

Solution Brief

Securing and Assuring Citrix, Microsoft Terminal Services and Other Thin Client Applications with Juniper Networks Secure Access SSL VPN

Thin Client Computing (TCC) is a technology that involves executing an application on a centrally managed server while displaying the application on a client system. Two of the most common TCC technologies are:

- Microsoft's Remote Display Protocol (RDP) which is used by Microsoft Windows Terminal Services (WTS) products and other vendors products based on WTS.
- Citrix's Independent Computing Architecture (ICA) which is utilized by Citrix's Presentation Server product (formerly known as MetaFrame)

Other TCC technologies include Unix's X-Windows system and Virtual Network Computing (VNC) products¹.

Securing and Assuring Access to Thin Client Computing Applications

Juniper's Secure Access SSL VPN can secure and assure access to any application and has the industry's best support for Thin Client Computing applications. Juniper provides several different access method options for providing secure access to TCC applications in order to meet administrators' different usage requirements. These access methods include:

Core Clientless Access

Core Access uses Juniper's Content Intermediation Engine, which intermediates SSL traffic and native protocols to provide clientless access to complex web-based enterprise applications, Java applications, file shares, and terminal hosts². Core Access can be used when administrators require providing Java-based TCC application access to the broadest possible set of devices, including kiosks and other non-managed devices, and to users without extended user privileges.

Embedded Terminal Services Access

Juniper's embedded terminal services access intermediates traffic to Citrix Presentation Servers or MS Windows Terminal Servers utilizing either existing ICA or RDP clients, or dynamically delivering the appropriate client. Terminal Service access allows administrators to centralize all of their access control policies in a single platform by enabling administrators to define policies within their SSL VPN for provisioning desktop or published applications access. Because it proxies only RDP or ICA traffic, Terminal Services access can be used when administrators require providing access to less trusted devices or users without provisioning a full network tunnel into the LAN.

Secure Application Manager (SAM)

SAM is a dynamically delivered lightweight agent that intermediates remote communication with internal client/server applications over SSL². Because it proxies only administrator defined application traffic, SAM can be used when administrators require providing client/server application access to less trusted devices or users without provisioning a full network tunnel into the LAN. SAM comes in a Windows version for Windows platform deployments and a Java version for cross-platform support.

Network Connect

Network Connect (NC) is a dynamically delivered lightweight agent that provides next-generation layer 3 network access to Windows, Mac and Linux platforms². Network Connect is significantly easier to deploy and manage than IP Sec VPN access and can secure and assure access to all TCC applications.

Juniper's access methods support the following Thin Client Computing applications:

Juniper Access Method	Supported Thin Client Computing Applications
Core Clientless Access Services	<ul style="list-style-type: none"> • Java RDP clients for Windows Terminal Server deployments • Java ICA client Citrix Presentation Server with or without Web Interface • Other Java applet clients for TCC applications such as 3270 or 5250
Embedded Terminal Services Access	<ul style="list-style-type: none"> • Microsoft Windows Terminal Server • Citrix Presentation Server
Java Secure Application Manager	<ul style="list-style-type: none"> • Win32 clients Windows Terminal Server deployments • Java ICA client Citrix Presentation Server with or without Web Interface • Win32³, Mac, Linux ICA clients Citrix Presentation Server with or without Web Interface
Windows Secure Application Manager	<ul style="list-style-type: none"> • Win32 clients Windows Terminal Server • Java ICA client Citrix Presentation Server with or without Web Interface • Win32 client³ Citrix Presentation Server with or without Web Interface
Network Connect	<ul style="list-style-type: none"> • All TCC applications

Benefits of Using Juniper for Thin Client Computing Application Access

Juniper's Secure Access SSL VPN is the best way to secure and assure access to Thin Client Computing applications providing the following benefits:

- Best-in-class support for all TCC applications
 - Juniper's multiple access technologies can support all Thin Client computing applications in virtually any customer deployment scenario from provisioning of Java clients to full Windows, Linux and Mac clients without requiring any changes to the existing TCC deployment.
 - Juniper offers market-leading value-added functionality for Thin Client Computing application access including optimized configuration, single sign-on and dynamic and intelligent client delivery where Secure Access will utilize an existing client if on an endpoint or provision one dynamically if it is not present.
 - With thousands of deployments worldwide in which Juniper has secured Citrix, WTS and other TCC products, enterprises can be certain that Juniper can preserve their investment in their existing TCC infrastructure as well as give them the flexibility to upgrade or change that infrastructure in the future were this to become a requirement.
- Separation of application and secure access infrastructure
 - Because it can provide access to all applications including any Thin Client application, Juniper's Secure Access SSL VPN enables Enterprises to separate their security and networking infrastructure from their application infrastructure. This allows Enterprises to independently scale and manage their thin client and security infrastructure.
 - This separation also provides Administrators with the flexibility to support Thin Client computing products from multiple vendors without tying themselves to one vendor allowing Enterprises to change their Thin Client applications without requiring a potentially costly change in secure access infrastructure and vice versa.
- Clientless access to web, file and Java applications
 - Many enterprises and enterprise software vendors are increasingly deploying applications using web technologies instead of client-server applications provisioned using thin client computing technology in order to reduce costs, enable universal deployment and centralize application management. Juniper's market-leading Core Clientless access technology and best-in-class access to thin client computing applications enables Enterprises to seamlessly support this trend without any changes to a company's secure access infrastructure.
 - Providing secure clientless access to web, file and Java applications significantly increases business productivity by allowing users to access important applications anytime, anywhere. Clientless access technology is a core requirement for SSL VPN's and no Enterprise should select a SSL VPN without it.
- Single platform for all secure extended enterprise application access.
 - Unlike security gateways from Thin Client Computing vendors, Juniper's Secure Access SSL VPN can secure and assure access to all extended enterprise applications utilizing multiple access technologies. This allows Enterprises to consolidate their access infrastructure into a single platform thereby reducing the need for multiple separate security gateways for providing Citrix/Terminal Services, IP Sec, Web and other application access and saving significant capital, administrative and support costs.
- Best end-to-end security functionality in the industry.
 - As the market leader in SSL VPN technology since the inception of the industry and a leader in networking and security, Juniper provides administrators with unmatched security features critical to securing access to applications including best-in class authentication, granular access control, auditing, threat control, and endpoint security technologies.

¹ Terminal Emulation technologies that provide access to text-based platforms such as Telnet, 3270 (IBM Mainframe), and 5250 (IBM Midrange) are sometimes considered Thin Client Computing technologies. Juniper Networks Secure Access SSL VPN can secure and assure clientless access to these technologies as well.

² For more information on Juniper's Core Clientless Access Secure Application Manager or Network Connect technologies, see the datasheets located on <http://www.juniper.net/products/ssl/dsheet/>.

³ Citrix Win32 client support includes support for the Program Neighborhood, Program Neighborhood agent and the web agent versions.



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