

*Whitepaper*

## **Telemote**

### **- Next Gen Secure Systems Administration Platform for Windows/Linux/Cisco**

Pragma Systems, Inc.

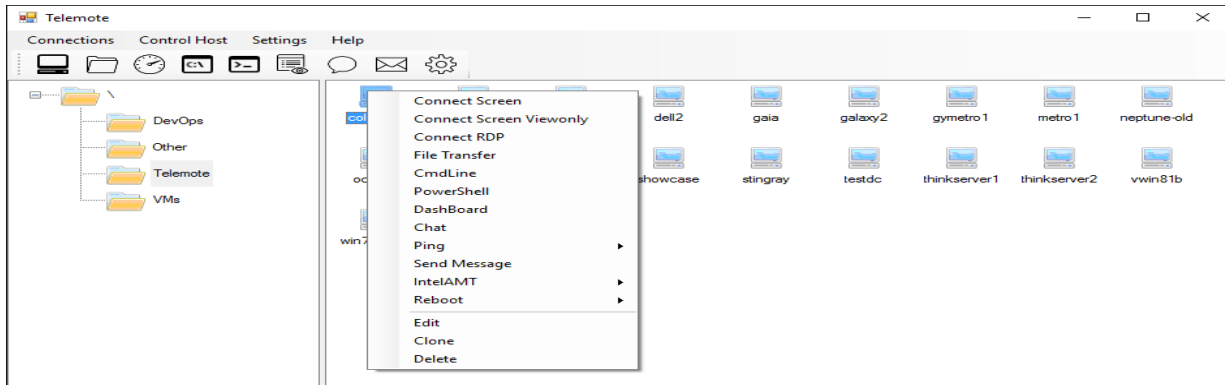
[www.pragmasys.com](http://www.pragmasys.com)

<https://www.pragmasys.com/telemote>

December 27, 2021

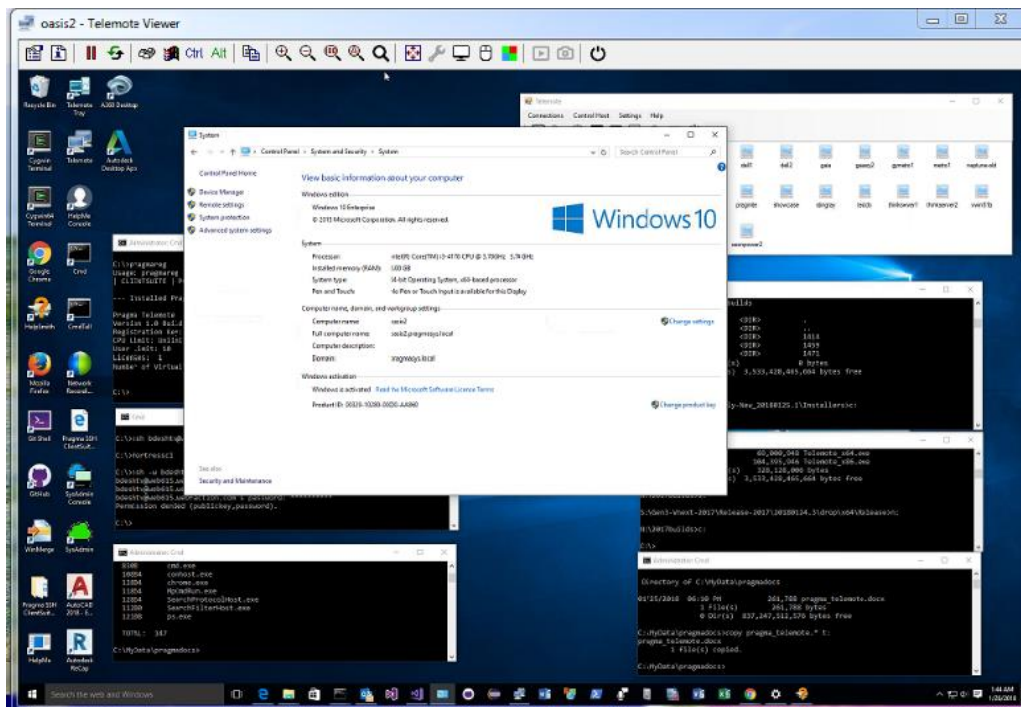
## Introduction

Systems and Network management continues to be a challenge in the age of cloud based computing, cyber security break-ins and the ever evolving challenges of threat management. Telemote is a comprehensive systems management platform built to solve these problems for IT professionals - one new generation platform to manage all your diverse systems with a single integrated solution. Telemote is built with input from systems administrators and is made for systems administrators. It lets you discover all of your systems with a single-click and then right click to run any of the verbs (or systems administrator's key functions) to manage these systems. All communications are run over a secure and FIPS certified SSH transport layer, which is certified by the United States government, US Army and Department of Defense to their highest standards. Multi-factor authentication is fully supported.



## Basic Architecture

Telemote is a full featured next generation systems administration package that is highly secure and built with a high security transport layer for all exchange of data and systems wide communications. It is primarily targeted to manage Windows systems. But, Telemote can also manage Linux systems and Cisco routers & network devices using SSH, SFTP and SCP.

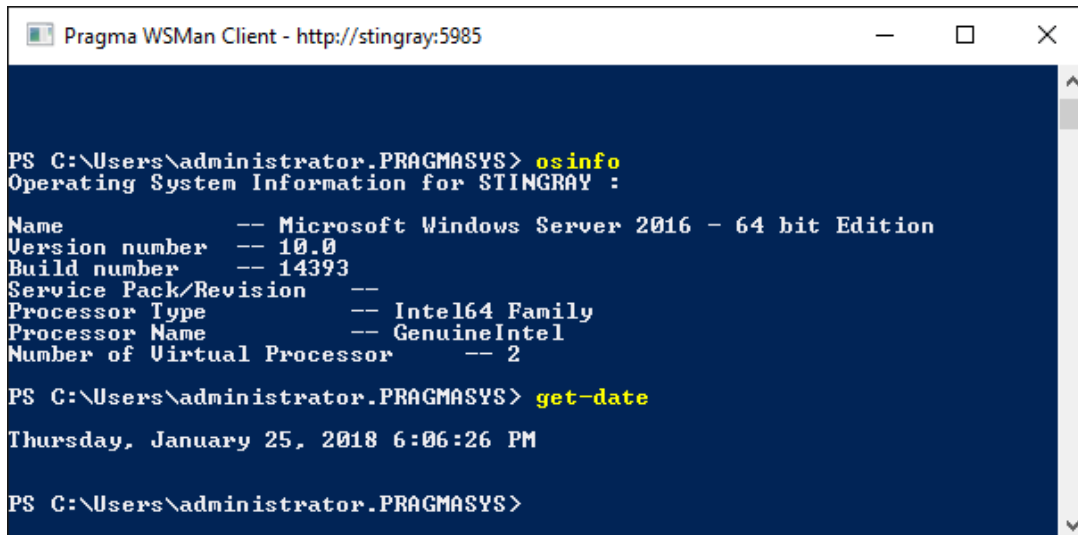


Telemote’s core is a set of verbs. A “verb” means a sysadmin function, like “access a remote computer’s screen”. Telemote provides these core verbs, which are well developed functions needed to access or manage a system, particularly Windows systems:

- Fast Screen Access (any resolution, multi-monitor support). We use the extremely efficient Telemote protocol which avoids many limitations of RDP
- Screen sharing abilities to diagnose problems or assist in user support
- Dashboard to monitor core system parameters
- Secure File Transfer
- Powershell to remote machines with full interactive capabilities
- SSH Command line Access
- Microsoft RDP access to systems (if needed or when Telemote not installed)
- IntelAMT BIOS level access

Telemote’s PowerShell remote feature deserves additional explanation, as it is an industry’s first of its kind. Telemote includes a WinRM server and client to enhance PowerShell remote abilities. WinRM (Windows Remote Management) is Microsoft’s implementation of WSMAN (Web Services Management Protocol), a Simple Object Access Protocol (SOAP), that is firewall friendly and allows systems management across different operating systems. WinRM, WSMAN and PowerShell are core elements of Windows systems management and are part of all Windows systems. Powershell and its remote execution are built with WinRM API & WSMAN. However, PowerShell remote shipped with Windows cannot run interactive shell programs, like vi or edit editors. Telemote eliminates these critical limitations.

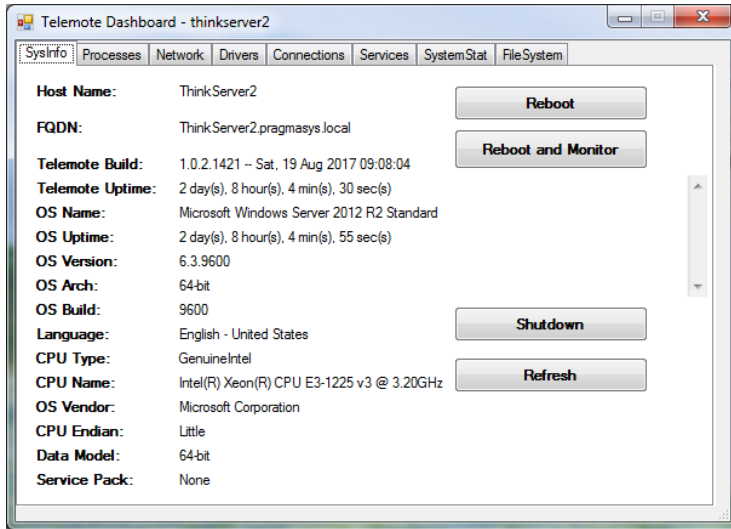
With Telemote, Powershell remote sessions become fully interactive, bringing the full power of Powershell on remote systems. A sysadmin can edit a file or script in a remote system using Powershell, with Telemote. PowerShell's full power is unleashed with Telemote.



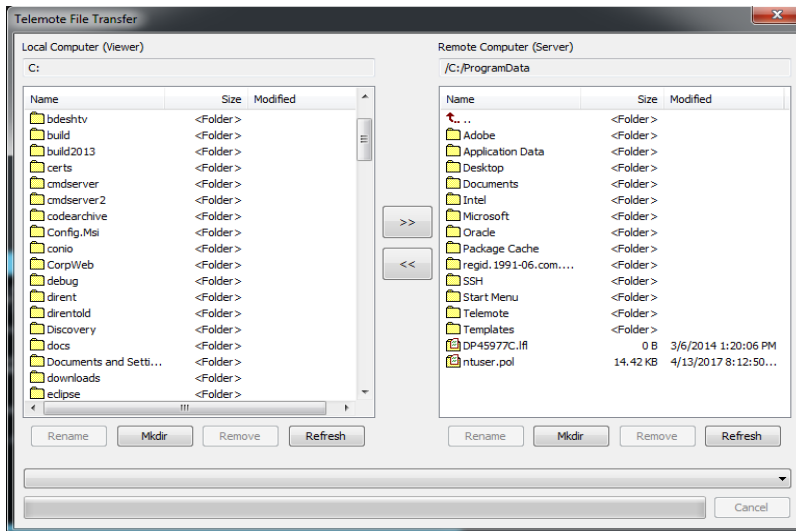
```
PS C:\Users\administrator.PRAGMASYS> osinfo
Operating System Information for STINGRAY :
Name           -- Microsoft Windows Server 2016 - 64 bit Edition
Version number -- 10.0
Build number   -- 14393
Service Pack/Revision --
Processor Type -- Intel64 Family
Processor Name -- GenuineIntel
Number of Virtual Processor -- 2

PS C:\Users\administrator.PRAGMASYS> get-date
Thursday, January 25, 2018 6:06:26 PM

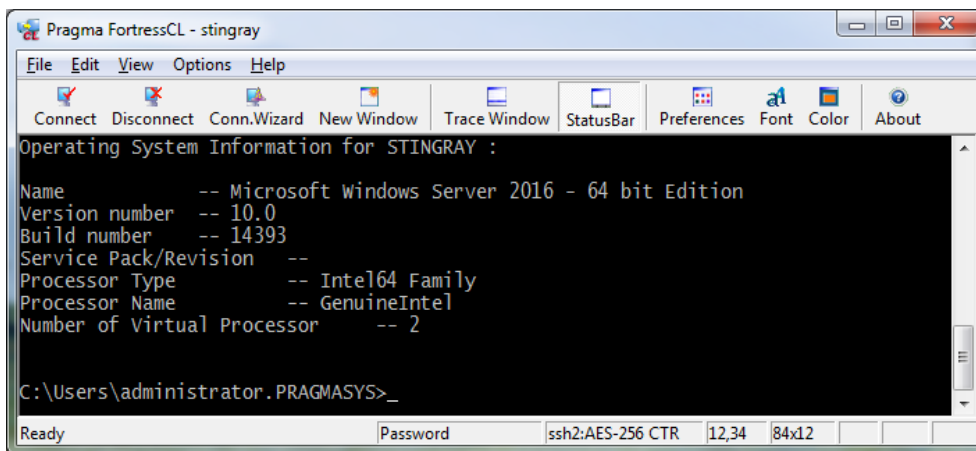
PS C:\Users\administrator.PRAGMASYS>
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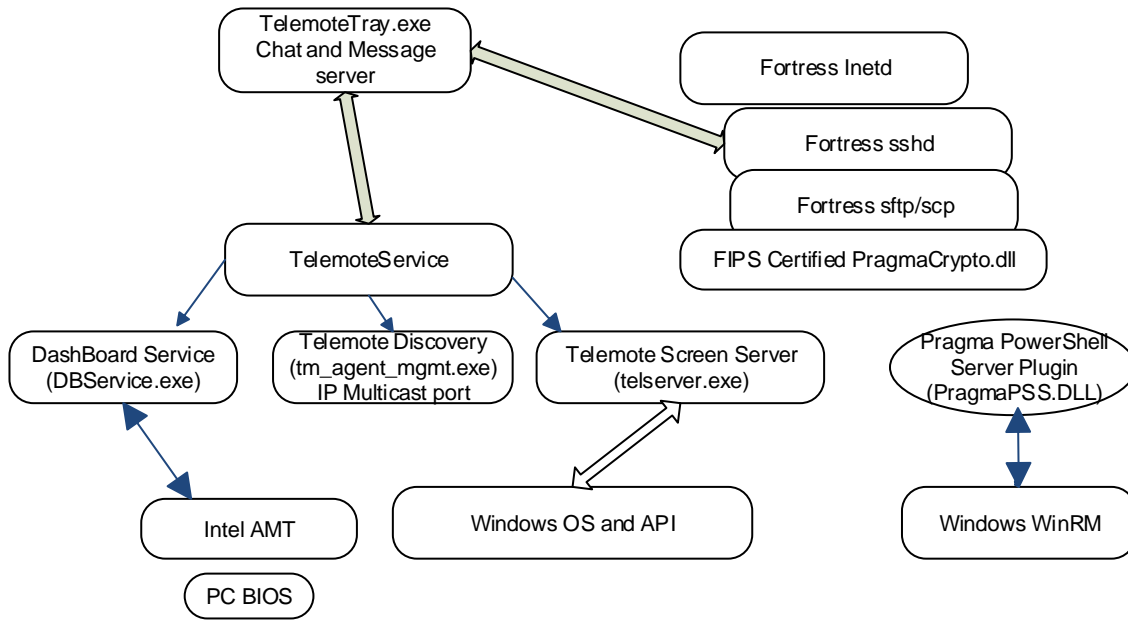
Telemote Dashboard help manage processes, system services and reboot systems



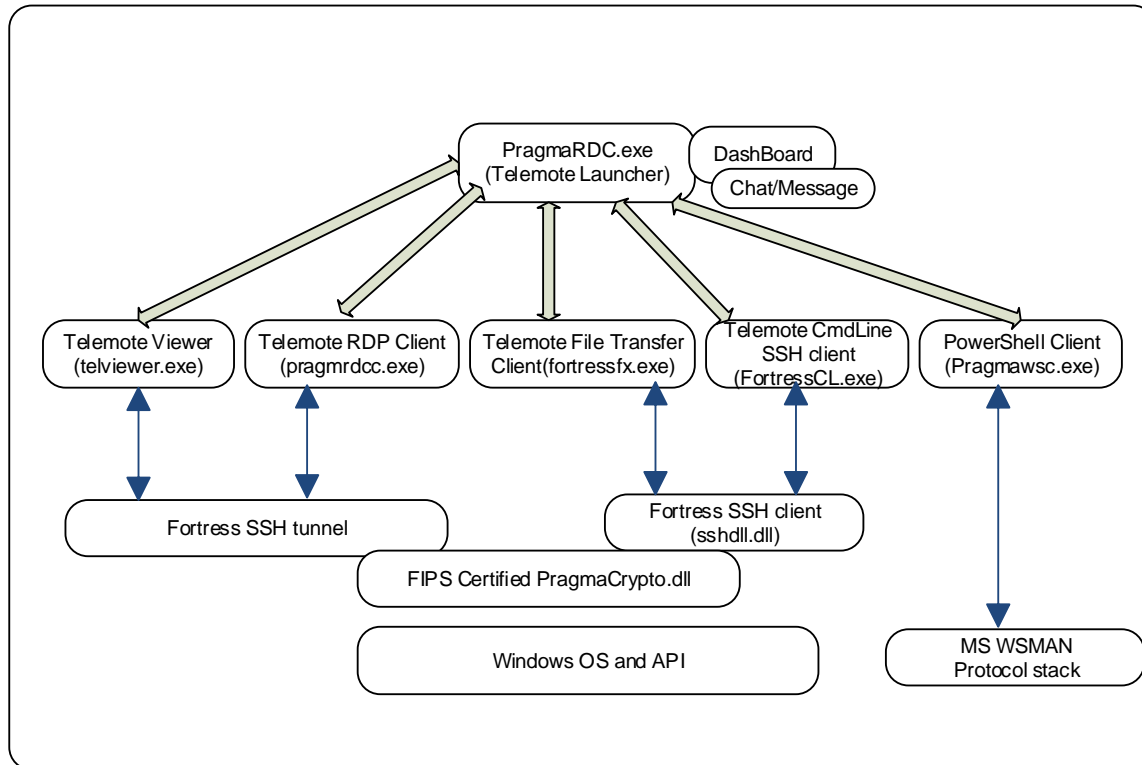
Telemote file transfer is available within a remote screen session



Telemote provides SSH command line



## Telemote Server Architecture



## Telemote Viewer Architecture

Telemote is available in “Telemote Server” and “Telemote Viewer” packages. Telemote runs in all current Windows operating systems and has full support for Windows 10 and Windows Server 2016.

## Key Use Cases

- **Healthcare IT:** McKesson Change Healthcare bundles Telemote in Medical Imaging Stations for Radiology and Cardiology that it ships to hospitals worldwide. Support staff from a McKesson central site then assists medical staff remotely with medical application use, configuration changes or file patch updates. Very high-resolution monitor support, use of six monitors simultaneously, advanced video adapter support, product stability, speed and a rich feature set were the key reasons Telemote has been included as the standard sysadmin tool for McKesson Change Healthcare.
- **CyberSecurity:** Bangladesh National Data Center is testing Telemote for systems management, 2-factor authentication, RFC 6187 enabled secure access and managing the network backbones consisting of Cisco devices. They are also testing it to use in their Tier 3 and Tier 4 national data centers for access control of national critical infrastructure.
- **Windows IT & Data Center Management:** Telemote has all core and advanced features to securely manage a Windows network whether it is in a Data Center, large enterprise, medium size department or a branch office. With its dual protocol support of Telemote screen and Microsoft RDP, it can work and adapt to any existing Windows installation. With full interactive PowerShell remote session support in Telemote, any PowerShell script or configuration editing tasks can be performed using Windows PowerShell. With Telemote command line tools, task automation can be scripted to run securely and efficiently. Windows IT Administrators are a prime user group of Telemote.
- **Cisco network:** With built in RFC 6187 compliant SSH and SCP support, Telemote is very effective in managing Cisco IOS network devices, routers and switches. Telemote allows Cisco devices to be manually added by its IP address or hostname. Cisco includes SSH and SCP servers in its IOS operating systems. Telemote's SSH and SCP are fully tested and certified by Cisco to interoperate and use in production network and have been UC APL approved for use in US DoD and critical infrastructure protection projects.

## Why another Sysadmin Tool?

Many sysadmin tools used today were not built for the security concerns that have emerged over the years for modern IT networks. Additionally, core features like fast secure file transfer, dashboard and PowerShell remote session were not available or integration with key systems was poor. Telemote changes all that. Telemote is a superior sysadmin tool due to the following key distinguishing features and capabilities:

**Focus on security:** It is built with Pragma's FIPS and US Army Certified SSH communications transport and cryptography. Competing products do not use SSH although it is considered the most reliable standard of systems management. Telemote uses Pragma's widely adopted SSH and SFTP secure communications layers to make everything very secure.

**All the right verbs, fully integrated:** Telemote includes all the essential six core functions needed in administering a Windows server, desktop or embedded systems: Fast Telemote Remote Screen access, remote PowerShell sessions, sysadmin Dashboard, secure file transfer, SSH command line & RDP screen access. All functions are integrated seamlessly so that sysadmin tasks flow smoothly. Competing products lack providing some of these core functions and several have weak integration.

**High screen resolution:** Telemote supports very large monitors, very high screen resolutions and the monitor's horizontal or vertical orientation. These features become critically important in medical imaging and in large engineering workstations. Additionally, Telemote works fast even in this high screen resolution demanding environment.

**PowerShell remote runs full interactive:** Telemote is the only sysadmin product that includes a full WinRM server and client integrated within the product. It means PowerShell remote sessions in Telemote can run interactive programs like file editors vi, edit or emacs. In fact, Telemote can run any console program unlike Microsoft's PowerShell remote which can only run line-oriented program and no editors. Editing is important as sysadmin scripts and configuration files are often needed to be added or modified. Telemote brings PowerShell's remote power to full form so that all tasks can be performed over a PowerShell session to a remote machine.

**Task Automation & Scripting:** In addition to advanced graphical interfaces, full command line tools are included in Telemote package so that advanced features like smart card based login, batch upload of files securely and PowerShell scripts can be run remotely and in full automation mode.



## Telemote vs Competitors

	Telemote	Bomgar	RAdmin	LogMeIn	TeamViewer	PC Anywhere
<b>Company</b>	Pragma	Bomgar	Famtech	LogMeIn	TeamViewer	Symantec
<b>PowerShell remote</b>	Yes	no	no	no	no	no
<b>Data Transport</b>	SSH	proprietary	proprietary	proprietary	<b>https/SSL</b>	proprietary
<b>Encryption</b>	AES+FIPS	AES	AES	256-bit SSL	AES	AES
<b>Security</b>	Highest	high	low	high	Average	low
<b>2-Factor, Smart Card, RFC 6187</b>	yes	no	no	no	no	no
<b>Dashboard</b>	yes	no	no	yes	no	no
<b>GUI based or command line</b>	Both	GUI, need h/w	GUI	GUI	GUI	GUI
<b>Support of multiple displays</b>	Yes	no	no	yes	no	no
<b>Maximum desktop Resolution</b>	4096x2048, unlimited	limited	limited	4096x2048	limited	limited
<b>Log of user activity</b>	yes	yes	no	yes	yes	no
<b>Multiple session support</b>	yes	yes	no	yes	no	no
<b>FIPS approved file transfer</b>	yes	no	no	no	no	no
<b>PC access behind firewalls</b>	Yes via Pragma SecureFactors	no	no	yes	yes	no
<b>Vendor reputation</b>	Very high	Very high	low	Very high	high	low
<b>HIPAA, FIPS, US Army CON</b>	yes	no	no	no	no	no
<b>Speed &amp; performance</b>	Very high	high	average	Very high	average	slow
<b>32bit, 64bit support</b>	yes	no	no	yes	no	no
<b>Plug &amp; Play, Integrated</b>	yes	no	no	yes	no	no
<b>Remotely upgradeable</b>	yes	yes	no	yes	yes	no
<b>Country of Origin</b>	USA	USA	Russia	Hungary, USA	Germany	USA
<b>New generation tool</b>	Yes. Modern design. Born 2018	No. 13 years	No.16 years	No.16 years	No.17 years	Oldest. 22 years

Competitive Positioning: Telemote represents the most secure, easy to use and powerful tool to most effectively control, manage, update and support multiple systems from a single workstation. Telemote offers more comprehensive features than any other competitors in this space, including RAdmin, LogMeIn, TeamViewer, Bomgar, PC Anywhere and others.

## Some quotes from people who uses Telemote

“Telemote has a rich feature set that met our needs for global support and sysadmin tasks of medical imaging stations we have in hospitals worldwide. Pragma is known for advanced products and we are pleased to work with them to adopt Telemote across our various groups and departments company-wide.” - **Alex Korolev, Senior Systems Engineer, McKesson Change Healthcare**

“Telemote is something I felt needed for the SSH market to make SSH easy to use. It makes secure systems administration be more readily available and avoid security traps like key-loggers capturing user inputs.” – **A customer who chose it to expand SSH use**

“Pragma is an excellent SSH technology provider and its solution works very well with Cisco SSH bundled in our devices. Our team has worked closely with Pragma for interoperability with Cisco SSH and we have worked to ensure end to end access for many common customers, including the United States Army.” – **Chris Lonvick, Ex-Director, Cisco & Editor of SSH RFC internet standard**

“Pragma is known worldwide for its command line tools. Now we enter the graphical remote access market to serve our large install base who were clamoring for a secure product from us. We use Telemote to manage Pragma internal IT.” - **David Kulwin, CTO, Pragma Systems.**

“Telemote was many years in the making and it will redefine how system admin products work in the industry. We have brought the maximum ease and the maximum security in Telemote. Sysadmins can install and use it in minutes.” - **Beth Redd, Customer Support Manager, Pragma Systems.**

## Where Telemote Fits

- Remote Desktop Access of servers and desktops securely
- Windows IT system management for an enterprise or Data Centers
- Remote customer support
- For developers, remotely trouble-shooting problems in a customer site
- Securely patching & updating systems
- Securely distributing files, content and documents in an office or enterprise
- Access high resolution monitors and applications for Medical imaging & Engineering design
- Critical Infrastructure Management for power plants & utilities
- Secure site or building management
- Cisco network and device management
- Telecom and mobile base station management
- Global customer support centers
- FIPS, HIPAA, SOX, PCI DSS, US DoD UC APL, US Army NETCOM Compliance

## Packaging & Installation

Telemote platform consists of “Telemote Server” and “Telemote Viewer” packages. Telemote Server package is installed on a server or desktop to be managed. It supports ten in-coming concurrent sessions. For unlimited in-coming concurrent sessions, install Telemote Server Enterprise version. Telemote Viewer package is needed for the client side, one per systems administrator’s workstations or an individual desktop user who would perform some sysadmin tasks. A Telemote Viewer can manage an unlimited number of machines running Telemote Server software. Telemote supports all current Windows operating systems, specifically Windows 11, 10, 8.1, 8, 7 & Windows Server 2022, 2019, 2016, 2012R2, 2012, 2008R2, 2008.

## Find out More

Telemote is available to order online from the company web site [www.pragmasys.com](http://www.pragmasys.com) or by contacting Pragma directly over the phone or email. A 14-day free trial version can be downloaded from <https://www.pragmasys.com/telemote/download> . Telemote can also be ordered through our worldwide resellers and sales channels partners listed in our web site at [www.pragmasys.com/company/partners/resellers](http://www.pragmasys.com/company/partners/resellers).