REMOTE DESKTOP CONNECTION MANAGEMENT SOFTWARE COMPARED

We know how confusing it can be to choose the right Remote Desktop Connection Management software that will fit you like a glove, there are so many out there that it can get quite complicated to choose one! We have decided to take a couple of Remote Desktop Connection Management software for a little test drive, and as often done by our IT colleagues, we went rogue and didn't even read the instruction manual! We downloaded and installed **Royal TS**, **ASG Remote Desktop**, **Remote Desktop Manager**, **ControlUp**, **RDCMan**, **mRemote** and **Terminals**. In our review you will find our take on the pros and cons of these utilities and also information on common system management tactics used when approaching complex IT systems management.

" WE HAVE DECIDED TO TAKE A COUPLE OF REMOTE DESKTOP CONNECTION MANAGEMENT SOFTWARE FOR A LITTLE TEST DRIVE"

Devolutions

controlUP

PART 1 | REMOTE DESKTOP CONNECTIONS MANAGER OVERVIEW

Since the beginning of Windows and Terminal Services deployments, Remote Desktop has been an essential component of enterprise computing. Indeed, the ability to gain full-desktop access to any Windows system connected to a network has numerous uses in organizational IT, many of which are constantly being taken to new heights by products like Citrix XenApp and XenDesktop, VMware Horizon, Microsoft RemoteApp and many more. Protocols (like RDP, ICA/HDX, VNC, PCoIP, etc.) and architecture types (cloud-based such as TeamViewer and LogMeIn, or on premises solutions such as Royal TS and Dameware) are used for remote support, application delivery, working from home and many other tasks. Whichever platform you choose to work with, the underlying principle stays the same – as long as you have connectivity and sufficient rights, physical distance should never prevent you from accessing any machine.

Remote Desktop (we will use that term loosely, since various solutions and protocols are included) is also useful for administration purposes, which explains the flourishing market of connection managers. Most of these Remote Desktop Connection Management software are management console designed to aggregate multiple Remote Desktop connections in a single window. A galore of management features are often hidden under the hood, but no worries, we are here to help you figure out which one best fits your needs. A quick browse through Alternativeto.net reveals a great wealth of products, such as Royal TS, ASG Remote Desktop, Remote Desktop Manager, ControlUp, Dameware, mRemote and RealVNC, just to mention a few of the most popular Remote Desktop Connection Management software.

To start, here's a few questions to ask yourself to see if you do indeed need a Remote Desktop Connection Management:

- **Do you have multiple Remote Desktop Connection windows open, some disconnected, some with unidentifiable IP address or cryptic names on them?**
- **Do you sometimes forget which machine you are on when clicking on the Windows Start Menu?**
- **Does your user account have multiple disconnected sessions on multiple servers in your environment, some of which have been idle for ages?**
- **Are you often using RDP in RDP or even RDP in RDP in RDP?**
- **Are you using a virtualization host console inside a remote access protocol session?**

If you have answered yes to one of those questions, then you definitely need a Remote Desktop Connection Management software to help you simplify your life! Now, what should you expect from a great connection manager? Well, first of all, they should offer a handy way of configuring multiple connections, also allow you to easily switch between machines (with a folder tree view and/or tabs), include a password vault useful for saving credentials and speeding up the connection process. These are core features and almost all of the above-mention products include those features since they are what defines a great Remote Desktop Connection Management software.

PART 2 | REMOTE DESKTOP CONNECTION SOFTWARE OVERVIEW

Before getting down to business, let's take a quick look at each of the remote desktop connection software that we will be analyzing:

royal ts

by Code4ward

Royal TS allows you to manage and organize all of your connections, credentials and passwords. The main point of Royal TS is to make Remote Desktop and Hyper-V connections easily accessible through a user-friendly, Explorer-like interface. It is currently available on Windows, MacOS, iOS and Android.

asg technologies

ASG Remote Desktop makes it easy for system administrators to manage and organize remote connections and store credentials. It allows for the creation of connection groups as well as the ability to connect to clients running a host of different protocols (HTTP/S, SSH, VNC) and OS's (Linux, MacOS, Windows).

Remote Desktop Manager

by Devolutions

Remote Desktop Manager is a feature-rich remote connections manager that centralizes all your remote desktop connections, passwords and credentials locally or into a supported data source that can then be securely shared between users. Most communication is established using either an external library or a third-party software.

control up

ControlUp is an extensive solution that covers multiple aspects of real-time management and monitoring, providing systems administrators with detailed information on the status of monitored resources and enabling for remediating issues with powerful management actions. The ability to connect to the monitored computers using Remote Desktop is included in ControlUp, along with the accompanying configurations, such as saving credentials, configuring display settings and device redirection. In addition, ControlUp offers a variety of built-in features for ICA/HDX sessions, and a script-based action platform which enables you to integrate any external script or tool as a management action and use it in a multi-target manner.

Remote Desktop Connection Manager

by Microsoft

RDCMan helps you manage multiple remote desktop connections. It's similar to Windows Servers' built-in MMC Remote Desktop Snap-in but offers more flexibility. It offers features such as virtual machines connect-to-console support, smart groups, support for credential encryption with certificates. It works on Windows 7 and server version from 2003 and up and with the latest release it is also supported on Windows 8 and 8.1, Windows Server 2012 and 2012 R2.

mRemoteNG

mRemote is a remote connections manager that is an open-source software, tabbed and multi-protocol. It supports RDP protocols as well as some of the most popular ones like VNC, ICA, SSH, Telnet, etc. It is a program that is easy to use and manage all your remote desktop connections from a central location.

Terminals

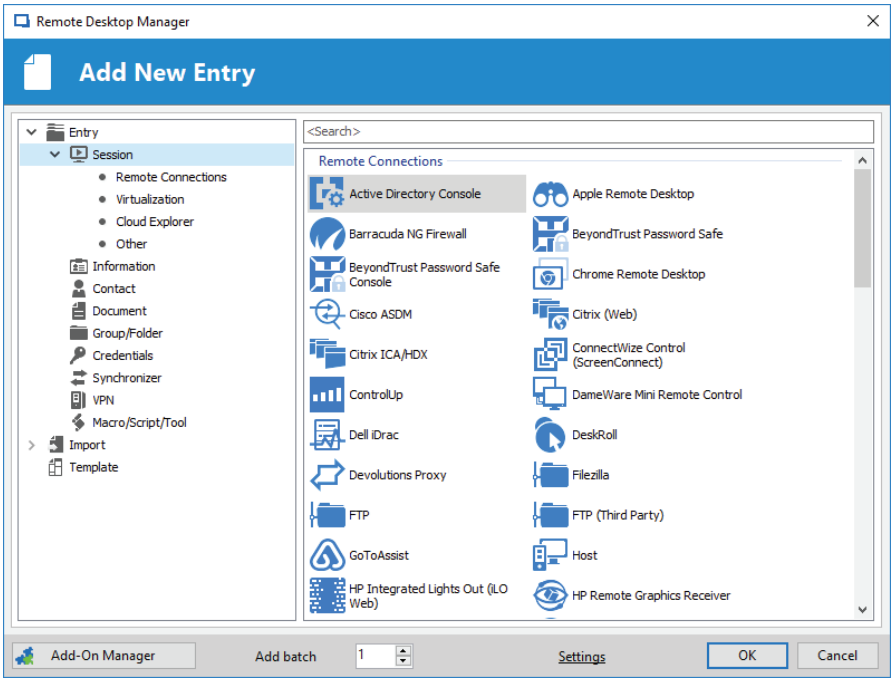
Terminals is an open source remote connections manager that offers rich features, it has been actively maintained and developed for some years. It is a tab-based remote desktop client manager that uses Terminal Services Active Client (mstscax.dll). It supports RDP protocols as well as VCN, Console, SSH, VRRC, Citrix, RAS, HTTP and many more. It can be run on Windows XP, Windows 7, and Windows 8.

PART 3 | REMOTE DESKTOP CONNECTION MANAGEMENT SOFTWARE PROTOCOLS

Now, let's take a look at which protocols are supported by which Remote Desktop Connection Management software. If you are mostly working in Windows environment then you are probably using RDP connections, but our personal runner-up protocols include Citrix, Telnet, SSH and Remote Assistance. We will focus our review on Windows-based products, although most of the products now includes versions for MacOS, iOS and Android as well. Here's a comparative table to show you the protocols that are supported by each software.

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
RDP	X	X	X	X	X	X	X
Remote Assistance	X	–	–	X	–	–	–
ICA	X	X	X	X	–	–	X
VNC	X	X	X	–	X	–	X
SSH	X	X	X	–	X	–	X
Telnet	X	X	X	–	X	–	X
Radmin	X	–	–	–	–	–	–
Other	LogMeIn, Team-Viewer, Dameware, Virtual PC, VMware Server, Hyper-V, and many more	http/s	rlogin, RAW, http/s	Shadowing and screenshotting active sessions	Terminal, Team-Viewer, Hyper-V	–	VMRC, http/s

The winner in the category of ***"Most Supported Protocols"*** goes too (drumrolls!!) Remote Desktop Manager by Devolutions. They have the richest collection of supported connection types, including cloud-based solutions like TeamViewer and LogMeIn. Here is a screenshot of their ***Add New Entry (Session)*** window, just to give you a glimpse of their supported protocol type.



That being said, protocol support is not the only thing that matter, in fact if RDP is dominating your environment, you might not care much for the variety of protocols offered by a Remote Desktop Connection Management software. In that case, the productivity enhancing features offered by the different products would be of more interest to you. In the next section, we will compare the approaches used by different connection managers to import and organize your multiple connections and credentials to keep the administration efficiency at its peak.

PART 4 | EVERYTHING IN ITS RIGHT PLACE – IMPORTING AND ORGANIZING REMOTE DESKTOP CONNECTIONS

All of the software included in this review offers a Navigation Pane that holds a tree view, making it easy to manage and arrange all of your connections. The tree view allows you to use the hierarchy and the inheritance of multiple connection properties. For example, you could create a top level folder which would hold all of your servers (or servers of a particular type), configure your credentials and other connection settings on your top level folder, and then use the inheritance feature for all of your entries to climb up the tree and inherit the information set on your top level folder. The surveyed products all have their own version of the tree view, which holds different connections, but they all offer pretty similar features. Remote Desktop Manager, VisionApp and RoyalTS offers a credential folder in your tree view to hold all of your stored credentials. RoyalTS also offers a galore of different tasks directly in the tree view for quick access, which we will talk more about later in our review.

Before we continue, just a quick note on the user interface of these products. Each of them have their very own visual style that suits different tastes, but we would really like to point out the beautiful interface that RoyalTS and Remote Desktop Manager offers, it is sleek, user-friendly, clear and overall pleasant to look at. On the other hand, Terminals, RDCMan and mRemote are quite the opposite, giving us a rough-looking user interface that is far from being user-friendly and feels like it was never thoroughly planned.

ADDING/IMPORTING CONNECTIONS TO THE CONSOLE

Using the products surveyed, we have tested the functionality offered by the different products to import and create connections. We focused our tests on bulk operations and maximum environment integrations.

To begin we took a look at the different ways to add remote connections to your preferred software. The most straightforward method would be to scan your environment (network or Active Directory), you could also choose to import providing the filenames of all your favorite machines or a range of names (Server01-Server99). As you will see in our comparative table below, different products will support different kind of file format for import and export, we have omitted the native format for each solution since that support seems a bit obvious!

Here is a support matrix for all the popular import methods we could find:

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
From Active Directory	X	X	X	X	X	–	X
From a text file	X	X	X	X	X	X	X
Scaning IP range	–	–	X	X	–	–	X
By name range	X	–	–	–	–	X	–
From other file formats	.rdp, .vnc, .pvm, .vrd and Office format (doc/x, xls/x, ppt/x, etc)	.csv	–	–	.rdp, .csv	–	.rdp
Other Import Sources	LogMein, Team-Viewer, Dameware, mRemote, RoyalTS, KeePass, VsionApp, Screenconnect, local subnet and many more	mRemote and VMware	Port scan	Using PowerShell, from any scriptable source (v7)	mRemote, RDG, RDM, KDBX	–	visionApp, registry scan, port scan

Again you can see that Remote Desktop Manager by Devolutions offers the most substantial variety of supported formats (including Office documents) and in addition also offers various competitors file formats, which is quite impressive. ControlUp, on his side, offers the unique ability to scan Active Directory domains and forest computers even if they are not on your domain, that don't belong or even trust. This feature can come in very handy in complex environments.

However, we have to give the gold medal to the open-source Terminals as winner of this category and here are two of the main reasons why:

1. Terminals offer a nice built-in port scanner, allowing you to scan an IP address range for services listening on popular ports. You can then add computers that are ready and available for connection with the appropriate connection type detected and saved automatically. mRemote also offers a similar feature that is quite useful.

2. Upon first launch Terminals offers to import all of your most recently used RDP connection from the registry, which gets you started with dozens of relevant connections within seconds. That is what we call a smart and useful out-of-the-box behavior.

Now, let's take a look at the collaboration between several system administrators in the same organization connecting to the same machines and sharing connection details. All the products surveyed above offers you the option to share the configurations files with your colleagues, but some

products are taken a more advanced approach to this. The ASG Remote Desktop Environment Wizard helps you configuring an SQL database, allowing for folder's content to be dynamically updated from Active Directory, VMware or a file, keeping the server list up to date for multiple administrators at the same time.

Devolutions Remote Desktop Manager offers you multiple server packages, like the Devolutions Server or Devolutions Online Database, for storing program data centrally, both on-premises and in the Cloud. They also support some of the most popular Cloud platform, such as Amazon S3, Dropbox, One Drive, as well as database formats. In addition, their free Online Backup option allows you to keep a spare copy of your configuration in the Cloud.

Now that the remote connections have all been imported and neatly organized in a folder structure representing your organization, the next step is to take a closer look at the different features offered by the Remote Desktop Connection Management software that goes beyond simple remote connection.

PART 5 | REMOTE DESKTOP AND BEYOND – MANAGEMENT AND MONITORING FEATURES

In the first part of this document we have compared several Remote Desktop Connection Management software, focusing on their protocol support, import capabilities and collaboration features. We have decided to concentrate Part 3 on features that are targeting sysadmins requirements.

For sysadmins running a basic command-line, such as ping or tracert, against machines added to the console, invoking management tools such as Event Viewer, Services or Registry Editor from inside the connection managers or executing task just before or after you have established a connection are must-have for them to help them in their day-to-day work. For example, a task sequencing would be of great help for a sysadmin who needs to investigate on a Terminal box that suddenly doesn't feel like accepting sessions anymore.

Here is a comparative table to take a look at the feature matrix for management tools and other extras that are supported by the different Remote Desktop Connection Management software.

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
ADMINISTRATION TOOLS (TARGETED AT THE REMOTE COMPUTER)							
Computer Management	X	–	–	–	X	–	X
Event Viewer	X	–	–	X	X	–	–
Registry Editor	X	–	–	X	–	–	–
Wake on LAN	X	X	–	X	–	–	X
Remote CMD	X	–	–	–	–	–	–

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
iLO integration	X	X	–	–	–	–	–
Restart/Shutdown	X	X	–	X	–	–	X
SSH file transfer (SFTP)	X	–	X	–	X	–	–
Manage user sessions	–	–	–	X	–	–	–
Manage file system	X	–	–	X	–	–	–
Custom command execution	X	X	X	X	X	–	X
DIAGNOSTICS AND INVENTORY (TARGETED AT THE REMOTE COMPUTER)							
Ping	X	–	–	X	X	–	X
Tracert	X	–	–	–	X	–	X
Port Scan	X	–	X	–	–	–	X*
Netstat	X	–	–	–	–	–	X*
TS admin	X	–	–	X	–	–	X
Packet Tracer	X	–	–	–	–	–	X*
Remote ipconfig	X	–	–	X	–	–	–
System information	X	–	–	X	–	–	X
Running processes	X	–	–	X	X	–	X*
Show file shared	X	–	–	–	–	–	X*
Show installed drivers	X	–	–	–	–	–	X*
Show installed hotfixes	X	–	–	X	–	–	X*

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
OTHERS							
Multi-target tasks	X**	X**	–	X	X**	–	–
Remote Custom Commands Execution	X	–	–	X	X	–	–
Pre/Post connection Tasks	X	X	X	–	X	–	X

Here are some explanation regarding the feature matrix table:

*** Terminals Networking Tools:** Some of them have an asterisk next to them, which means they are not really designed to run against your chosen target machines. For instance, tools such as Interfaces and Connections are local only, while System Information requires a manual WMI connect to each machine.

**** Multi-Target Tasks:** The software with a grey checkmark in that section performs multi-target commands as disjoint single target task. For example, if I send a restart command to ten computers and each one has an error, you will receive ten error messages which you will have to patiently dismiss one by one. ControlUp is the only one of the products surveyed here which is able to perform the task in parallel, report their progress and present the result in a manageable form, so creating a registry key or stopping a service on a hundred servers feels absolutely similar to doing so on one server or on ten servers.

Pre/Post connection tasks: This feature is quite useful when using RDP to connect to remote computers access which requires a VPN connection to be established first.

Custom Command execution: The Custom Command execution means that the software allows any executable to be configured as a custom task, meaning that some other unavailable tasks may actually work with this option. While this works for the console-side tasks such as ping, this does not include tasks performed at the remote computer. This task is supported by ControlUp and RDM via a remote agent.

Remote Custom Commands execution: When referring to Remote Custom Commands execution we are talking about situations where you would need an arbitrary executable to run on the remote computers, as opposed to local execution on the desktop (ex: running ipconfig/flushdns on a dozen remote machines). This task is supported by ControlUp and RDM via a remote agent.

PART 6 | SECURITY FEATURES

Remote Desktop Connection Management software used in team environment has long been a delicate IT staple. On one side, sharing files, credentials and having easy access to multiple servers are great things. But on the other side all this accessibility has become a huge concern for hackers and the technique they employ to gain access to your information. Now, even the software with the richest features isn't enough to be the best one, it also has to be the one that will be the hardest for an unauthorized user

to breach. The security features that each of those software offers is of the utmost important.

We focused our analyzed on the 7 most critical security features that we feel a Remote Desktop Connection management software should offer to securely work in a team environment.

	RDM	ASG	mRemote	Control Up	RoyalTS	RDCMan	Terminals
Support 2FA	X	–	–	–	–	–	–
Private Vault	X	X	–	–	X	–	–
Hide entry password from users	X	X	–	–	–	–	–
AES Encryption	X	X	X	X	X	–	–
Security Management	X	X	–	X	–	–	–
User Management	X	X	–	X	–	–	–
Restrict access to the data source configuration with a password	X	–	–	X	–	–	–

RDM is the clear winner when it comes to security. With its wide range of 2-Factor Authentication method supported, it's private vault, its easy-to-use security and user management feature, your information is definitely safe and secure with RDM.

PART 7 | SYSTEM MANAGEMENT AND MONITORING WITH REMOTE DESKTOP, ARE YOU DOING IT WRONG?

Now that you are familiar with the core functionality and workstyle offered by various Remote Desktop Connection Management software, we would like to take a look at some common inefficient practice in Windows systems management that we have witnessed over the years.

As consultant and IT trainer, we were often approached with multiple technical questions, making us wonder what the real challenge at hand was for the users. For example, if an IT guy asks, **"How do I set a login script to run as Local System?"** we've learned to follow our guts and ask: **"What exactly are you trying to achieve?"**. We think the same logic should be applied to many management and monitoring challenges, especially when you're dealing with multiple machines. In other words, if after reading this article you decide to use a Remote Desktop Connection Management software to which you add 20 servers and log into each and every one of them to run a command or check a piece of system information, then we have one thing to say to you: YOU'RE DOING IT WRONG!

To quote Maslow, it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail. In our case, you can indeed be tempted to use a connection manager for parallel management. Let's say you need to restart a service on three machines, if you can't quickly come up with a command line it would be really tempting to log into the machines one by one and get it over with (especially if you're charging by the hour ;)). The dilemma gets even bigger when facing a task that must be performed on 10 or 100 servers. A savvy scripter will surely quickly come up with a command line...or just do the 10 servers manually while no one is looking.

It is now up to you to choose the Remote Desktop Connection Management software that will fit you like a glove and make your life much easier! If you prefer an all-in-one multi-target management solution you should definitely check out ControlUp, while it may not be the most sophisticated Remote Desktop Connection Management software, you may be surprised by its powerful approach to managing multiple machines and it might just be the right tool for your job. But if you work in a team environment, where you manage multiple types of protocols and where security is of the utmost importance then we suggest checking out Remote Desktop Manager, with their wide range of supported protocols, their user-friendly interface and their security management features, it might just be the perfect one for you.

PART 8 | PRICE

Last but not least, let's take a look at the Remote Desktop Connection Management from a commercial point of view.

	Includes a Free Version	License per year (US$) (as of May 2017, as published on the vendors' websites)		Extras, limitations and notes
		Single admin license	Site license (starting at)	
RDM	X	$150.00	$3000.00	–
ASG-Remote Desktop	–	$113.00	Country license $2497.00 Global license $4093.00	–
mRemote	X	N/A	N/A	Open Source
ControlUp	X	Free*	Quote on demand	Remote Desktop features are free and unlimited.
RoyalTS	X	$40.00	$629.00	
RDC Man	X	N/A	N/A	
Terminals	X	N/A	N/A	Open Source

*** Includes:** a full multi-target management suite, in which the free license is limited to managing up to 50 user sessions concurrently.

WEB PAGES FOR THE SURVEYED PRODUCTS:

Devolutions: http://remotedesktopmanager.com
visionApp: http://www.visionapp.com/germany/solutions/asg-remote-desktop.html
mRemote: https://mremoteng.org/
ControlUp: https://www.controlup.com
Terminals: https://terminals.codeplex.com
Microsoft RDCMan: https://www.microsoft.com/en-ca/download/details.aspx?id=44989
RoyalTS: https://www.royalapplications.com

SEE ALSO:

Wiki – List of Remote Desktop Software
https://en.wikipedia.org/wiki/Comparison_of_remote_desktop_software
AlternativeTo.Net – Remote Desktop
http://alternativeto.net/tag/remote-desktop-access