remote session length. These reports provide analysis which can help to spot unusual usage patterns.

Detailed connection logs are maintained at the I'm InTouch-enabled computer. They help the system administrator in obtaining specific details on the remote sessions, including the IP address of the remote computers and the specific time of logins and logouts.

Conclusion

In conclusion, I'm InTouch is an affordable and secure remote access solution that can be easily integrated into a company's existing network and security architecture. It provides protective processes and the necessary tools to ensure that business resources are always safe. These include thorough authentication of all devices and users involved in a remote session. Extensive administrative tools and options let the system administrator manage users and their access rights effectively. Auditing tools ensure the business can stay on top of user activities for both security and measuring return on investment purposes. All of these are delivered within a secure system architecture that does not require any change to users' existing business network configurations. And most importantly all data exchange is safe, secure and encrypted.