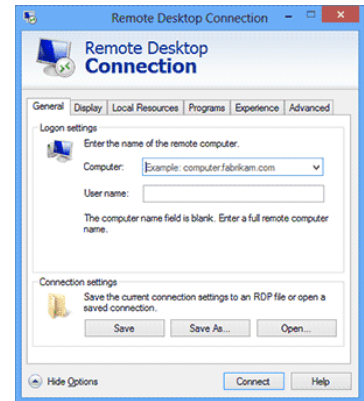


Top Ten Reasons You Need to Know About Terminal Services

Terminal Services is one of the components of Microsoft Windows (both server and client versions) that allows a user to access applications and data on a remote computer over a network. Terminal Services is Microsoft's implementation of thin-client terminal server computing, where Windows applications, or even the entire desktop of the computer running Terminal Services, are made accessible to a remote client machine. The client can either be a full-fledged computer, running any operating system as long as the terminal services protocol is supported, or a bare bones machine powerful enough to support the protocol. With terminal services, only the user interface of an application is presented at the client. Any input to it is redirected over the network to the server, where all application execution takes place.



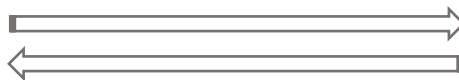
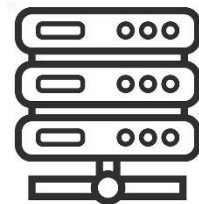
For an enterprise, Terminal Services allows IT departments to install applications on a central server. For example, instead of deploying database or accounting software on all desktops, the applications can simply be installed on a server and remote users can log on and use them via the network. This centralization makes upgrading, troubleshooting, and software management much easier.

Traditional Client-Server Architecture

Customer Service-“Client”



Server



Applications hosted on client machine
All work done on client machine
Processing done on client machine
Applications access data from server (slower)

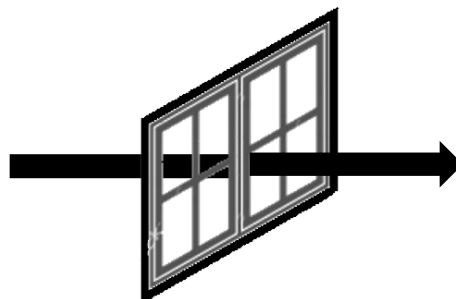
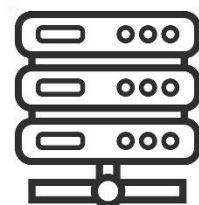
Mainly act as data repository for applications

Terminal Services Architecture

Customer Service-“Client”



Server



Mainly act as “dummy” machine

Applications hosted on the server
All work done on the server
Processing done on the server
Applications access data on same server (faster)

So, why do I, as a business owner or operator, need to know about Terminal Services? Here are the **Top Ten Reasons why you need to know about Terminal Services**

1. You have access to systems from anywhere and anytime

With more mobility being the norm rather than the exception, business executives and employees need robust access to their contacts, calendars and documents regardless of where they are and what time it is. Terminal Services or Remote Desktop Services is an old, but great solution for today's mobility requirements. Just like wide ties; keep them long enough and they'll come back in fashion. So it is with Terminal Services. It's enjoying a second look because of its overall simplicity and low cost. Gone are snow days or other human resources challenges associated with absentee staff. Access and productivity are no longer issues as well. Users can pull up their desktop from home so personal matter need not impact your staff's ability to continue where they left off at the office.

2. With Terminal Services, there is a single point of maintenance

In a Terminal Services environment, applications are installed on a terminal server rather than on individual desktops. As a result, application updates become much easier because there is only one copy of each application. You no longer have to make sure that application-level patches are applied to every desktop in the organization. It is worth noting, though, that each desktop retains its own operating system, which must still be kept up to date. In addition, with one location running the systems for all the sites there is no longer a need to be at each site for maintenance or support. In this way site support can occur instantaneously keeping users working when you need them most.

"...installation only happens once and everyone receives the upgrade at the same time."

3. You only have to install applications once, then the many can use them

The Installation of applications only happens once and everyone receives the upgrade at the same time. Once an organization has adopted Terminal Services, desktops can be configured to run a minimal configuration. This makes the process of provisioning desktops a lot easier. Image files become smaller and can therefore be deployed much more quickly. The issue of application compatibility testing (at the desktop level) also goes away.

4. Reduced licenses expense

Businesses will see a reduction in application costs with concurrent licenses instead of per device licenses.

5. Solid Security

The network administrators can lockdown file and system access from a single point. Terminal Servers also vastly limit the ability for the remote sites to take data from an organization.

6. Power Savings with a juicy ROI

Businesses can see ongoing power savings with the use of Thin Clients (dummy terminals). Thin clients use 1/5 th the power required by a desktop or laptop. This one item alone—the investment in terminal server with thin client—typically pays for itself in 16 months just in the reduction of electricity bills.

7. Per user monthly cost drops from \$55 to \$20

With the right outsourced IT provider, thin client costs drop to under \$1 per day. Depending on the size of the company, the savings become very significant very quickly.

8. Hardware no longer an issue

When Terminal Services debuted with Windows NT, server hardware was hard-pressed to support multiple server sessions. Furthermore, 10 Mbps networks were still the standard at that time and could easily become saturated by network-intensive applications, such as Terminal Services. Today, server hardware is far more powerful than it has ever been, and running multiple operating system instances on a server is the norm. Today's servers are well equipped to handle the demands of hosting Terminal Service sessions.

9. Desktop hardware has a longer lifespan

The economy has seen better days, and everyone is looking to make the most of their IT budget. By using Terminal Services, organizations can squeeze more life out of their desktop computers. Because all the processing occurs at the server end, the desktops are essentially acting as dumb terminals. This means that using existing desktop hardware remains a viable option for much longer than it would if applications were run locally. Likewise, running applications on a terminal server may allow organizations to purchase lower-end desktop hardware than they otherwise would, resulting in cost savings.

“...organizations can squeeze more life out of their desktop computers.”

10. Desktop PCs have a smaller attack “surface”

Because Terminal Services involves applications or desktop sessions that are centrally hosted, there's no need to install applications on individual desktops. This helps to reduce the attack surface (as in malware and viruses) of the desktops in your organization. Typically, the desktop computers will require an operating system, some antivirus software, and a Terminal Services client (which is included with Windows). Everything else can be run on the server.

A Bonus reason why you need to know about Terminal Services (“11 Reasons” does not sound as good as “10 Reasons”) is that now peripherals are supported. USB devices such as cameras, external storage, and memory sticks are all currently supported.

Limitations to a Terminal Services environment

To be fair there are some limitations one needs to consider when adopting Terminal Services, they are:

- **Video playback limitations**

Terminal Services is not meant to play HD video through the terminal. Though users can roughly watch a YouTube video, the video and audio are often not in sync

- **Heavy graphics requirements not ideal**

Terminal Services is not recommended for heavy graphic applications such as Adobe and AutoCAD as they are heavy on resource use. For these users standalone desktops are still the recommendation.

Alpine Requirements to Run Visual RAMS-Pro

Visual RAMS-Pro is a powerful application and a great resource in running a hauling operation. However, the performance of any software application relies heavily on the hardware it is installed on, the internet bandwidth, and the environment that is being utilized. Over the years we have found there are specific minimum system requirements and a particular architecture design, particularly in an updated Windows environment, that needs to be present in order for Visual RAMS-Pro to be used optimally.



Client–Server Visual RAMS-Pro architecture is no longer supported on Windows 7+ / Server 2008+ operating systems. Continuing to use Client–Server configuration will cause increasing issues and vastly increased support costs.

Server

A dedicated server is required to run Windows 2008 / 2012 / 2016 operating system

- Server Software Requirements
 - Installed Roles Remote Desktop Services
 - Users log into the server to use VRP
 - CALS installed for total number of users.
 - Client Access License paid to Microsoft
 - Average of \$5 per month per user
 - <https://www.microsoft.com/en-us/licensing/product-licensing/client-access-license.aspx>
 - Domain Setup for User accounts
- Server hardware requirements
 - CPU multi core processor 1.4 GHZ
 - Minimum Raid 1 array configuration 100 GB total size
 - 4 GB RAM plus 200 MB RAM per connecting user

Workstation

Any workstation running Windows Vista or newer will be sufficient.

Network

Stable 10/100 network required. Packet loss between the workstation and server should be less than %1 over a 24 hours period.