

Pragma Fortress SSH Client Suite & Cisco Networking Devices

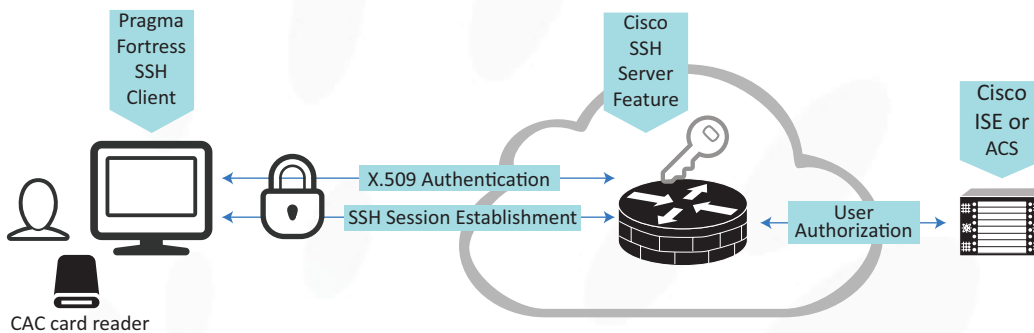
RFC 6187 2-Factor Authentication & Encrypted Connectivity from Windows

Background - Pragma Clients & Cisco SSH

To combat growing cybersecurity threats, enterprises are taking action to strengthen device access across their critical IT infrastructure. Two-factor authentication can significantly reduce the risk of adversaries penetrating strategic networks and systems. This approach requires the use of a Personal Identity Verification (PIV) card or Common Access Card (CAC). The Internet Engineering Task Force (IETF) authored RFC 6187 to specify how SSH 2-factor authentication should work with x509 certificates, which is now mandated by the United States government to secure access across critical government IT infrastructure. Cisco Systems and Pragma Systems collaborated to add RFC 6187 specified protocols in key SSH and Cisco PKI deployments so that customers using government-issued PIV or CAC cards in Pragma clients can directly log into Cisco routers and switches with 2-factor authentication and perform critical network management tasks.

Pragma Fortress SSH Client Suite

Pragma Fortress SSH Client Suite contains industrial grade Windows SSH/SFTP/SCP graphical & command line clients for encrypting and connecting to highly secure environments like Cisco networking devices and enterprise servers running SSH/SFTP/SCP. The clients support 2-factor authentication and are RFC 6187 compliant with full smart card support for intrusion protection and to combat cybersecurity threats posed for remote access.



Company Overview:

Pragma Systems is a Cisco Solutions Partner & provides highly secure encrypted software to build a secure network environment for an enterprise. Pragma provides SSH server and client technology to enable Windows machines to connect to other Windows and non-Windows based systems. A few of Pragma Fortress SSH Client's benefits:

- RFC 6187 compliant by using 2-factor authentication with PIV/CAC cards for secure logons to eliminate network intrusion, unauthorized access and hacking
- Seamlessly transfer files and deliver applications from servers to clients using SFTP (Secure File Transfer Protocol) and SCP (Secure Copy)
- Save money and time by remotely managing and configuring access to information across networks for the purposes of troubleshooting, process management and task automation

At a Glance

Two-factor RFC 6187 SSH is a **key requirement** for US DoD and Federal Government departments to avoid the hacking & unauthorized access going around from foreign countries and intruders. Pragma's Fortress SSH has received the US Army Certificate of Networkiness (CoN).



Two-factor authentication can significantly reduce the risk of adversaries penetrating strategic networks and systems. This approach requires the use of a Personal Identity Verification (PIV) card or Common Access Card (CAC). Utilizing RFC 6187 compliant Pragma Fortress SSH Client and government-issued PIV/CAC cards with Cisco networking devices fulfills two-factor authentication for the security and integrity of network access.

- Fulfills government required security authentication. RFC 6187 compliant
- 2-factor authentication with CAC/PIV cards
- Graphical & Console SSH client
- Graphical & Console SFTP client
- Console SCP client
- Process & task management tools

Certifications

- FIPS 140-2
- Interoperability certification by Cisco
- US Army Certificate of Networkiness
- US Army TIC Lab, US DoD UCAPL
- Certified for Windows 7 and 8.1



Fortress SSH Client Suite

Anytime, anywhere connectivity
for Windows environments.



In order to use the RFC 6187 compliant features of the 2-factor authentication, you will need:

- Pragma Fortress CL SSH Client (version 5, build 10, rev 292 or later)
- You can purchase or download a 14-day trial from <http://www.pragmasys.com/ssh-client/download>
- Department of Defense (DoD) CA certificates
**Note for DoD customers: You can obtain the CA certificate here: <http://dodpki.c3pki.chamb.disa.mil/rootca.html>
- Cisco Identity Services Engine (ISE) 2.0 or Cisco Secure Access Control Server (ACS)
- DoD CAC card or PIV card for civilian agencies
- Smartcard reader

Cisco® product families that support the X.509v3 certificates for the SSH authentication

Product Family	Cisco IOS Software Release
ISR-4000 Series	IOS XE 3.16.2S or later
ASR-1000 Series	IOS XE 3.16.2S or later
ASR-900 Series	IOS 15.5(3)S or later
ISR-1900, 2900, or 3900 Series	IOS 15.5(3)M2 or later
Catalyst® 2K, 3K, and 4K Series	IOS 15.2(4)E1 or later
Catalyst® 3850 & 3650 Series	IOS XE 16.1.2 or later
Nexus 9000 Series	NX-OS 7.0(3)I5 (1)
Catalyst® 6800 Series	IOS 15.4(1)SY1
Nexus 7000 Series	NX-OS 8.0(1)

Pragma Fortress SSH Client Suite Features:

- **Multiple server platform support** – Performs best with Pragma Fortress SSH Server, and is compatible with server software from other vendors like Solaris, Linux, HP-UX, AIX, VMS and Macintosh
- **Supports port forwarding** – Enables secure transmission by any TCP/IP application by passing data over a secure SSH session with only minimal changes to the application
- **Session logging** – Optionally logs session output to a text file
- **Scripting** – Console clients use script files to automate logon & session operation
- **Handles multiple server configurations** – No need to reconfigure each client
- **Gateway capability** – Console clients can be used inside an SSH session to connect to another SSH server
- **Authentication** – CAC/PIV card, Certificate, password, & Windows GSS-API Kerberos and NTLM Active Directory authentication

Customer Examples:

US Internal Revenue Service, US Navy, US Army, US Air Force, ASRC -- Federal Primus, F.D.I.C., Dept. of Veterans Affairs, SCAQMD, National Institutes for Health (NIH), US Dept. of Commerce, Sandia National Laboratories, Social Security Administration, State of Washington Dept. of Labor, South Carolina Dept. of Natural Resources

Specifications

- RFC 6187 compliant supporting 2-factor authentication
- AES 256, 192, 128, 3DES, FIPS certified cryptographic modules
- Runs in Windows Server 2016/2012R2 /2012/2008R2/2008/2003 and Windows 10/8.1/8/7/Vista/XP
- 32-bit & 64-bit binaries



How to Order

Visit Pragma's web site at: <http://www.pragmasys.com> to order online or to download a FREE fully functional evaluation copy.

To order from USA call: **1-800-224-1675**

International sales call: **1-512-219-7270**

Contact Pragma for pricing and quantity discount information.

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