Remote Desktop Services with Vijeo Citect 2015

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1. Remote Desktop Services (RDS)

For the purpose of this document, Microsoft's **Remote Desktop Services (RDS)** (formerly Terminal Services) allow **Remote Desktop Clients (RD Clients)** to connect to **RemoteApps** hosted on a **Remote Desktop Session Host (RDSH)** via the **Remote Desktop Protocol (RDP)**.

In a Vijeo Citect 2015 system, the RDSH is configured to host SCADA Clients, by publishing a RemoteApp. When an RD Client runs the RemoteApp, they view and interact with the program as if it were locally installed, whilst leveraging the processing power and connectivity of the RDSH. In addition, RDP uses 128 bit encryption, and RD Clients are not limited to Windows-based devices.

These attributes make it a good candidate to allow Remote Access to a SCADA System, and can be used with other standard security products, such as two-factor authentication and VPNs.

For more detailed information regarding RDS, refer here: <u>https://technet.microsoft.com/en-us/video/remote-desktop-services-rds-explained.aspx</u>

1.1. Benefits at a glance

RDS provides the following benefits:

- No SCADA installation on Clients
- Project files centrally managed
- Secure Remote Access
- No need to directly expose SCADA Servers
- Remote Desktop Protocol (RDP) traffic is 128 bit encrypted (RC4)
- FIPs compliant (regulatory compliance)
- SSL can be added for additional Security
- VPN access can be added for additional Security
- Integrate with enterprise two-factor authentication
- Cross-Platform Clients

1.2. Supported Operating Systems

The Remote Desktop Server must be running one of the following Operating Systems:

- Windows Server 2008 R2
- Windows Server 2012 R2

1.3. SCADA Licensing

The Citect client process on the server machine acts as a local license manager. The Citect server components act as a provider to distribute "Floating License" to remote clients that make a connection and request a license. The client process along with other server components are managed by the Citect Runtime Manager. In an RDS environment, several SCADA client sessions cannot be launched by Citect Runtime Manager because multiple instances are not supported. Therefore, the RDS Clients must use the switch /x to run without Citect Runtime Manager. SCADA clients launched with switch /x are basically "remote" clients and they thus obtain their license from a connected server component through the 'Floating License' mechanism. In the scenario where the SCADA Server and RDS Clients are all running on the same machine, softkey licenses are not supported. This is because the first RDS Client to startup will acquire all softkey licenses available on the machine and not have a mechanism to share them with other clients. This is a known issue and will be addressed in the future release. The hardware dongle license is the only option supported in this architecture, as the RDS Clients will not touch any licences on the dongle and always acquire a licence through the "Floating License" mechanism..

The client licence entitlement can be also specified with switch /l (I for licence), with /l:1 for a view-only client, while /l:2 is for a control client. This assumes that the default Citect.ini file will be used and switch /l simply overrides the [Client]ComputerRole setting. In this case, there is no need to create a separate Citect.ini for each type of clients. It should be noted that switch /l can only be used with switch /x.

1.4. Windows Remote Desktop Client License

Remote Connection Sessions using Remote Desktop Services require a standard Microsoft Client Access License (CAL) for each connection to the server.

1.5. Architectures

1.5.1. SCADA and RDS on the same Server

It is possible to host the **SCADA Servers** on the same PC as the hosted **Client Sessions**. This requires the smallest infrastructure, however, as all Servers and Clients now rely on the same hardware, this becomes a **single point of failure** for the entire system.

Note: Softkey licensing is not supported in this architecture. Only hardware licenses (USB keys) are supported through the floating license mechanism to connected server components. For more details see section 1.3.

In this architecture, you may consider installing the SCADA Server as a Windows Service. This allows the SCADA Server to run on the RDS Server without the need for a logged in interactive user. Other benefits and instructions can be found in the <u>'Vijeo Citect 2015 Run as a Windows Service</u>' whitepaper.



1.5.2. SCADA and RDS on different Servers

A more likely scenario is that the **RDS Server** only hosts **SCADA Clients**, and serves them as **RemoteApps**. These Client Sessions then connect to the required independent **SCADA Servers** for their IO, Alarm, Report and Trend data. This allows the usage of RDS for the Clients, and retains Citect's redundancy capabilities for the SCADA Servers, removing the single-point of failure.



1.5.3. RDS for Secure Remote Access

The use of RDS allows advanced architectures that allow for Secure Remote access. Following the principles of the IEC-52443 (ISA 99) standard, functional 'Zones' can be created and the interactions ('Conduits') between these zones controlled via heavily restricted firewall rules.

In the configuration below, all the traffic leaving the premises is encrypted via the Remote Desktop Protocol. Additional VPN technology could be used to further protect the data on the wire.

Since RDS is a standard Windows technology, additional authentication methods such as Two-Factor Authentication could easily be applied.



2. SCADA Installation

At a minimum, the Vijeo Citect SCADA 'Runtime Only Client' installation is required on the **RDSH** (Remote Desktop Session Host):

Select a profile from the options below. This will pre-select the core components. You may customize the installation in the following pages.
O All Core Components
O Runtime Only Server
Runtime Only Client
Ocustom

This can be installed following the 'Installation Guide' provided on the installation Media.

<u>Note:</u> If you install Vijeo Citect SCADA <u>after</u> installing Remote Desktop Services, the installer may not complete. This is a known issue and <u>Appendix A</u> outlines a workaround.

2.1. Project Setup – Computer Setup Editor

Restore your project backup from your development machine:

 Ensure the 'Save Compiled' option was selected, since you will not be able to compile on a machine with a 'Runtime Only Client' installation

Backup Project
Project Name:
Example
Save Included Projects
Backup to
Backup file:
C:\Users_\Desktop\Example.ctz
Options
✓ Use compression Use encryption
Save compiled
Save sub- <u>d</u> irectories
OK Cancel <u>H</u> elp

- Run 'Computer Setup Wizard', and add any required Citect.INI customizations
- Start the Client to test configuration and connectivity
- Shutdown the Client instance

<u>Note:</u> Other methods of distributing project files are documented in the product help, under: 'Distributing the Project'

3. RDSH Installation (Windows Server 2012 R2)

Note: You must be logged in as a Domain user

The following steps must be followed to install Remote Desktop Services on Windows 2012 R2:

• Open Server Manager >> Click Manage and 'Add Roles and Features':

🗲 🔄 🔹 📢 Dashbo	bard	• © 🖡	<u>M</u> anage	<u>T</u> ools	<u>V</u> iew	<u>H</u> elp
Dashboard	WELCOME TO SERVER	RMANAGER				
Local Server						
All Servers			a this lo		rver	
■ File and Storage Services ▷		Conngun			I VCI	
	QUICK START					
		2 Add role	es and fea	atures		
		3 Add oth	ier servers	s to ma	nage	
	WHAT'S NEW	4 Create a	a server g	roup		
Select 'Next and use the 'Ro	le-hased' option					

Select installation type

Before You Begin	Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual bard disk (VHD).
Installation Type	
Server Selection	Role-based or feature-based installation
Carrier Dalas	Configure a single server by adding roles, role services, and features.
Server Roles	O Demote Desiter Comissioninet lation
Features	Remote Desktop Services Installation Install required role services for Virtual Deskton Infrastructure (VDI) to create a virtual machine-based
Confirmation	or session-based desktop deployment.
Results	

• Select your server:

Select destination server

Before You Begin	Select a server or a virtual hard disk on which to install roles and features.						
Installation Type	Select a server from the server pool						
Server Selection	O Select a virtual I	hard disk					
Server Roles	Server Pool						
Features]			
Confirmation	Filter:						
Results	Name	IP Address	Operating System				
	Microsoft Windows Server 2012 R2 Datacenter						

• Add the remote Desktop Services Feature in the list:

Installation Type	Roles	
Server Selection		^
Server Roles	Application Server	
Features		
Remote Desktop Services	Fax Server	
Role Services	 File and Storage Services (2 of 12 installed) 	
Confirmation	Hyper-V	
Results	Network Policy and Access Services	
	Print and Document Services	
	Remote Access	-
	Remote Desktop Services	=
	Volume Activation Services	

Description

Remote Desktop Services enables users to access virtual desktops, session-based desktops, and RemoteApp programs. Use the Remote Desktop Services installation to configure a Virtual machinebased or a Session-based desktop deployment.

• Select the following Remote Desktop Services (RDS) options:

Before You Begin	Select the role services to install for Remote Desktop S	ervices
Installation Type	Role services	Description
Server Selection	Remote Deckton Connection Broker	Remote Desktop Session Host (RD
Server Roles	Remote Desktop Gateway	Session Host) enables a server to
Features	Remote Desktop Licensing	session-based desktops. Users can
Features Remote Desktop Services	Remote Desktop Session Host	connect to RD Session Host servers
Role Services	Remote Desktop Virtualization Host	programs, save files, and use
Confirmation	✓ Remote Desktop Web Access	resources on those servers. Users
Results		can access an KD Session Host server by using the Remote Desktop Connection client or by using RemoteApp programs.

• Proceed through the wizard, confirming your selection then click 'Install'

3.1. **Deploy RDS**

Note: You must be logged in as a Domain user

The next step is to deploy the RDS Service on the Host machine:

- Open Server Manager >> Click Manage and Add Roles and Features •
- Select Remote Desktop Services installation

Select installation type

DESTINATION SERVER No servers are selected.

Before You Begin

Installation Type

Deployment Type

Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).

- O Role-based or feature-based installation
- Configure a single server by adding roles, role services, and features.
- Remote Desktop Services installation Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.

Select Quick Start in the Deployment Type •

Select deployment type

DESTINATION SERVER No servers are selected

Before You Begin

A Remote Desktop Services deployment already exists in the server pool. Select an RD Connection Broker on which to create the Remote Desktop Services deployment.

RD Connection Broker

Remote Desktop Services can be configured across multiple servers or on one server.

O Standard deployment

A standard deployment allows you to deploy Remote Desktop Services across multiple servers.

Quick Start

A Quick Start allows you to deploy Remote Desktop Services on one server, and creates a collection and publishes RemoteApp programs.

Installation Type

Deployment Type Deployment Scenario

Server Selection

• Select 'Session-Based Desktop Deployment':

Select deployment scenario

Before You Begin

DESTINATION SERVER Quick Start selected

Before You Begin Installation Type Deployment Type	Remote Desktop Services can be configured to allow users to connect to virtual desktops, RemoteApp programs, and session-based desktops. O Virtual machine-based desktop deployment
Deployment Scenario	Virtual machine-based desktop deployment allows users to connect to virtual desktop collections
Server Selection Confirmation Completion	 Session-based desktop deployment Session-based desktop deployment allows users to connect to session collections that include published RemoteApp programs and session-based desktops.
Select a server	DESTINATION SERVER Quick Start selected

The Quick Start will be deployed on the RD Connection Broker server. To proceed, click Next.

Installation Type Deployment Type Deployment Scenario	Server Pool			Selected Compute	r
Server Selection	Filter:			4	.COM (1)
Confirmation	Name	IP Address	Operating		
				•	
	1 Computer(s) four	nd	>	1 Compute	r(s) selected

- Select Deployment Machine
- Confirm the selection and 'Install'

3.2. Add an RDS License Server

In order to license the RDS Sessions, we need to add a Licensing Server, which will provide the required CALs (Client Access Licenses). To configure the license server follow these steps:

• Open Server Manager >> Remote Desktop Services >> Overview:



• Click on the RD Licensing icon

Select a server

Server Selection	This wizard allows you to install the RD Licent	to add RD Licensing s	ervers to your	deployment. Sele	ct the servers on wh	hich		
Confirmation	to instan the ND Electric	sing role service.						
Results	Server Pool			Selected				
	Filter:			Computer				
				4	.COM (1)			
	Name	IP Address	Operat					
			[
				•				
	<	Ш	>					
	1 Computer(s) found			1 Computer(s) selected			

• Select the server used for RDS, confirm the selection and install

• The RD Licensing is ready and is displayed in the Overview view:



3.2.1. Add CALs to License Server

RDS Sessions require a standard Microsoft Client Access License (CAL) for each connection to the server, these need to be added into the RD Licensing Manager. You may need to purchase additional licenses from Microsoft.

To add CALs on the RDS Host machine follow these steps:

• Open RD Licensing Manager on Start >> All Programs >> Administrative Tools >> Remote Desktop Services > Remote Desktop Licensing Manager

G 2	RD Licensing Manager					
Action View Help						
🖃 🙀 All servers	License Version and Type	License Program	Total Licenses	Available	Issued	Expiry
iansi windows 2000 Ser∿ → C Windows 2000 Ser∿ → C Reports	🖶 Windows 2000 Server - Built-in TS Per De	Built-in	Unlimited	Unlimited	0	Never

• Select 'Activate Server' and follow the Wizard's prompts

ନ୍ନ		RD Licensii	ng Manager				D X
Action View Help							
🖃 🚔 All servers	License Version an	d Type	License Program	Total Licenses	Available	Issued	Expiry
i - 🐼 🛁 🕞 Win	Refresh	r - Built-in TS Per De	Built-in	Unlimited	Unlimited	0	Never
Rep	Review Configuration						
	Install Licenses						
	Activate Server	-					
	Advanced	•					
	Create Report	•					
	Delete Reports						
	Manage Licenses						
	Properties						

- The Wizard will connect you to the 'Microsoft Clearinghouse' where you can activate your previously purchased CAL licenses
- If you need to purchase additional CALs, you will need to do that via: <u>http://go.microsoft.com/fwlink/?LinkId=81077</u>
- After completing the Wizard, the CAL Licenses will be displayed on the RD Licensing Manager:

9.p	RD Licensing Manager						. 🗆 🗙
Action View Help 말 같은 밝혔다.							
All servers	License Version and Type	License Program Built-in	Total Licenses Unlimited	Available Unlimited	lssued 0	Expiry Date Never	Keypack ID 2
	Server 2012 - Installed RDS Per User CAL	Retail Purchase	50	50	0	Never	3

3.2.2. 'No License Server' – Known Issue

If the RDSH server complains about no licensing server being set, please follow the instructions in Appendix B.

3.2.3. Configure the RD Licensing Mode

Configure the RD Licensing Mode:

• Server Manager >> Remote Desktop Services >> Overview >> Deployment Overview >> Tasks >> Edit Deployment Properties:



• Configure 'Per User' mode in the RD Licensing section:

Configure the deployment

Shi RD Gateway	ow All +	RD Licensing
RD Licensing	-	Select the Remote Desktop licensing mode:
RD Web Access Certificates	+ +	Per Device Per User Specify a licence center and then click Adds
		Add
		Select the order for the Remote Desktop license servers: The RD Session Host server or the RD Virtualization Host server sends requests for li- to the specified license servers in the order in which you list them.
		Move Up
		Move Dow
		Remove

• Click OK to finish the license configuration

3.2.4. License Diagnostics

You can see relevant information about licensing in the RD Licensing Diagnoser:

• Open RD Licensing Diagnoser: Start >> Programs >> Administrative Tools >> RD Licensing Diagnoser

%	RD Licensing Diagnoser	_ 🗆 X
File Action View Help		
q∄ RD Licensing Diagnoser:	RD Licensing Diagnoser	Actions
ο RD Licensing Diagnoser:	RD Licensing Diagnoser RD Licensing Diagnoser provides information to help identify possible licensing problems for the Remote Desktop Session Host server. RD Licensing Diagnoser did not identify any licensing problems for the Remote Desktop Session Host server. Remote Desktop Session Host Server Configuration Details Image: Construct of licenses available for clients: 50 Remote Desktop Session Host server version: Windows Server 2012 R2 Active Directory domain: Licensing mode: Per User Image: Per User RD Licensing Diagnoser Information - 0 warning(s) Image: Problem RD Licensing Diagnoser Information - 0 warning (st) Image: Problem	Actions RD Licensin Connect View Refresh Help
< <u> </u>	III > Problem Suggested Resolution Image: Suggested Resolution Image: Suggested Resolution	

3.3. Configure RDS Session Timeouts

Once the RD Client session starts and runs the Citect application, the license it obtains from the SCADA system will not be released until the session is closed.

By default, the RDS session will not terminate just because the RDS Client closes its window to the server. The server will continue to process this session indefinitely.

To keep operators from creating unused sessions, the Remote Desktop Services Host can be setup to automatically end sessions that have been disconnected. In this way the Citect licenses will release properly back to the Citect Server components where they will be available for future sessions.

Below are the required steps to configure an automatic expiry of any disconnected session. This means that a Citect license will not be tied up in a disconnected session for more than 1 minute:

Open Server Manager >> Remote Desktop Services >> QuickSessionCollection >> Properties >> Tasks
 >> Edit Properties

Ъ	Server Manager	
Cor "QuickSess	onCollection 🔹 🍘 🚩 Manage Tools View Help	
Overview	PROPERTIES Properties of the collection TASKS CONNECTIONS Last refreshed on 28/11/20	^
Servers Servers	Collection Type Session Edit Properties	
Collections	Resources RemoteApp Programs	
QuickSessionCollection	User Group Server FQDN. REMOTEAPP PROGRAMS Last refreshed on 28/11/2014 3:06:48 PM Published RemoteA TASKS Filter Ø (E)	111
	RemoteApp Program Name Alias Visible in RD Web Access Calculator Calculator Yes Paint Paint Yes WordPad WordPad Yes	
	HOST SERVERS Last refreshed on 28/11/2014 3:06:48 PM All servers 1 total TASKS	~

• In the Session section, set 'End a disconnected session' to the desired level, i.e 1 minute



• Click OK to validate and finish

3.4. Publish RemoteApp

The following steps show how to publish a RemoteApp in Windows Server 2012 R2:

- Open: Server Manager >> Remote Desktop Services >> QuickSessionCollection >> RemoteApp Programs >> Tasks >> Publish RemoteApp Programs
- By default, Calculator, Paint and WordPad are already published, these can be removed

\mathbf{E}	→ Server Ma	anager • Remo	te Desktop Services • Collections	QuickSessionCollection
	Overview	PROPERTIES Properties of the c	ollection	TASKS CONNECTIONS Last refreshed on 10/06/2
i.	Servers	Collection Type	Session	Filter
Ξ.	Collections	Resources	RemoteApp Programs	Filter
	QuickSessionCo	User Group		Server FQDN
6				
⊗ ⊳				
		REMOTEAPP PROGR	AMS	
		Last refreshed on 10/06/2	015 9:19:50 AM Published RemoteApp programs 3 total	TASKS 🔻
		Filter		Publish RemoteApp Programs
		ruter		Unpublish RemoteApp Programs
		RemoteApp Program Na	me Alias Visible in RD Web Access	
		Calculator	Calculator Yes	
		Paint	Paint Yes	
		WordPad	WordPad Yes	

• Select 'Vijeo Citect Runtime'

Select RemoteApp programs



Select the RemoteApp programs to publish to the QuickSessionCollection collection. To add a RemoteApp program to the list, click Add.

The RemoteApp programs are populated from SYD-VLDN-SVR51.CITECT.COM.

RemoteApp Program	Location	^
🗌 🖳 System Configuration	%SYSTEMDRIVE%\Windows\system32\msconfi	
🗌 🌉 System Information	%SYSTEMDRIVE%\Windows\system32\msinfo3	
🗌 🎣 Task Manager	%SYSTEMDRIVE%\Windows\system32\taskmgr	
🗌 👹 Time Synchronization Config	%SYSTEMDRIVE%\Program Files (x86)\Schneide	
🗌 🔐 Update License	%SYSTEMDRIVE%\Program Files (x86)\Schneide	
🔲 💻 Vijeo Citect Computer Setup	%SYSTEMDRIVE%\Program Files (x86)\Schneide	
Vijeo Citect Runtime	%SYSTEMDRIVE%\Program Files (x86)\Schneide	
🗌 📠 Vijeo Citect Runtime Manager	%SYSTEMDRIVE%\Program Files (x86)\Schneide	≡
🗌 🐚 VirusScan Console	%SYSTEMDRIVE%\Program Files (x86)\McAfee\	
Windows Memory Diagnostic	%SYSTEMDRIVE%\Windows\system32\MdSche	
Windows PowerShell	%SVSTEMDRI\/E%\\Windows\Svstem32\\Window III	~
<u>A</u> dd		

Verify that the program is installed on all the RD Session Host servers in the collection.

• Confirm the selection and publish the RemoteApp

Confirmation		
RemoteApp Programs	Confirm that the list of RemoteApp prog	rams to be published is correct, and then click Publish.
Confirmation	1 RemoteApp program:	
Publishing	RemoteApp Program	Location
Completion	💕 Vijeo Citect Runtime	%SYSTEMDRIVE%\Program Files (x86)\Schneide

• Highlight the new 'Vijeo Citect Runtime' entry, right click and select 'Edit Properties'

\mathbf{E}	● Server Ma	anager 🕨 Remote	Desktop Services • Collections •	QuickSession	Collection
	Overview	PROPERTIES Properties of the colle	ction	TASKS 🔻	CONNECTION: Last refreshed on
1	Servers	Collection Type	Session		
ii:	Collections	Resources	RemoteApp Programs		Filter
i d	QuickSessionCo	User Group			Server FQDN
0					
⊗ ⊳					
		REMOTEAPP PROGRAM	S		
		Last refreshed on 10/06/2015	10:40:09 AM Published RemoteApp programs 4 total	TASKS 🔻	
		Filter		\odot	
		RemoteApp Program Name	Alias Visible in RD Web Access		
		Calculator	Calculator Yes		
		Paint	Paint Yes		
		Vijeo Citect Runtime	Citect32 Yes		
		WordPad	WordPad Yes		
		HOST SERVERS	10:37:22 AM All servers 1 total	TASKS 🔻	
		Filter		\odot	
		Server Name Type	Virtual Desktops Allow New Connections		
		RD Sessi	on Host N/A True		

- Under 'Parameters'
- Set the '/x' flag so that Clients do not load 'Runtime Manager'

Vijeo Citect Runtime (QuickSessionCollection Collection)



 Under 'User Assignment', select 'Only Specified Users and Groups', then click 'Add' in order to add which windows Users / Groups should have access to the RemoteApp

Vijeo Citect Runtime (QuickSessionCollection Collection)

	Show All	
General	+	User Assignment
Parameters	+	-
User Assignmen	nt —	RemoteApp programs can be limited so that only selected users and groups can see the icon when they log on to RD Web Access.
File Type Associ	ati +	Specify the users and groups who should see this RemoteApp program: All users and groups that have access to the collection Only specified users and groups Users and groups: Add Remove
		For a user account to have access to a RemoteApp program, the user account must have access to both the RemoteApp program and the collection to which it is published. Updating the user access at the collection level will not change the user access at the RemoteApp program level.

3.4.1. Custom INI Paths

Custom INI paths can be set for the RemoteApp, this is especially important if you are also running your SCADA Servers on the same machine, or if you have a mix of '**View-Only**' and '**Control**' Clients. It is also possible to specify the license type and override the default citect.ini settings using the switch /I (I for license). For more details see section 1.3.

Ensure any custom INI files are accessable by the intended users.

3.4.1.1 INI Parameters

The INI Parameters that govern which type of license the Client will take are: [Client] ComputerRole

- 0 = Server and Control Client
- 1 = Control Client (enables [Client]FullLicense)
- 2 =View-Only Client

[Client] FullLicense

- 0 = Do not use a full license
- 1 = Use a Full licenese

3.4.1.2 View-Only Client

- Copy, rename and edit the INI file to contain: [Client] ComputerRole = 2
- Under 'General', rename your RemoteApp to indicate it is 'View Only'
- Modify the 'Parameters' to point to this new INI file:
 '/x' to prevent Runtime Manager from loading
 '/i' followed by a custom INI path (encased in double quotes)

Vijeo Citect Runtime (QuickSessionCollection Collection)

Sho	w All	
General	-	General
Parameters	+	Barrata Anna anna anna a
User Assignment	+	RemoteApp program name:
File Type Associati	. +	Vijeo Citect Runtime - View-Only

Vijeo Citect Runtime (QuickSessionCollection Collection)

General	+	Command-line Parameters
Parameters	17 44	
Jser Assignment	+	O Do not allow any command-line parameters
File Type Associati.	. +	O Allow any command-line parameters
		By allowing this RemoteApp program to run with any command-line parameter, your server may be vulnerable to malicious software.
		 Always use the following command-line parameters
		/x //"C:\ProgramData\Schneider Electric\Vijeo Citect 7.50\Config\View.ini"

Alternatively, if you don't want to specify a custom citect.ini file, you can override the local citect.ini role setting to force a view-only client, by using the /l switch in conjunction with /x:
 /x /l:1

3.4.1.3 Control Client

- Copy, rename and edit the INI file to contain: [Client] ComputerRole = 1 [Client] FullLicence=0
- Publish a second instance of the RemoteApp
- Under 'General', rename it to indicate it is a 'Control' Client
- Modify the 'Parameters' to point to this new INI file:
 '/x' to prevent Runtime Manager from loading
 '/i' followed by a custom INI path (encased in double quotes)

Vijeo Citect Runtime (QuickSessionCollection Collection)

Sho	w All
General	_
Parameters	+
User Assignment	+
File Type Associati	+

Vijeo Citect Runtime (QuickSessionCollection Collection)

Sho	w All	Command-line Parameters
Parameters	-	
User Assignment	+	 Do not allow any command-line parameters
File Type Associati +		Allow any command-line parameters
		By allowing this RemoteApp program to run with any command-line parameter, your server may be vulnerable to malicious software.
		 Always use the following command-line parameters
		/x/i"C:\ProgramData\Schneider Electric\Vijeo Citect 7.50\Config\Control.ini

Alternatively, if you don't want to specify a custom citect.ini file, you can override the local citect.ini role setting to force a control client, by using the /l switch in conjunction with /x:
 /x /l:2

4. RDSH Installation (Windows Server 2008 R2)

To install RDS service on your host machine:

• Open Server Manager >> Click Roles and Add Roles

📕 Server Manager		
Eile Action Yiew Help		
🗢 🔿 🙍 📅 🛛		
Server Manager	Roles	
Roles Services Web Server (IIS) Features	View the health of the roles installed on your server and add or remove roles and features	5.
Diagnostics Configuration Of Configuration Of Configuration		Roles Summary Help
Windows Firewall with Adva Services WMI Control Local Users and Groups	Roles: 2 of 17 installed File Services	Add Roles i
🗄 🔚 Storage	Web Server (IIS)	

• Under 'Server Roles', select 'Remote Desktop Services' then click 'Next'

Add Roles Wizard		X
Select Server Rol	es	
Before You Begin Server Roles Remote Desktop Services Role Services Confirmation Progress Results	Select one or more roles to install on this server. Roles: Active Directory Certificate Services Active Directory Domain Services Active Directory Federation Services Active Directory Fights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Application Server DHCP Server DNS Server Fax Server File Services (Installed) Hyper-V Network Policy and Access Services Print and Document Services Web Server (IIS) (Installed) Windows Deployment Services Windows Server Update Services Windows Server roles	Description: Remote Desktop Services, formerly Terminal Services, provides technologies that enable users to access Windows-based programs that are installed on an RD Session Host server or to access the full Windows desktop. With Remote Desktop Services, users can access an RD Session Host server or virtual machine from within your corporate network or from the Internet. > Install Cancel

- Select the following 'Role Services':
 - o Remote Desktop Connection Broker
 - o Remote Desktop Licensing
 - Remote Desktop Session Host
 - Remote Desktop Web Access

Add Roles Wizard		×
Select Role Servi	ices	
Before You Begin Server Roles Remote Desktop Services Role Services Application Compatibility Authentication Method Licensing Mode User Groups Client Experience RD Licensing Configuration Confirmation Progress Results	Select the role services to install for Remote Desktop Services: Remote Desktop Session Host Remote Desktop Virtualization Host Remote Desktop Virtualization Host Remote Desktop Licensing Remote Desktop Connection Broker Remote Desktop Web Access	Description: Remote Desktop Licensing (RD Licensing), formerly TS Licensing, manages the Remote Desktop Services client access licenses (RDS CALs) that are required to connect to an RD Session Host server. You can use RD Licensing to install, issue, and track the availability of RDS CALs.
	< <u>P</u> revious <u>N</u> ext	> Install Cancel

• Take note of the 'Uninstall and Reinstall Applications for Compatibility' warning, then click 'Next' if you wish to proceed



• Depending on your needs, choose whether 'Network Level Authentication' is required

Add Roles Wizard				
Specify Authentication Method for Remote Desktop Session Host				
Before You Begin Server Roles Remote Desktop Services	Network Level Authentication is a new authentication method that enhances security by providing user authentication earlier in the connection process when a client connects to an RD Session Host server. With Network Level Authentication, user authentication occurs before a full Remote Desktop connection to the RD Session Host server is established.			
Role Services Application Compatibility	Specify whether Network Level Authentication is required.			
Authentication Method Licensing Mode User Groups	Only computers that are running both a version of Windows and a version of the Remote Desktop Connection client that supports Network Level Authentication can connect to this RD Session Host server. If you are remotely connected to this server, ensure that your computer supports Network Level Authentication to enable reconnection to this server.			
Client Experience RD Licensing Configuration Confirmation	Do not require Network Level Authentication Computers that are running any version of the Remote Desktop Connection client can connect to this RD Session Host server.			
Progress Results	This option is less secure than when Network Level Authentication is used because user authentication occurs later in the connection process.			

• Choose the correct licensing model for your Client Access Licenses (CALs)

Add Roles Wizard		×
Specify Licensing) Mode	
Before You Begin Server Roles Remote Desktop Services Role Services Application Compatibility Authentication Method	The Remote Desktop licensing mode determines the type of Remote Desktop Services client access licenses (RDS CALs) that a license server will issue to clients that connect to this RD Session Host server. Specify the Remote Desktop licensing mode that you want this RD Session Host server to use. C Configure later Remind me to use the Remote Desktop Session Host Configuration tool or Group Policy to configure the licensing mode within the next 120 days.	
Licensing Mode	O Per Device	
User Groups	An RDS Per Device CAL must be available for each device that connects to this RD Session Host server.	
Client Experience	Per <u>U</u> ser	
RD Licensing Configuration	An RDS Per User CAL must be available for each user that connects to this RD Session Host server.	
Confirmation		
Progress	(i) The licensing mode that you specify must match the RDS CALs that are available from your Remote Deskton license server.	
Results		

• Add the Users or Domain Groups that require RDS Access

Add Roles Wizard		×
Select User Grou	os Allowed Access To This RD Session Host Server	
Before You Begin Server Roles Remote Desktop Services Role Services Application Compatibility Authentication Method Licensing Mode	Add the users or user groups that can connect to this RD Session Host server. These users and user groups will be added to the local Remote Desktop Users group. The Administrators group is added by default and cannot be removed. Users or User Groups: Administrators Administrators Add Remove	
User Groups		
Client Experience		
RD Licensing Configuration		
Confirmation		

• On 'Configure Client Experience', you could leave everything as default and then click on Next

Add Roles Wizard		×
Configure Client	Experience	
Before You Begin Server Roles	You can configure the RD Session Host server so that users connecting to a remote desktop session can use functionality similar to that provided by Windows 7.	
Remote Desktop Services Role Services	Providing this functionality requires additional system and bandwidth resources and may affect the scalability of the RD Session Host server.	
Authentication Method Licensing Mode	Select the functionality that you want to provide. Additional functionality can be configured by using the Remote Desktop Session Host Configuration tool.	
User Groups Client Experience	Selecting audio and video playback or desktop composition will install the <u>Desktop Experience</u> <u>feature</u> on the RD Session Host server.	
RD Licensing Configuration		
Confirmation	Audio and video playback	
Progress	Audio recording redirection	
Results	\Box <u>D</u> esktop composition (provides the user interface elements of Windows Aero)	

• Check 'Configure a discovery scope for RD licensing', select 'This Domain', then click 'Next'

Add Roles Wizard	×			
Configure Discovery Scope for RD Licensing				
Before You Begin Server Roles	The discovery scope for a Remote Desktop license server is used by RD Session Host servers to automatically discover the license server. This does not apply to RD Session Host servers running Windows Server 2008 R2 and applies only to those running Windows Server 2008, Windows Server 2003, or Windows 2000.			
Remote Desktop Services Role Services Application Compatibility	Microsoft recommends that you do not configure a discovery scope for the license server. Instead, you should use the Remote Desktop Session Host Configuration tool to specify a license server for the RD Session Host server to use.			
Authentication Method Licensing Mode	Configure a discovery scope for this license server			
User Groups Client Experience	RD Session Host servers in the same workgroup can discover this license server.			
RD Licensing Configuration Confirmation	RD Session Host servers in the same domain can discover this license server. To configure this scope, this computer must be a member of a domain, and you must be logged on as a domain administrator.			
Progress	O The <u>f</u> orest			
Results	RD Session Host servers from multiple domains in the same forest can discover this license server. To configure this scope, this computer must be a member of a domain, and you must be logged on as an enterprise administrator.			
	🐼 You must be logged in as a member of the Domain Admins group.			
	Select a location for the RD Licensing database:			
	C:\Windows\system32\LServer Browse			

• Confirm selection and click 'Install'

4.1. Setup Remote Desktop Licenses

Installing and configuring a RDS CAL license in Windows Server 2012 R2 has been discussed in the previous chapter. Here it is demonstrated how to use the RDS licensing server available on the local network (domain).

- Launch 'Server Manager'
- In the Left Pane Select 'RD Session Host Configuration'
- In the Right Pane Right click 'Remote Desktop license servers' and select 'Properties'
- Fill in the details of your specified License Server

File Action Weight Struct Weight Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct Struct	🚔 Server Manager				
A Constant Manage Product Pro	File Action View Help				
Bornet Manager Bornet Manager Bornet Configuration: VD-W200B=1-0V Configuration: VD-W200B Configuration: VD-W200B Configuration: VD-W200B	(= -> 2 r 2 r				
Configuration for Remote Desktop Services French De	Server Manager	RD Session Host Configuration: VD-W200	8-1-OV		Actions
Pare 28 Mixes Pare 28	E P Roles	Configuration for Romoto Do	sktop Soccion Host sono	r-	RD Session Host Configuration:
 RemoteAcity Transfer Remote Desktop Icense servers Remote Desktop Icense servers Remote Desktop Icense servers Remote Desktop Icense servers<	Remote Desktop Services	Configuration for Remote De	skiep Session nost server	-	Create New Connection
 Remote Desktop Connection Manager Remote Desktop Connection Streves Remote Desktop Connection Streves Remote Desktop Server (US) 	RemoteApp Manager	You can use Bemote Desktop Session Host Con	iguration to configure settings for new conne	ections, modify the settings of existing	Refresh
whole: We whole Services Manager Personal Virtualization Personal Vi	🖃 🌄 Remote Desktop Connection Manager	connections, and delete connections. You can c	onfigure settings on a per-connection basis,	or for the RD Session Host server as a	
Connection Server (115) Server (115) Foldures Connection Name Connection N	RD Virtualization Host Servers Rersonal Virtual Desktons	whole.			View
Connection Back Configuration Remote Desktop Services Manager Whother Februres Multicont RDP 7.1 kcp Low Februres Multicont RDP 7.1 kcp Low Februres Februres Multicont RDP 7.1 kcp Low Februres Februres Multicont RDP 7.1 kcp Low Februres Februres Februres Multicont RDP 7.1 kcp Low Februres Februres Februres Multicont RDP 7.1 kcp Low Februres Februres Februres Februres Februres Februres Multicont RDP 7.1 kcp Low Februres Februr	RemoteApp Sources			Properties	X
gi Lorning Disprosis Connection Name Connection Scare Connecti	🖃 🙀 RD Session Host Configuration:	Connections	1- 1- 1-		
Image: Storage Image: Stor	of Licensing Diagnosis	Connection Name Connection Type	Transport Encryption Co	General Licensing RD Connection	on Broker RD IP Virtualization
 Web Server (IIS) Polynotics Configuration Windows Freewall with Advanced Security Services Windows Freewall with Advanced Security Services Windows Freewall with Advanced Security Services General Web Emporary folders on exit. Yes Use temporary folders on exit. Yes Beliot temporary folders on exit. Yes Use temporary folders on exit. Yes Benote Desktop licensing mode Per User Remote Desktop license servers Specified license servers: Move Down Move Down Move Down Move Down Move Down Move Down IP Virtualization IP Virtualization	Remote Desktop bervices Manager		tcp Low	Remote Desktop licensing mode	
Petters Pe	🕀 🐚 Web Server (IIS)			Henole Deskep licensing mode	
Degrostics Conjugation Conjugatio	Features			A 111	
 Control Lists Scheduler Windows Firewall with Advanced Security General Delete temporary folders on exit Yes Users Groups Storage Edit settings I belte temporary folders per session Yes Witt Control Users Groups Benote Desktop license servers The Remote Desktop license servers Specified license servers Move Dup Move Dup Move Dup Move Dup Move Dup I brutualization I P Vitualization I P Vitual	Image: The second			Not specified	
Image: Services Services Services Image: Services	Task Scheduler			C Per Device	
General WIL Control WIL Control Will Control Will Control Will Sers and Groups Will Set temporary folders on exit Yes Storage Specified license servers in the order in which the license servers are listed. Specified license servers. Move Up Move Up Move Up Move Down Add Remove OK Cancel Apply It cancel Virtualization Not Enabled OK Cancel Apply It cancel Not Enabled OK Cancel Apply	🗉 🗃 Windows Firewall with Advanced Security	Edit settings		Per User	
WinL Outford Image: Users Image: Outpose	Services	General			
Users User temporary folders per session Yes Groups Groups B Storage Use temporary folders per session Yes Restrict each user to a single session Yes Licensing Fermate Desktop licensing mode RD Connection Broker Move Down RD Connection Broker Move Down RD IP Virtualization Fil IP Virt	Incal Users and Groups	C Delete temporary folders on exit	Yes	Remote Desktop license servers	s
	Users	Use temporary folders per session	Yes	to the specified license servers in	n the order in which the license servers are
B Storage Allow all connections Licensing Iternations B Remote Desktop licensing mode Per User R BC Connection Broker Move Down Member of farm in RD Connection Broker No RD IP Virtualization Add Remove P Virtualization OK Cancel Apply I I P Virtualization Iternation I I I I Virtualization Iternation I I I I Virtualization Iternation I I I I I I I I I I I I I I I I I I I	Groups	Restrict each user to a single session	Yes	listed.	
Licensing	E Storage	🖆 User logon mode	Allow all connections	Constant Frances converse	
Lettorming mode Per User		Licensing		specified license servers:	
Image: Periode Desktop licensing mode Per User Image: Periode Desktop license servers Specified RD Connection Broker Move Down Image: Periode Desktop license servers Move Down RD Connection Broker No RD IP Virtualization Add Remove Image: IP Virtualization Image: Periode Desktop license servers Image: IP Virtual					
Image: Premote Desktop Icense servers Specified RD Connection Broker Move Down Member of farm in RD Connection Broker No RD IP Virtualization Add Remove IP Virtualization OK Cancel Apply I P Virtualization Image: Cancel Apply		Remote Desktop licensing mode	PerUser		Move Up
RD Connection Broker No Member of farm in RD Connection Broker No RD IP Virtualization Add Remove IP Virtualization OK Cancel Apply Image: Connection Broker Not Enabled		Hemote Desktop license servers	Specified		Move Down
Member of farm in RD Connection Broker No RD IP Virtualization Add Remove IP Virtualization Not Enabled		RD Connection Broker			
RD IP Virtualization Add Remove IP Virtualization Not Enabled		Member of farm in RD Connection Broker	No	1	
IP Virtualization Not Enabled OK Cancel		RD IP Virtualization		Add	Remove
OK Cancel Apply		👔 IP Virtualization	Not Enabled		
		L			OK Cancel Apply
		I			

4.1.1. License Diagnostics

The Licensing Diagnosis tool is available to assist troubleshooting any Remote Desktop CAL licensing issues: • Launch '**TSconfig.msc**' from the Windows '**Run**' dialog

🎇 Remote Desktop Session Host Configuration	<u>_ 8 ×</u>
File Action View Help	
RD Session Host Config A Licensing Diagnosis	Actions
Licensing Diagnosis provides information to help identify possible licensing problems for the Remote Desktop Session Host server.	View View
Licenses are not available for this Remote Desktop Session Host server, and Licensing Diagnosis has iden Session Host server.	Help
Remote Desktop Session Host Server Configuration Details	
Number of licenses available for clients:	
Remote Desktop Session Host server version: Windows Server 2008 R2	
Active Directory domain:	
Licensing mode: Not configured	
Licensing Diagnosis Information - 3 warning(s)	
Server Problem	
	1
	J

4.2. Publish RemoteApp

To publish a RemoteApp in Windows Server 2008 R2 follow these steps:

• Start > Administrative Tools > Remote Desktop Services, then click 'RemoteApp Manager'.

嶜 RemoteApp Manager				
Eile <u>A</u> ction <u>V</u> iew <u>H</u> elp				
RemoteApp Manager RemoteApp programs are programs that appear as if they are running on the clien RemoteApp program available to users, Overview	t are accessed through Remote Desktop, and nt's local computer. Before you can make a you must add it to the RemoteApp Programs I	Actions RemoteApp Manager (Local) Connect to Computer Add RemoteApp Programs RD Session Host Server Settings RD Cateway Settings	-	
 RD Session Host Server Settings Change i) Clients will connect to: ✓ Users can only start listed RemoteApp programs on initial connection. (Recommended) RD Gateway Settings Change ii) Clients will use RD Gateway settings defined by their domain's Group Policy. Digital Signature Settings Change iii) No digital certificate is configured. (Using a digital certificate may improve security.) RDP Settings Change iii) Clients will connect with custom RDP 	Distribution with RD Web Access ▲ The TS Web Access Computers group is empty. RemoteApp programs may be unavailable to users. Learn more ③ The RemoteApp Programs list is empty ③ A remote desktop connection for this server is not visible in RD Web Access. Change ④ More about using RD Web Access Other Distribution Options Select a RemoteApp program and choose option below. ● Create .rdp File	 Digital Signature Settings Export RemoteApp Settings Import RemoteApp Settings Refresh View Help 	•	
settings.	 Create Windows Installer Package More about distribution options 			
 Click 'Add RemoteApp Program 	ns'			

• Progress through the Wizard:

RemoteApp Wizard	×
Choose programs to add to the RemoteApp Programs list Select the programs that you want to add to the RemoteApp Programs list. You can also configure individual RemoteApp properties, such as the icon to display.	
Name	[
Security Configuration Wizard	
Sustan Configuration	
System Configuration	
Time Synchronization Config	
Update License	
🗆 🧮 Vijeo Citect Computer Setup	
🗆 🧧 Vijeo Citect Explorer	
🗹 🧧 Vijeo Citect Runtime	
🗌 🚣 Vijeo Citect Runtime Manager	
Windows Memory Diagnostic	
Windows PowerShell	
Windows PowerShell (x86)	
U 4 Windows PowerShell Modules	
Select All Select None Properties Browse	
< <u>B</u> ack <u>N</u> ext > Cancel	

• Select 'Vijeo Citect Runtime' and click 'Properties'

RemoteApp Properties	×
Properties User Assignment	
RemoteApp program name: Vijeo Citect Runtime	
Location:	
ram Files (x86)\Schneider Electric\Vijeo Citect 7.50\Bin\Citect32.exe Browse	
Alias:	
Citect32	
RemoteApp program is available through RD Web Access	
Command-line arguments	
O Do not allow command-line arguments	
C Allow any command-line arguments	
Always use the following command-line arguments:	
/x	
Change Icon	
OK Cancel	

IMPORTANT: Specify "/x" as a command-line argument, this will ensure that only a Client process is run, without the Runtime Manager. This is necessary to ensure that the multiple Client instances do not interfere with each other.

• Select the 'User Assignment' Tab.



- Set your desired security
- We recommend restricting to only the required users or limited domain groups
- In addition you will need to add the user/group to the list of allowed 'Remote Desktop Users', otherwise
 you will get the error below when trying to launch the RemoteApp



• Open 'System Properties' - from the 'Run' dialog, type 'SystemPropertiesRemote'

System Properties	x			
Computer Name Hardware Advanced Remote				
Remote Assistance				
Allow Remote Assistance connections to this computer				
Advanced				
Remote Desktop				
Click an option, and then specify who can connect, if needed.				
C Don't allow connections to this computer				
 Allow connections from computers running any version of Remote Desktop (less secure) 				
Allow connections only from computers running Remote Desktop with Network Level Authentication (more secure)				
Help me choose Select Users				
	_			
OK Cancel Apply				

- Click 'Select Users'
- Add the required Users / Groups.

Remote Desktop Users	? ×		
The users listed below can connect to this computer, and any members of the Administrators group can connect even if they are not listed.			
Administrator already has access.			
Add Remove			
To create new user accounts or add users to other groups, go to Control Panel and open <u>User Accounts</u> .			
ОКС	ancel		
OK Ca	ancel		

4.2.1. Custom INI Paths - View-Only & Control Clients

Custom INI paths can be set for the RemoteApp, this is especially important if you are also running your SCADA Servers on the same machine, or if you have a mix of '**View-Only**' and '**Control**' Clients. It is also possible to specify the license type and override the default citect.ini settings using the switch /I (I for license). For more details see section 1.3.

Ensure any custom INI files are accessable by the intended users.

4.2.1.1 INI Parameters

The INI Parameters that govern which type of license the Client will take are:

[Client] ComputerRole

- 0 = Server and Control Client
- 1 = Control Client (enables [Client]FullLicense)
- 2 = View-Only Client

[Client] FullLicense

- 0 = Do not use a full license
- 1 = Use a Full licenese

4.2.1.2 View-Only Client

- Copy, rename and edit the INI file to contain: [Client] ComputerRole = 2
- Rename your RemoteApp to indicate it is 'View Only'
- Modify the 'command-line arguments' to point to this new INI file:

'/x' to prevent Runtime Manager from loading'/i' followed by a custom INI path (encased in double quotes)

RemoteApp Properties	×
Properties User Assignment	
RemoteApp program name: Vijeo Citect View Only	
Location:	
%SYSTEMDRIVE%\Program Files (x86)\Schneider Electric\Vijeo Citec: Browse	
Alias:	
Citect32	
RemoteApp program is available through RD Web Access	
Command-line arguments	-
C Do not allow command-line arguments	
C Allow any command-line arguments	
• Always use the following command-line arguments:	
/x /i"c:\ProgramData\Schneider Electric\Vijeo Citect 7.50\Config ViewOnly.ini"	

Alternatively, if you don't want to specify a custom citect.ini file, you can override the local citect.ini role setting to force a view-only client, by using the /l switch in conjunction with /x:
 /x /l:1

4.2.1.3 Control Client

- Copy, rename and edit the INI file to contain: [Client] ComputerRole = 1 [Client] FullLicence=0
- Publish a second instance of the RemoteApp
- Under 'General', rename it to indicate it is a 'Control' Client
- Modify the 'Parameters' to point to this new INI file:
 '/x' to prevent Runtime Manager from loading
 '/i' followed by a custom INI path (encased in double quotes)

💁 RemoteApp Properties	<u>?×</u>
Properties User Assignment	
RemoteApp program name: Vijeo Citect Control Client	
Location:	
%SYSTEMDRIVE%\Program Files (x86)\Schneider Electric\Vijeo Citeci Browse	
Alias:	
Citect32 (1)	
RemoteApp program is available through RD Web Access	
Command-line arguments	11
O Do not allow command-line arguments	
O Allow any command-line arguments	
Always use the following command-line arguments:	_
/x /i c: ProgramData (Schneider Electric Vijeo Citect 7.50 (Config	

- Alternatively, if you don't want to specify a custom citect.ini file, you can override the local citect.ini role setting to force a control client, by using the /l switch in conjunction with /x:
 /x /l:2
- Two newly created instances can now be seen on the <u>http://your_server/rdweb</u> page:

Remote D RemoteApp and Des	esktop Services Default Connection	
RemoteApp Programs	Remote Desktop	Help 🔰 Sign out



4.2.2. Alternative Distribution Method

Instead of navigating via the RDWeb webpage, you could also create an .rdp file, or even an installation package, which can be distributed to the Client machines, and run directly.

🕋 RemoteApp Manager		_ 8 ×	
File Action View Help			
 i) Clients will connect to: ✓ Users can only start listed RemoteApp programs on initial connection. (Recommended) RD Gateway Settings Change ii) Clients will use RD Gateway settings defined by their domain's Group Policy. Digital Signature Settings Change A No digital certificate is configured. (Using a digital certificate may improve security.) RDP Settings Change ii) Client will connect with custom RDP settings. 	 populated. Computers in this grou Actions Gennect to Computer Connect to Computer Add RemoteApp Programs Add RemoteApp Programs Add RemoteApp Programs RD Session Host Server Settings RD Gateway Settings Digital Signature Settings Export RemoteApp Settings Import RemoteApp Settings Refresh Create Windows Installer Package More about distribution options Create Windows Installer Package More about distribution options 	· · · · · · · · · · · · · · · · · · ·	
PemoteApp Programs	Show in RD Web Access	_	
Name Path	RD Web Acc Argume		
Vijeo Citect Runtime C:\Program File	es (x86)\Schnei Yes /x -i°c:\F 💽 Create .rdp File		
	Create Windows Installer Package		
	Remove		
	Help	•	

5. Run the RemoteApp

• From another PC, navigate Internet Explorer to: http://your_server/rdweb

	RD Web Acce
Remote Desktop Services Default Connection	
	Help
Domain\user name:	
Password:	
Security (show explanation)	

• Login as a privileged user

	RD Web Acces
Remote Desktop Services Default Connection	
RemoteApp Programs Remote Desktop	Help \mid Sign out
Vijeo Citect	

- We can see our RemoteApp is available
- Launch the App, you may be prompted to enter your credentials again:

Sonnecting to – 🗆 🗙	Windows Security ×
RemoteApp	Enter your credentials These credentials will be used to connect to
Starting Vijeo Citect Runtime	User name Password
Show Details	Domain:
	OK Cancel

• You may be prompted with a dialog asking which local resources you wish to share

• Typically none are required, but this may be project-dependent



- The Client will launch much the same as a local client
- The modified logo and the System Tray messages show that it is running as a RemoteApp
- Unlike a WebClient, the Kernel is still accessible
- On the RDSH machine, Task Manager will reveal the RemoteApp connections, showing additional Citect32.exe instances being spawned under different accounts:

Task Manager									×				
<u>File Options</u> <u>V</u> iew													
Processes Performance	App his	tory Startup User	rs Details Se	rvices									
									_				
Name	PID	Status	User name	CPU	Memory (p	Description			^				
Citect32.exe	12768	Running	Engineer1	00	23,880 K	Runtime							
Citect32.exe	628	Running	Engineer2	00	24,744 K	Runtime			- 10				
Citect32.exe	16580	Running	Engineer3	00	40,464 K	Runtime			- 11				
Citect32.exe	15696	Running	Engineer4	00	23,152 K	Runtime							

6. Appendix A – Installer Known Issue

Note: Group Policies only apply to Domain Accounts. You must use a Domain Account for this workaround.

If the RDS service is already installed when you try to Install VJC, the 'Windows Installer Coordinator', will appear to 'hang' and the installer will never complete.

This problem is caused by an incompatibility with the Embedded MSI technology and the Windows Installer Coordinator. The Coordinator is responsible for keeping multiple MSI installations from running concurrently.

The work around for this issue is to disable the '**Remote Desktop Session Host Windows Installer**' for the duration of the installation:

- Run 'Gpedit.msc' to launch 'Local Group Policy Editor'
- Go to:

Computer Configuration >> Administrative Templates >> Windows Components >> Remote Desktop Services >> Remote Desktop Session Host >> Application Compatibility

- Set "Turn off Windows Installer RDS Compatibility" to <u>ENABLED</u>
- Once this property is turned off, Windows Installer Coordinator should immediately continue to the next task, however, you may need to restart the installation
- This setting can be reverted once the installer has completed



More information on the following KB from Windows Support: http://support.microsoft.com/kb/2655192

7. Appendix B – License Server Known Issue

If the RDSH server returns an error about no licensing server being set, please follow the instructions below.

Use the following query to see what is currently set on the server (use Windows PowerShell running as Administrator):

\$obj = gwmi -namespace "Root/CIMV2/TerminalServices" Win32_TerminalServiceSetting \$obj.GetSpecifiedLicenseServerList()



If there is no licensing server specified in the SpecifiedLSList, we can set this manually using the following command lines:

\$obj = gwmi -namespace "Root/CIMV2/TerminalServices" Win32_TerminalServiceSetting \$obj.SetSpecifiedLicenseServerList("LicenseServerName.DomainName.com")



Running the followings query again to show the value set:

\$obj = gwmi -namespace "Root/CIMV2/TerminalServices" Win32_TerminalServiceSetting \$obj.GetSpecifiedLicenseServerList()

	Administrator: Windows PowerShell	-		x	
PS C:\Windows\system32> \$obj = gumi -namespace "Root/CIMU2/TerminalServices" Win32_TerminalServiceSetting PS C:\Windows\system32> \$obj.GetSpecifiedLicenseServerList()					and the second se
GENUS CLASS SUPERCLASS Oynasiy Relpath Property Count Derivation Seruer Nomespace	2 PARAMETERS PARAMETERS 2 C				
PATH PeturnValue SpecifiedLSList PSComputerName PS C:\Windows\sy	0 (vd stem32> _			~	