ThinRDP Workstation

HTML5 Remote Desktop Client

User's guide

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1 About this document

On this help file you will find information about ThinRDP Workstation. This document is intended for users to set up, configure and learn how to use ThinRDP.
Check the "Getting started" section and follow the instructions to quickly install and configure ThinRDP Workstation.
Look into the "Advanced Settings" section to learn how you can better take advantage of the many features ThinRDP has to offer.

About us:

Cybele Software is a leading provider of software solutions that enable companies to extend their existing technology foundation by integrating with trend-setting technology innovations. Whether you want to improve the user interface for a mainframe application or need to enable remote Web access to Windows desktop applications, Cybele Software has a solution for you.
Since 2004, we have enabled companies to bridge the gap between cutting-edge technologies and proven client/server and mainframe systems. Our team of experienced developers strives to deliver flexible software solutions that increase the efficiency of and usability of legacy systems and data.

Cybele Software products are designed to provide the simplest implementation pathways possible, while ensuring the integrity and security of your existing environment. Our track record of delivering on these commitments is evidenced through our rapidly-expanding, global customer base.

You can find out more about our products and our company on our website at www.cybelesoft.com

2 Introduction

ThinRDP is a web application that allows users to **access** their **Windows Desktops remotely** from any device of their preference.

Why ThinRDP?

1. Users can have access to all of their remote programs, documents, files, and network resources from anywhere as if they were in front of the remote machine.

2. It doesn't matter which device they have. It can be an iPhone, iPad, Android tablet, ChromeBook or any other device with a HTLM5 compliant browser.

3. The first seat is free! You can check out how great it is, before expanding the use to the rest of your company.

Technology details:

The application takes advantage of the **HTML5** technology and interoperate with almost every platform and browsers.
ThinRDP does not require Flash, Java, ActiveX, Silverlight or any other setup on the end-user side and can be used from almost any device.

Furthermore, ThinRDP grants access to desktops running on Windows Terminal Services. You can even remote into RDS / VDI platforms, such as session-based applications or virtual desktops.

Thanks to ThinRDP's cross-browser, cross-platform capability, Windows, Mac OS X, Linux, Android and iOS users can remote log in into Windows desktops and work with single applications through their favorite browser. The application supports Internet Explorer 9, Firefox, Chrome, Safari, and other HTML5 capable web browsers. IE8 and earlier versions may be enhanced with HTML5 features by the addition of the Chrome Frame plug-in.

See more:

Architecture

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Getting Started

Customizing ThinRDP

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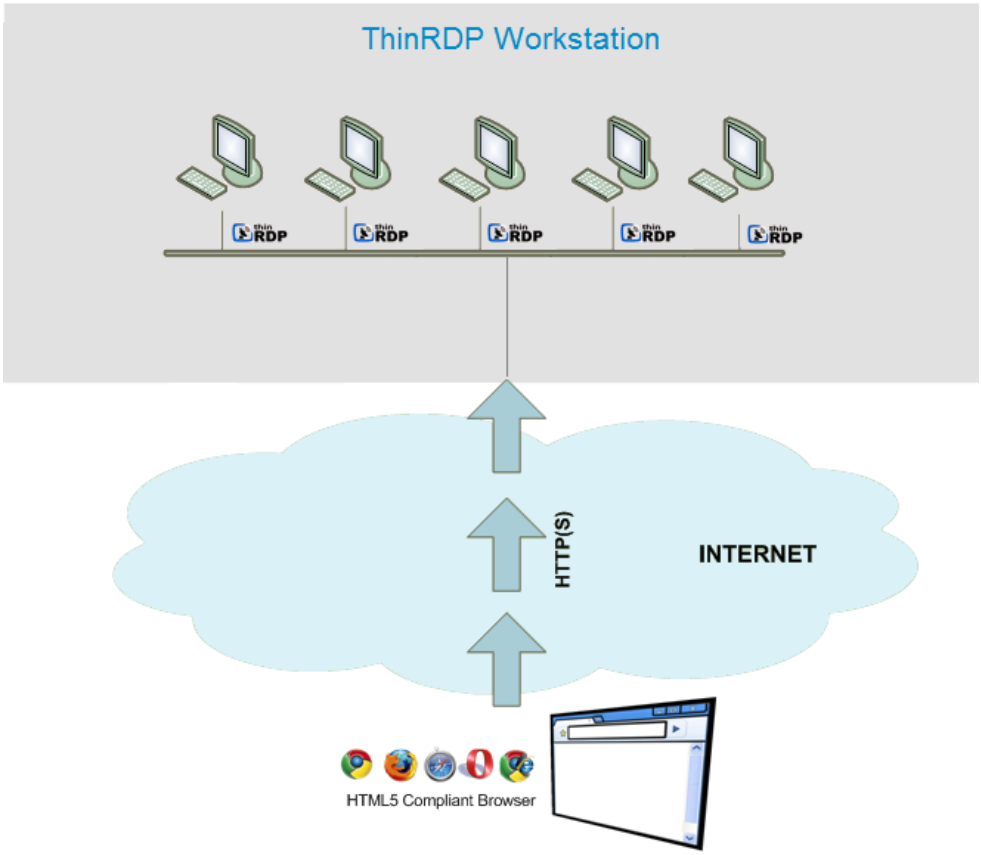
3 Architecture

ThinRDP Worskstation is composed of a pure HTML5-based client that connects via HTTP/s to the machine where ThinRDP should be installed.

When the end-user accesses the ThinRDP main page and enters the appropriate connection parameters, the Web Client connects to the ThinRDP Workstation using Ajax and WebSockets (if available). Once the connection is established, ThinRDP interprets RDP commands, optimizes them for the web, and sends the resulting data stream to the ThinRDP Web Client.

ThinRDP Workstation installed in many network machines:



Requirements:

ThinRDP Web Client

- HTML5 Web Browser compliant

ThinRDP Workstation

- Windows XP 32-bit / Windows XP 64-bit
- Windows Vista 32-bit / Windows Vista 64-bit
- Windows 7 32-bit / Windows 7 64-bit
- Windows Server 2008 32-bit / Windows Server 2008 64-bit

4 Security

Security and privacy are essential when accessing remote desktops through the Internet. ThinRDP Workstation provides a reliable, state-of-the-art security that keeps the exchanged information safe.

Secure connections

All the connections to ThinRDP from the browser are performed over HTTPS. ThinRDP provides you with the means to install your own 256-bit SSL certificate.

Authentication levels

ThinRDP allows you to set different authentication levels. You can choose a simple User/Password authentication and specify your own credentials, or NTLM authentication, which will enable you to authenticate against Windows local or domain users.

5 Getting Started

Use this section to cover the fundamental aspects of ThinRDP in order to get started.

You will learn to install and use ThinRDP in a simple step by step guide so that you can start enjoying its benefits in a matter of minutes:

1. Installing ThinRDP
2. Configuring ThinRDP
3. Using ThinRDP for the first time

Find a more exhaustive reference of the available options here:

Customizing ThinRDP

Using ThinRDP

Mobile devices

Advanced Settings

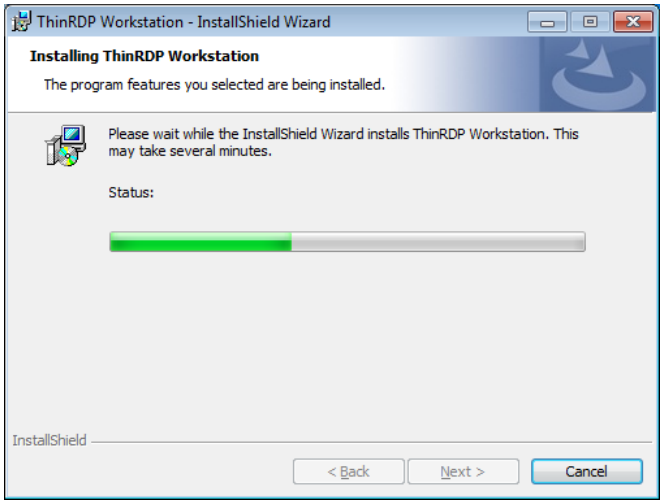
5.1 Installing ThinRDP

ThinRDP is simple to deploy. All you need to do is install it on the machine you want to access remotely.

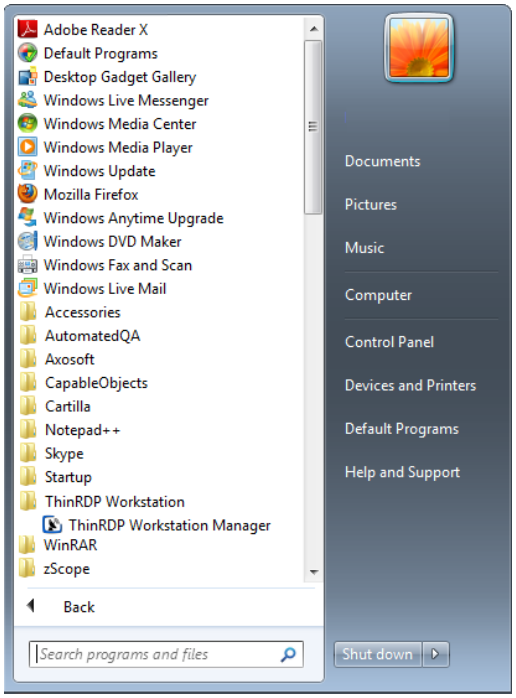
1. Download the installer from this link:

   http://www.cybelesoft.com/downloads/ThinRDPWorkstationSetup.exe

2. Execute the installer on the target machine.



3. Look for the "*ThinRDP Workstation Manager*" in the Start Menu.



5.2 Configuring ThinRDP

In most cases, the embedded defaults will work well and it will not be necessary to make any setting changes before starting to use ThinRDP.

If you want to make sure everything is running as expected before using the application for the first time, Verify the communication Settings and Enable RDP connections.

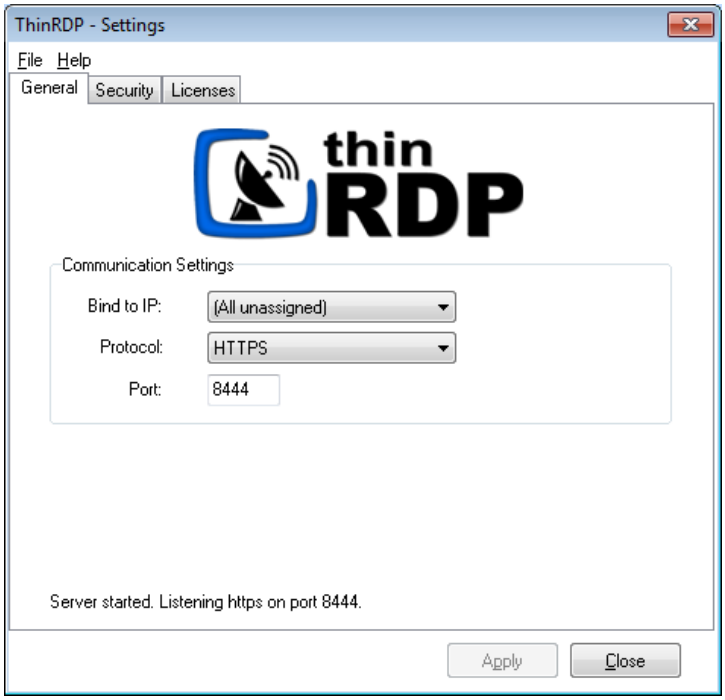
After that you can go on and Use ThinRDP for the first time.

5.2.1 Verifying the communication Settings

ThinRDP listens on port 8444 by default. If you are not using this port yet it won't be necessary to change the ThinRDP port.
Check whether ThinRDP is running looking at the status message of the "General" tab, located on the bottom of the window. It should say "Server started. Listening https on port...".

If you see the message "Could not bind socket. Address and port are already in use", it means that you will have to use another port since this one is already in use by another application.

1. Identify a port number that is not used yet in the computer where you have installed ThinRDP Worskstation.



2. Change the port number on the ThinRDP Workstation Manager General tab.

3. Press "Apply".

4. Verify whether ThinRDP is running in the status message of the "General" tab, located on the bottom of the window. It should say "Server started. Listening https on port...".

5.2.2 Enabling RDP connections

In order to make Remote Desktop connections through ThinRDP you will have to enable the Windows RDP connections:

For Windows 7 or Vista:

1. Click the "Start" (Orb)
2. Right click on "Computer" and go to "Properties"
3. In the left column search for "Remote Settings"
4. A new window will pop-up
5. In the "Remote Desktop" section you have options to enable RDP
6. Choose the correct option and click "Apply - OK"

For Windows XP or 2000:

1. Click the "Start"
2. Right click on "Computer" and go to "Properties"
3. A window will pop-up
4. Go to the "Remote" Tab
5. In the "Remote Desktop" section there is a checkbox to enable allow this.
6. Click "Apply - OK"

5.3 Using ThinRDP for the first time

1. Open your preferred web browser.

2 . Type into the address bar https://127.0.0.1:8444/ . You can also change the 127.0.0.1 part with the server IP address or DNS name where ThinRDP Workstation was installed.

3. If you want to change the RDP connection settings, press the plus (+) button located on the right upper corner. The application will make the tabs Display, Experience, Advanced and Printer visible.

4. Configure your personal settings, if you want.

5. Enter the remote desktop username and password you will login in with.

6. Press Connect.

7. At this moment you are already connected remotely to the desktop. You should be seeing it on your browser as if you were in front of the computer.

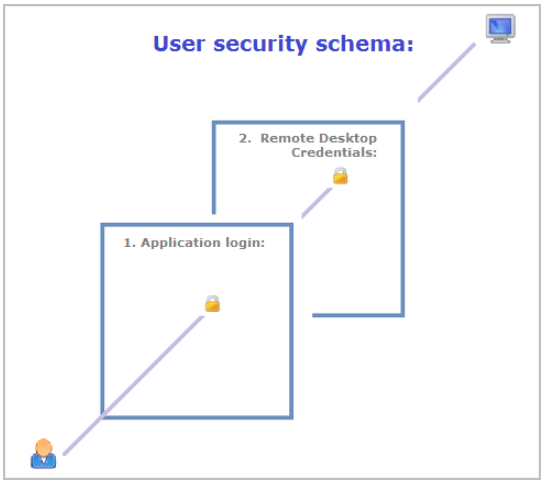
6 Customizing ThinRDP

Once you have installed ThinRDP and have connected for the first time, you can configure it better by following these steps:

1. Set the security level
2. Test internal access
3. Configure internet access

6.1 Setting the access security level

The application administrator can set two user access security levels.



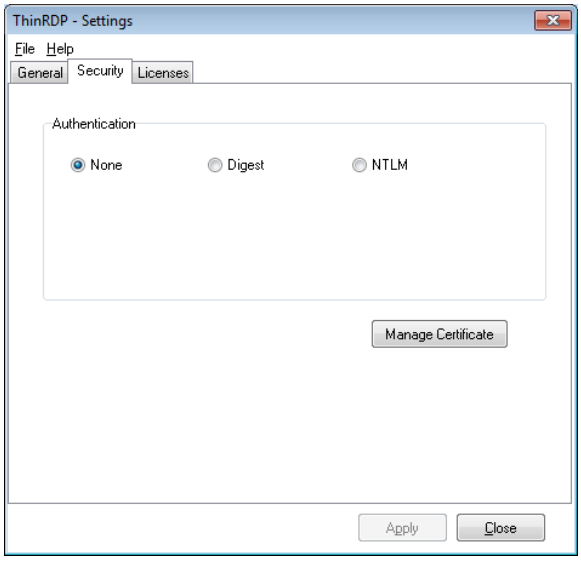
1. Application Login:

The first level provides access to users into the ThinRDP application.
You can set three different authentication modes to access the application: None, Digest and NTLM.

2. Remote Desktop Credentials:

Once logged into the application, the users will have to provide the remote desktop credentials.
If you set up "NTLM" as authentication mode, the application will use the same ThinRDP credentials to log into the remote machine (*Single Sign-on)* and won't ask the user again for credentials.

In order to set up the application access security control, go to the "Security" tab in the ThinRDP Workstation Manager:

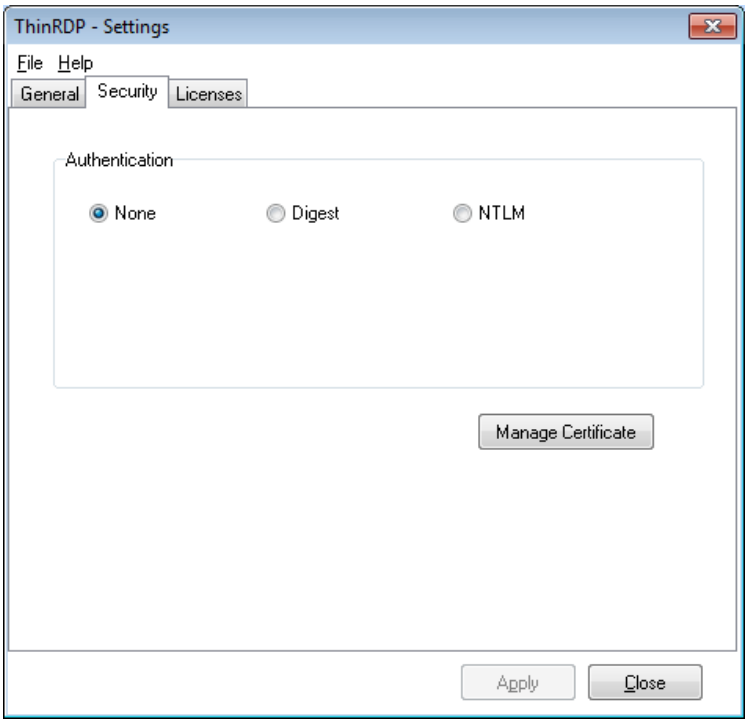


6.1.1 None

When you first install ThinRDP, the authentication will be set to "None", in other words it will have no login required.

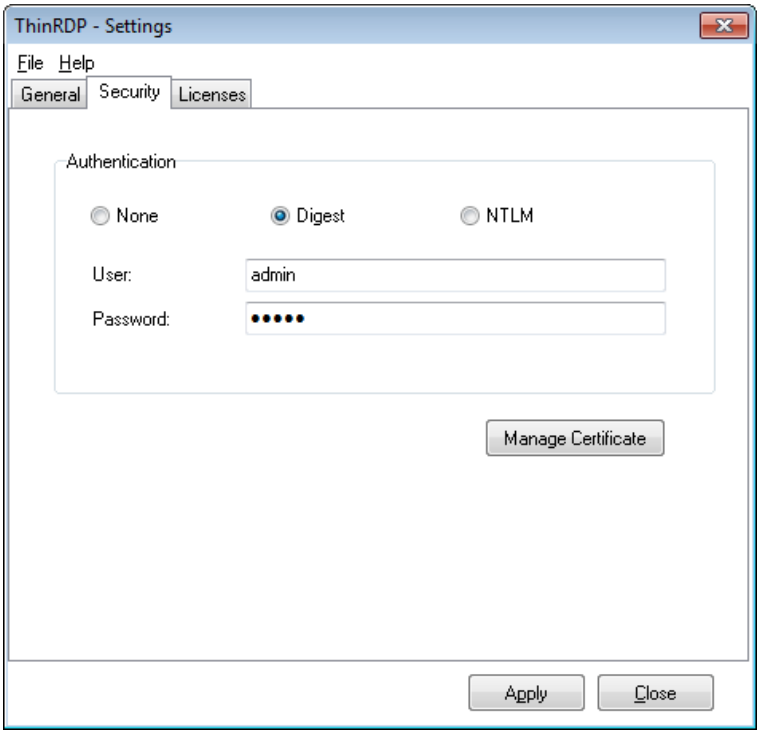
When you set the security to None, it means that everyone will have access into the ThinRDP application without identifying themselves and so the first security level will be disabled.

This option is only recommended for local use.



6.1.2 Digest

When you choose this kind of access security level, you will be able to create a single user name and password. This way, all users will have to use the same credentials (user name and password) to get into the application.



To set up this authentication mode, follow these steps below:

1. Choose the authentication level by selecting "Digest" and specify your own credentials.

2. The default credentials are user "admin" and password "admin". We suggest you to change at least this default password.

3. Press "Apply" when you are done.

4. When you access the application via web browser, provide this user name and password to get into ThinRDP Workstation.

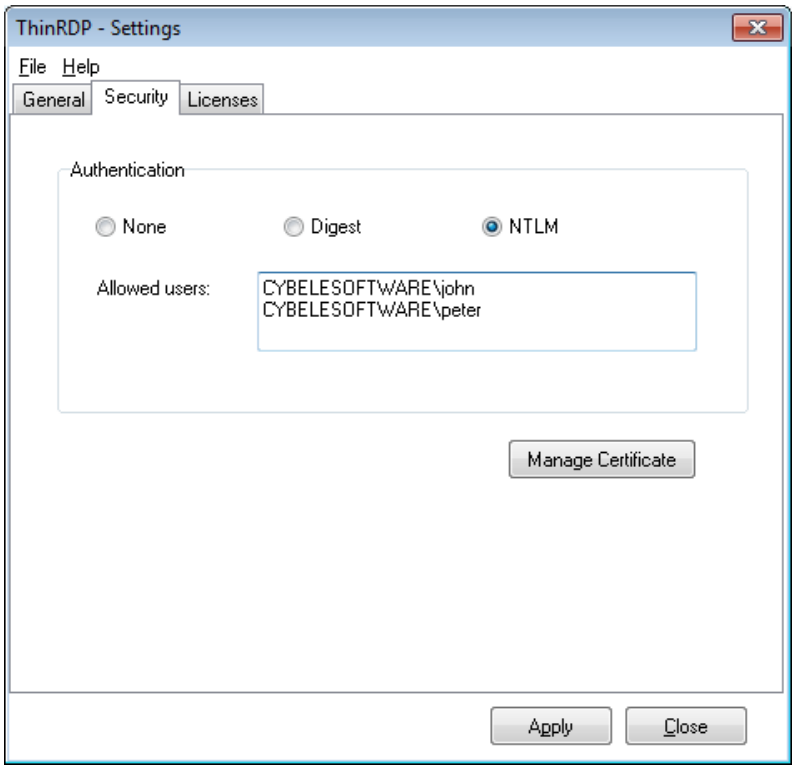
6.1.3 NTLM

Choose "NTLM" to use Integrated Windows Authentication, taking advantage of the current company's security policy.
If you need to restrict the application access with Active Directory Authentication or unify the application and the remote machine authentication in a Single Sign-on schema, you might use this authentication mode.

1. In order to use the "NTLM", you should set this option as the authentication mode on ThinRDP Workstation "Security" tab.

2. Specify the users that will be allowed to access this computer by entering domain\username or username@domain. Separate users per line or using a semi-colon.

3. Use the '*' character as a mask to select all domains for a user (*\username).



Users will be prompted by the browser to enter their username in the format domain\username with the corresponding password.
ThinRDP will always try to log into the remote machine using the same credentials provided when entering the application. It will work as a Single Sign-on schema.

6.2 Testing internal access

Once the remote desktop is ready to receive RDP connections and you have set the port and authentication level in ThinRDP, you should be able to access it internally by typing into a web browser: https://internal-ip:port

After accepting the certificate and informing the credentials you will see ThinRDP's main web interface:

That means that ThinRDP is running and you can use it within the LAN.

6.3 Configuring internet access

After you verified that ThinRDP is running internally, you can make it available from the internet. If you have a static IP/domain, you might prefer providing internet access through your own external IP.

1. Test the access

Test the internet access by typing into a browser the following url:

https://external-ip:port
or
https://your-domain:port

2. Configuring the router:

Providing access to the internet through the external IP/domain, will require you to forward the port manually:

2.1. Port Forwarding:

a. Access the router by typing into a web browser the IP for the Default Gateway.
b. Authenticate with the router credentials.
c. Go to the port forwarding section and pick a port for internet access. It can be the same port number as the one ThinRDP is running on, or a different one.
d. Forward the internet port to the machine internal IP where you have installed ThinRDP and the port where it's running.
e. Save the changes.

If you need help configuring the router, contact us at **support@cybelesoft.com**

6.4 After customization

If you have already customized ThinRDP, check out the following sections to see how your changes will reflect on ThinRDP Web application:

Using ThinRDP from the Web

Connecting from Mobile Devices

7 Using ThinRDP

This section was designed to be a quick User's Guide and it is focused on the everyday use of ThinRDP Workstation.

1. Logging In
2. Connecting
3. Toolbar
4. Features
   - 4.1 File Transfer
   - 4.2 Remote Printer
   - 4.3 Remote Sound
5. Disconnecting

Read also the Mobile devices section, to learn how to use ThinRDP Workstation on these devices.

7.1 Logging In

1. Open your preferred web browser.

2. Type into the address bar http(s)://thinRDPWorkstation_IP: thinRDP_port/ .

3. Enter your credentials (username and password) provided by the system administrator.

4. Press the "Log in" button.

7.2 Connecting

After have Logged in you will be redirected to the ThinRDP Workstation Start Page:

1. Enter the username and password to the remote machine (these fields are optional).

2. If you want to modify the RDP settings before connecting, press the options button (plus (+) sign on the right upper corner) and you will have the settings tabs below available to configure them. RDP settings are different options the users can configure to enhance ThinRDP experience and adjust it to their need.

The General tab

The Display tab

The Resources tab

The Experience tab

The Advanced tab

These settings are stored per browser, enhancing the user experience.

3. Press Connect.

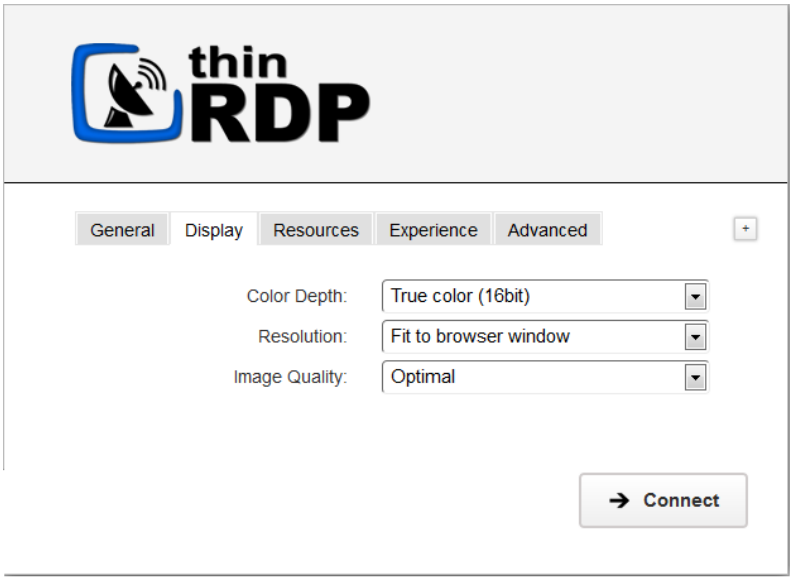
4. At this moment you are already connected remotely to the desktop. You should be seeing it on your browser as if you were in front of the computer.

7.2.1 General

The web interface "General" tab presents you with these following options:

User Name	Enter the user name to authenticate against the remote computer.
Password	Enter the password to authenticate against the remote computer.

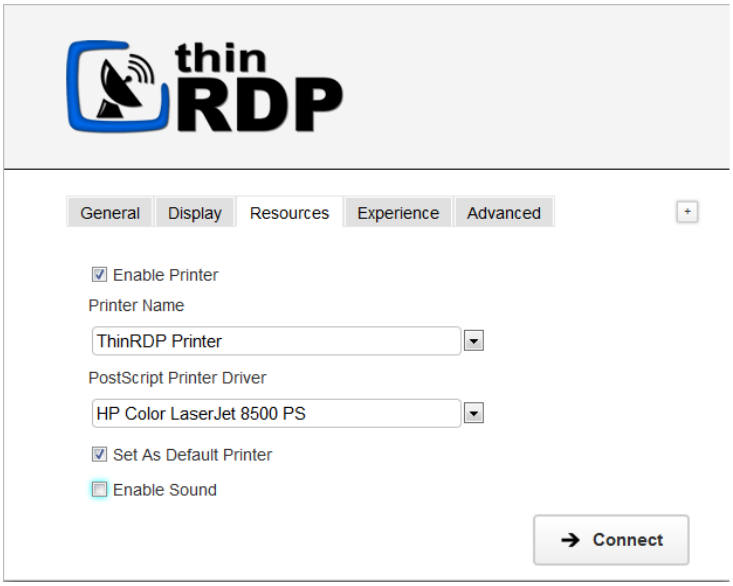
7.2.2 Display



The web interface "Display" tab presents you with these following options:

Color Depth	Choose the color depth for the remote computer view.
Resolution	Choose from the available list of resolutions including "Fit to browser window" and "Fit to screen", ideal for hiding the browser and working on a full screen mode.
Image Quality	The connection image quality is a lot related with the application performance (higher quality=lower performance). The default Image quality is Optimal, because it presents the best cost benefit between quality and performance cost. If you need to have more quality or better performance, take a look on the other options below: Highest - Works only with PNG images and has no compression (0% compression) Optimal - Combines PNG and JPEG images (20% compression). Good - Works only with JPEG images (40% compression) Faster - Works only with JPEG images (50% compression).

7.2.3 Resources



On this tab you can configure the ThinRDP PDF Printer.
These are the options you will find on the ThinRDP' profiles editor "Resources" tab:

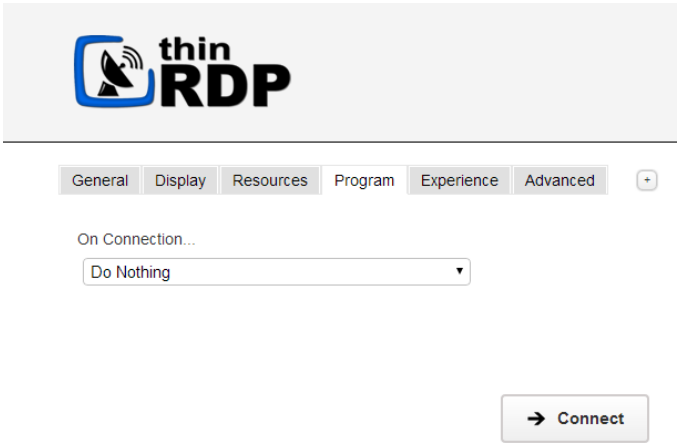
Enable a Remote Printer	Uncheck this option to disable ThinRDP PDF printer.
Printer name	Specify the printer name that you want to be shown on the remote machine's printer list.
PostScript printer driver	This is the driver to be used by ThinRDP in order to print the remote documents. The "*HP Color Laser Jet 2800 Series PS*" driver is compatible with 2008 Windows versions. The "*HP Color LaserJet 8500 PS*" driver is compatible with 2003 Windows versions. Despite the fact this field is a drop-down menu, you can still type in any other driver that is not listed on the menu. So, if you are not using 2003 or 2008 Windows versions, look for a driver that is already installed on the OS and inform this driver name on this field.
Set as default printer	Mark this option to make ThinRDP printer the remote machine default printer.
Enable Sound	Check this option to enable the remote sound to be reproduced within the browser. The remote sound works only with Firefox and Chrome web browsers.

Sound Quality	Determines what quality ThinRDP will use to reproduce the remote sound. The highest quality, the most resources will be required.

This is how the Resouces tab will look after enabling the Sound feature.

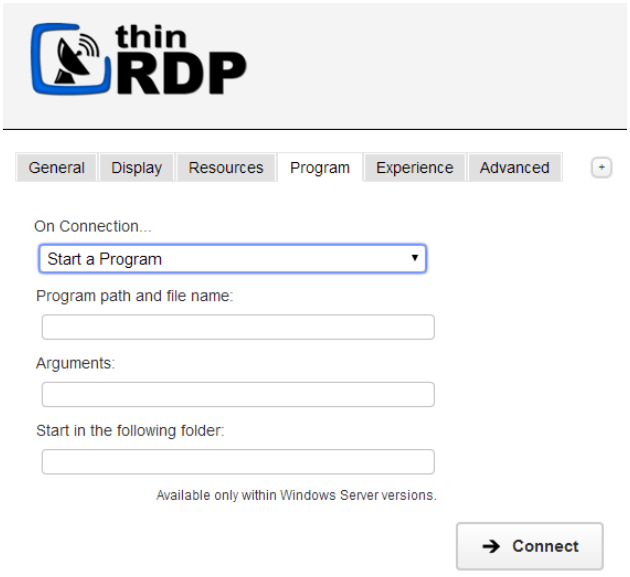
7.2.4 Program

This tab allows users to configure the connection in order to open a specific application. By default ThinRDP comes with the "Do nothing" option marked. This option will show the whole remote desktop.



Start a Program:

If you want to set a specific application to start with the connection. Select the "Start a Program" option.
This feature is only available within Windows Server versions.
Once you close the program, the remote session will get disconnected.

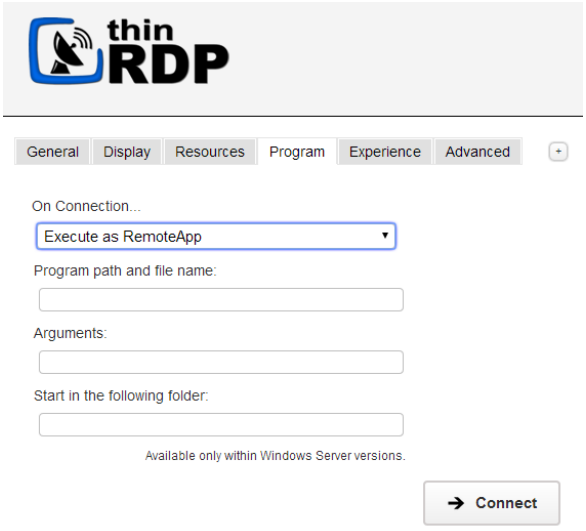


When the "Start a Program" option is selected, you will be presented with the following options:

Program path and file name	Specify the complete path to give access the application you want to start with the connection. Right after the path you should also inform the application arguments, if they exist.
Arguments	Applications arguments.
Start in the following folder	Inform a context directory for the program set on the field "Program path and file name"

Execute as RemoteApp:

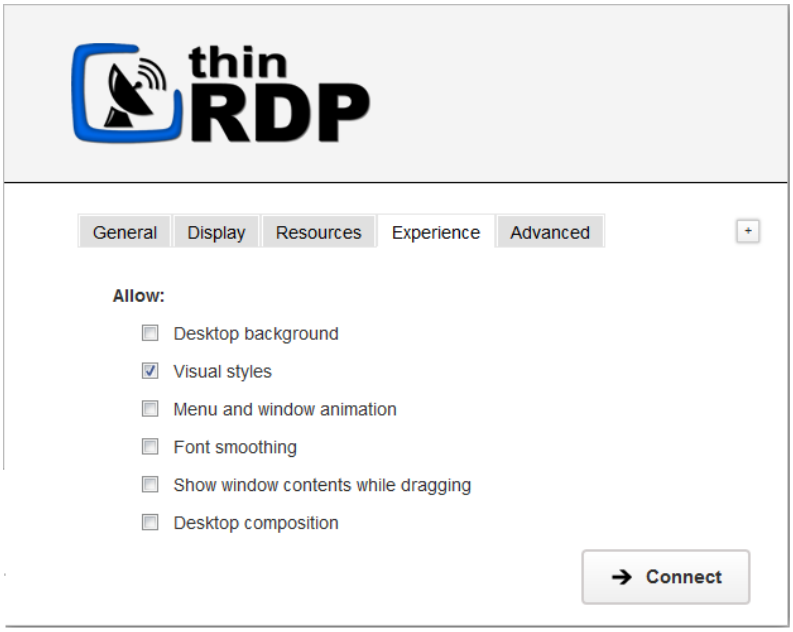
The RemoteApp is a Terminal Services feature that allows Windows®-based application publishing. You can connect to an application using RemoteApp through ThinRDP, by selecting the "Execute RemoteApp" on the Program tab.



When the "Execute as RemoteApp" option is selected, you will be presented with the following options:

Program path and file name	Application published name or the direct path to the application file.
Arguments	Applications arguments.
Start in the following folder	Specify a context directory for the program set on the field "Program or file"

7.2.5 Experience



The web interface "Experience" tab presents you with these following options:

Desktop Background	Check this option to show the desktop background.
Visual Styles	Check this option to show Windows Visual Styles: the appearence of common controls, colors, bordes, and themes.
Menu and Windows Animation	Check this option to show menu and windows animation when you scroll or expand a drop down menu.
Font Smoothing	Check this option to allow "Clear Type", a font smoothing option added to Windows Server 2008.
Show Window Content While Dragging	Check this option to show the contents of the window while being dragged. Otherwise a transparent border is dragged.
Desktop Composition	Check this option to configure the DWM to redirected the desktop drawing to off-screen surfaces in video memory. Also, the desktop will present many visual effects.

All of these options enhance the look of the remote desktop and use more bandwidth.

7.2.6 Advanced

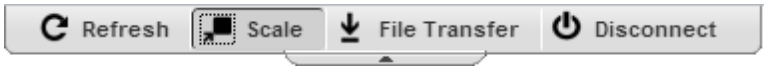
The web interface "Advanced" tab presents you with these following options:

Unicode Keyboard	Uncheck this option to connect to Unix computers through xRDP.
Connect to console session	Check this option to connect to the console session. This require confirmation from the logged on user and log out the current session.
Websocket compression	Check this option to enable the compression for the exchanged Websocket data and have the application performance improved.
Relative mouse movement	The relative mouse movement is a mouse behaviour encountered in touch screen mobile devices, in which the screen cursor moves relatively to the touch. Uncheck this option to have a mouse behaviour similar to the real desktop mouse in which the cursor will be always positioned under the touch.

7.3 Toolbar

Once a connection is established you will see on the top of the screen a small arrow, that will give you access to the connection toolbar.

Click on the connection middle top arrow, and the toolbar below will appear.



Refresh	The Refresh button performs a reconnection with the server, using the same parameters as the current connection, except for the screen size values, that will be updated to the current screen size (only if scale is on).
Scale	By clicking on this option, you will have the connection image scaled. The original desktop size will be the maximum limit size applied to the connection.
File Transfer	Click on the File Transfer button to go to the File Transfer Manager.
Disconnect	Click to close the connection.

7.4 Features

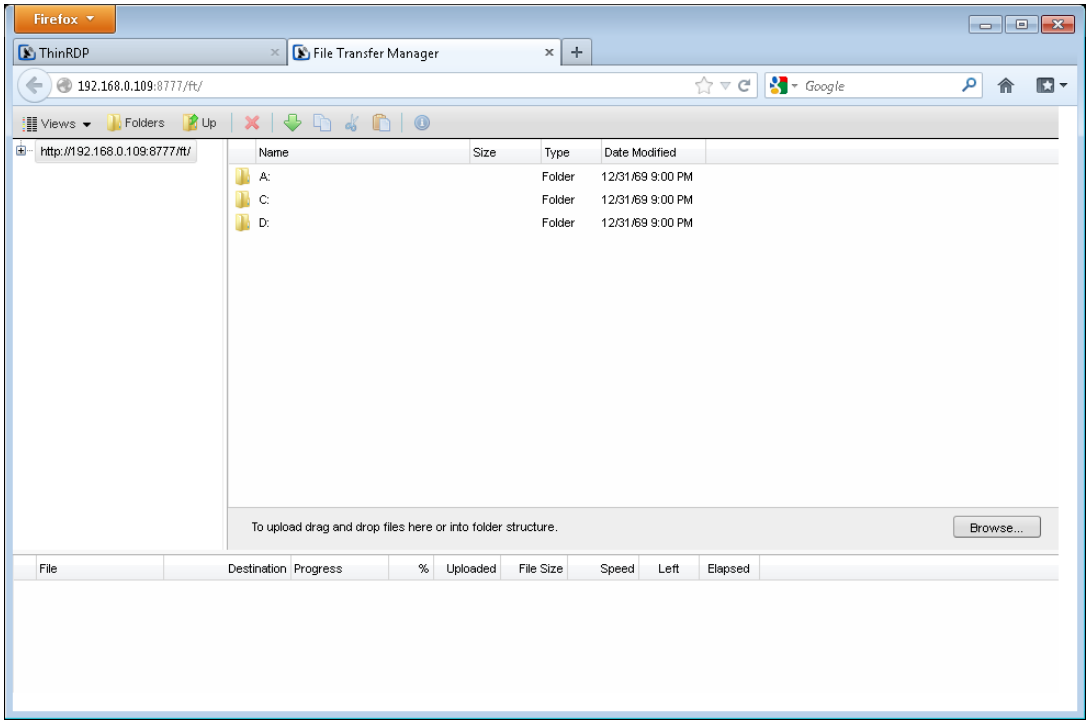
7.4.1 File Transfer

Once a connection is established you have the possibility to perform File Transfers operations between the remote machine and the local computer:

1. Click on the connection middle top arrow, and the toolbar will be presented.

2. Click on the "File Transfer" button.

3. The "File Transfer Manager" window will be open. This is the screen where you can manage files and transfer them.



4. Observe that ThinRDP Workstation gives you access to the remote desktop disks.

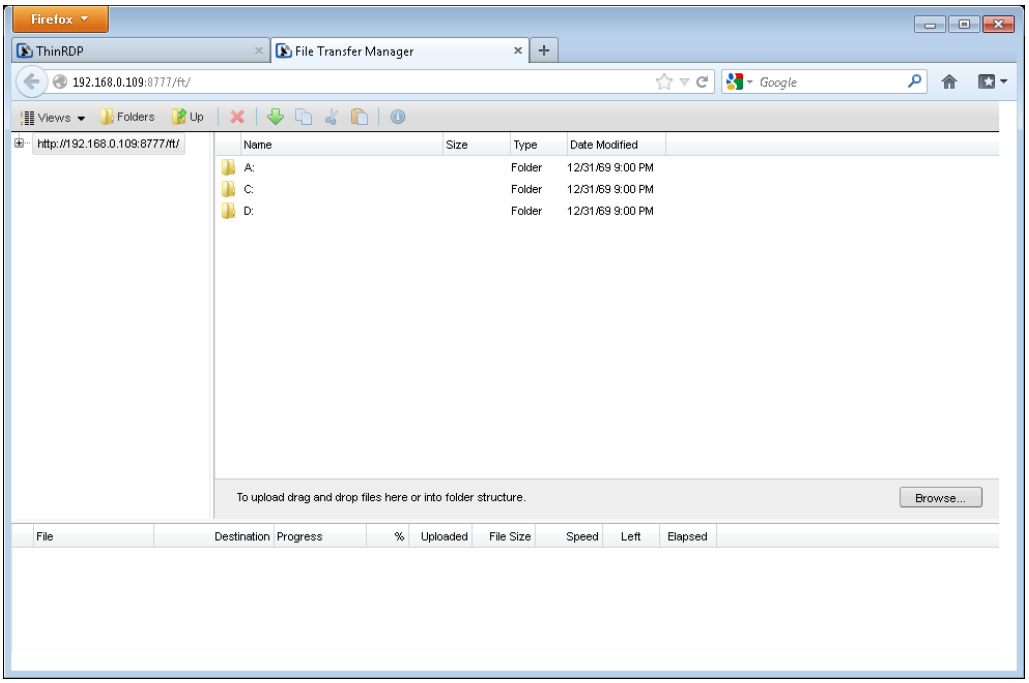
5. Read also, the following sections:

Navigating on the File Transfer Screen
File Options
Folder Area Options

7.4.1.1 Navigating

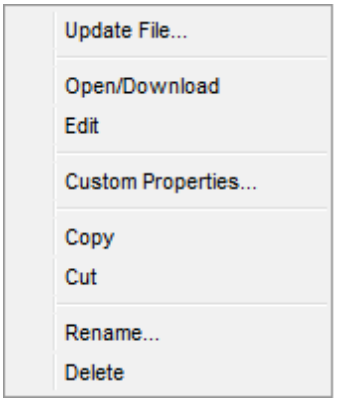
On the upper part of the screen you will see your remote files and folders. Browse to the remote location by double clicking on the folders on the right, or expanding the tree structure on the left.

In order to upload files, drag them from your local PC and paste them into the remote view area, or press the 'Browse' button.
The lower part of the screen shows the status of the files to be transferred.



7.4.1.2 File Options

Right click on a remote file to access these options:

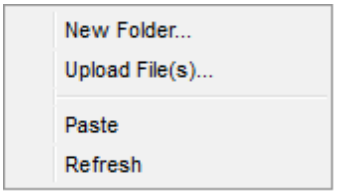


Find the behaviour for each one of these options below:

Update File	Choose this option to replace the selected remote file with a local file.
Open/Download	Choose this option to open or download the selected file.
Custom Properties	Choose this option to see the remote file's properties.
Copy	Choose this option to copy the file into the remote clipboard. You can paste it into another remote folder.
Cut	Choose this option to cut the file into the remote clipboard. You can paste it into another remote folder.
Rename	Choose this option to change the name for the remote file.
Delete	Choose this option to delete the selected file.

7.4.1.3 Remote Folder Area Options

Right click on the blank remote folder area any time to access the following options:



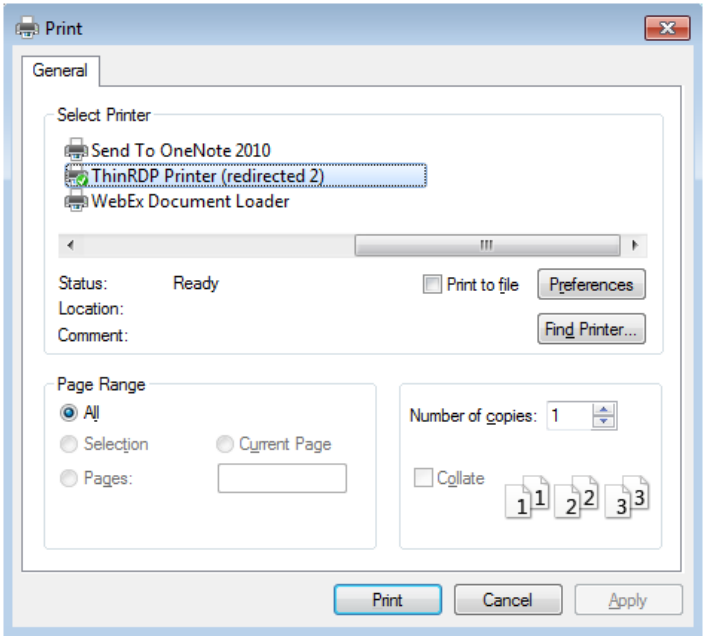
Find the behaviour for each one of these options below:

New Folder	Choose this option to create a new folder in the remote location.
Upload File(s)	Choose this option to upload one or more files to the remote location.
Paste	Choose this option to paste a remote file that is in the clipboard into the remote location. It will be enabled only after you have copied a file into the clipboard.
Refresh	Choose this option to refresh the view of the remote folder.

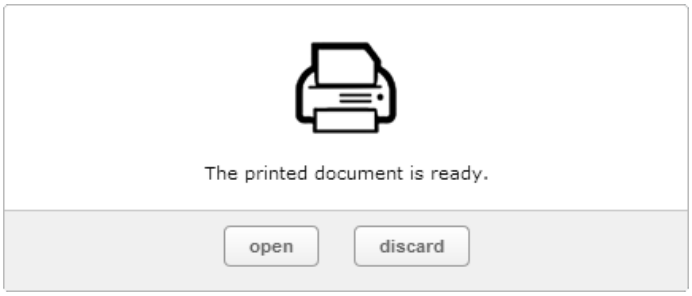
7.4.2 Remote Printer

The ThinRDP Remote Printer allows you to print any remote document locally. If the Remote Printer is enabled to a connection, every time you print a document, the ThinRDP Printer will be shown among the list of available printers.

1. Open a remote document and try to print it.



2. Select ThinRDP printer and press "Print".
3. A message will be presented to let you know that the document is ready to be printed.



a. Click on "open" and the document will be open on a new browser tab in a PDF format. From there you can print it as you may print any other PDF document.
b. Click on "discard" if you want to cancel the printing.

7.4.3 Remote Sound

With ThinRDP you can listen to the sound that is playing on the remote machine.
Try playing any sound on an open connection and check out if you can listen to it locally.

If you are having problems playing the remote sound locally, verify if some of the following conditions are taking place:

1. The remote sound is not enabled for your connection. If you are using profiles ask to the system administrator to enable it. If not, learn how to enable it on Resources tab topic.

2. You are using a non supported browser for remote sound. The only supported browsers so far are Firefox and Google Chrome.

3. The speakers of your local machine are not connected or do not work correctly at the moment.

7.5 Disconnecting

1. Click on the connection middle top arrow, and the toolbar will be presented.

2. Click on the "Disconnect" button.

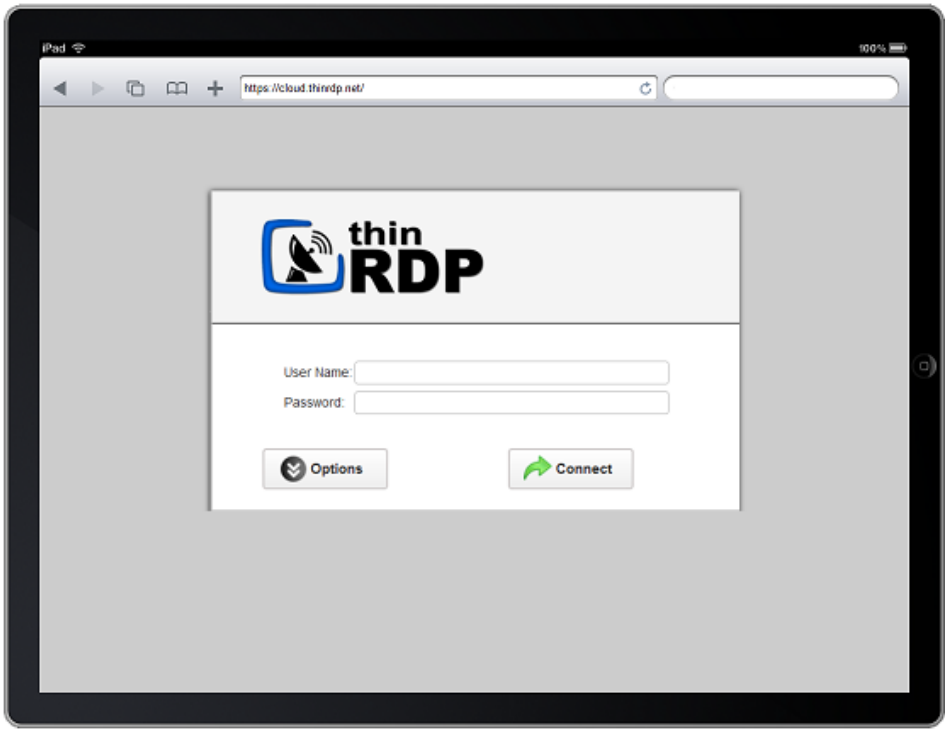
You can disconnect an active connection by closing the browser tab or performing a Windows logoff as well.

8 Mobile devices

A great advantage you have using ThinRDP is the possibility to access remote desktops from many different devices.

Any HTML5 compliant device can became a client of the application: iPhone, iPad, Android tablet, Chrome Book and many more.

Access the ThinRDP URL from a mobile or tablet and you will have a fully adapted interface to make the connection easier, as well as good performance and usability options specially designed for mobile devices.



Most of the mobiles and IPads are Touch Screen and it is through this screen touch you are going to control both remote desktop mouse and keyboard.

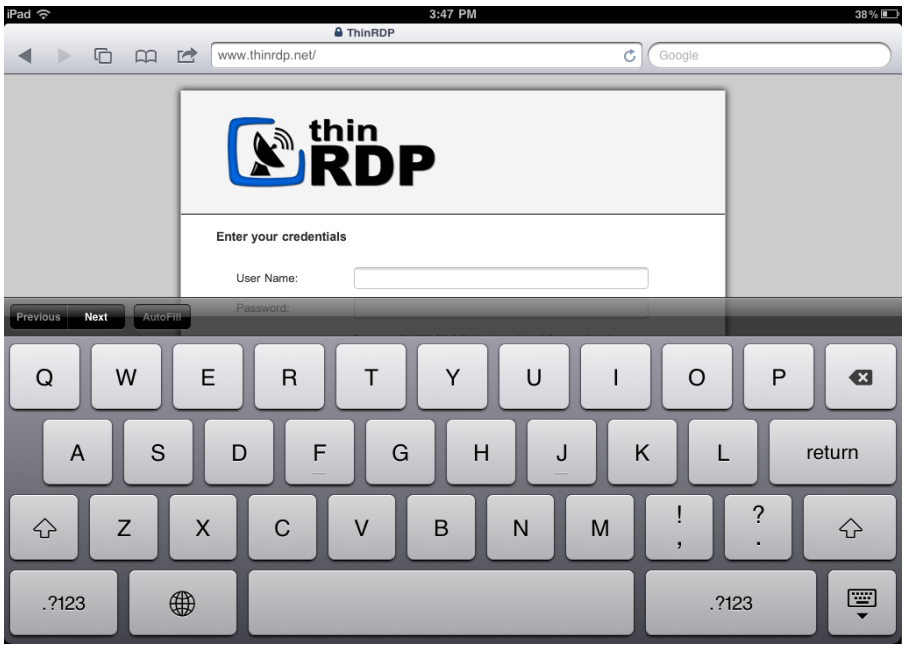
8.1 Getting into ThinRDP

When you access ThinRDP from a web browser, you will have to fill two dialogs. The first one is the application login and the second one has the connections settings you will be able to customize.

1. In order to navigate on both "Login" and "Settings" interfaces, the only thing you need to do is touch the control you want to select or enter. The "Login" and the "Settings" interfaces don't provide any kind of moving or dragging control, since there are not elements with these behavior.

2. The regular keyboard will get enabled every time you enter into a text field, so you can type in the connection information.

On the image below you can see the login interface along with the enabled keyboard.



Once you get connected with a desktop, you will have many other navigability options and controls available.

Read the next topics and learn how to use these controls inside the connection.

Mouse Control

Keyboards

Gestures

Disconnecting

8.2 Mouse control

Right after you get connected to a remote desktop or application you will have available the remote desktop mouse.
Take a look on the table below how you are going to control this mouse through a mobile screen.
The third column relates the mobile gesture that corresponds to the described mouse action.

Moving the mouse around	In order to move the remote desktop mouse you should drag your finger softly touching the mobile screen. You don't need to drag your finger exactly on the mouse draw position in order to make it move. Wherever the mouse is, it will start moving. Sometimes the mouse is hidden. In that case, keep dragging the finger towards different directions until you can see it on the screen.	-
Regular click	In order to click some element on the remote desktop you need to first position the mouse draw over this element (a icon, or a menu for example). Once you have position the mouse draw over the element, give a quick touch on the element.	Tap gesture
Double click	Just like on the regular click you need to first position the mouse draw over this element you want to double click. After that give two quick touches on the element.	Double-tap
Right click	When you open a connection through a mobile, ThinRDP provides a especial side menu. The second button is used exactly to right click an element of the remote desktop. As for the regular and double click, first of all you need to position the mouse over the element you want to right click. After that touch the second side menu button (the button has a mouse picture with the right button highlighted in red).	-
Drag and drop	To drag and drop elements of the remote desktop to the following: a. Touch the element you want to drag. Do not release your finger. b. Drag the finger towards the position you want to take the element to. c. When you get to the position you wanted, release the finger from the screen.	Press and drag

8.3 Keyboards

1. Regular Mobile Keyboard

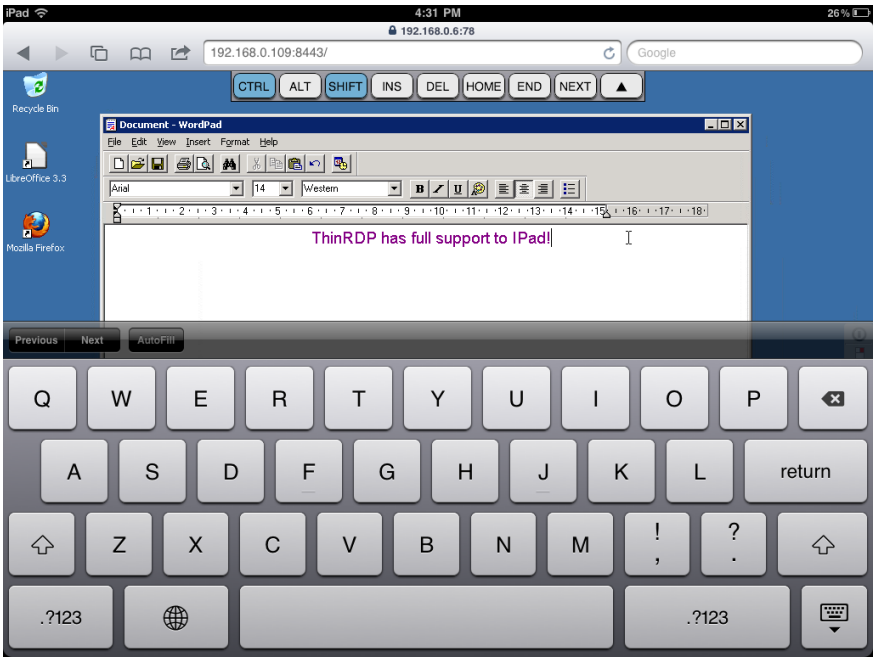
Along with most mobile device comes a logical keyboard composed by the main used keys for mobile applications.
With ThinRDP you can use any kind of application located on a remote desktop and that is why ThinRDP has two additional keyboards with all the keys the device keyboard might not support.

a. Enabling the regular keyboard:

I. If you are on the "Login" or on the "Settings" screen, this keyboard will get automatically enabled every time you enter a text field.
II. Once you get connected to a remote desktop or application, you should touch the last ThinRDP side menu button, in order to enable the regular keyboard.

b. Using the regular keyboard:

The keyboards use is very intuitive. You just have to touch the keys you want to type in.
To use numbers and special caracters, touch the "*.?123*" key.



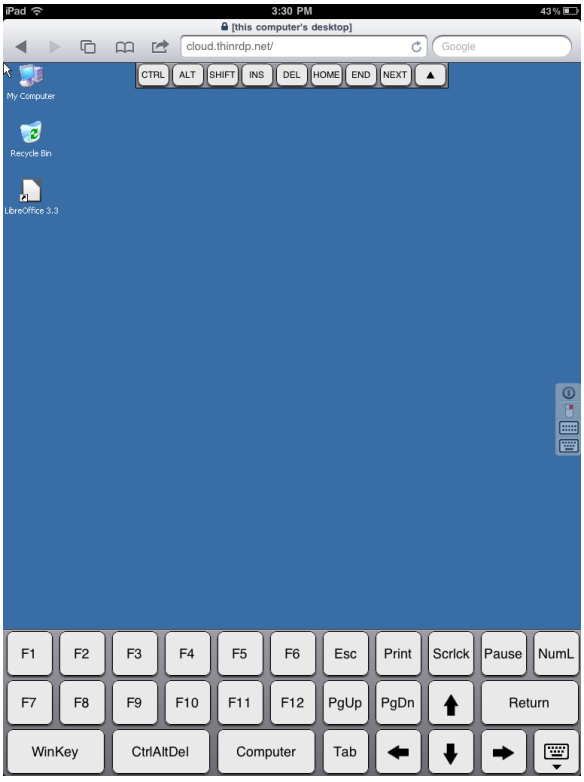
If you want to make the regular keyboard invisible, press the last button (the one with a keyboard and a down arrow draw).

2. ThinRDP Extended Keyboard

ThinRDP has two additional keyboards.
In order to enable them you should touch the first up-down keyboard button, on the ThinRDP side menu.

a. Upper keyboard

The upper ThinRDP keyboard has the keys CTRL, ALT, SHIFT, INS, DEL, HOME, END and NEXT. This keyboard leaves the keys on until you have pressed a valid combination of them, for example, CTRL+ALT+DEL.



b. Bottom keyboard

The bottom ThinRDP keyboard has the F1-F12 keys, the arrow keys and few more, as you can

check out on the up image.

If you need to disable both ThinRDP additional keyboards, press the last bottom keyboard key (the one with a keyboard and a down arrow below draw).

8.4 Gestures

These are the gestures ThinRDP provides to improve the experience of mobile device users. Learn which they are and what are the circumstances you can use them:

Regular known gestures:

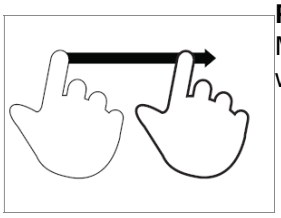
Tap
Briefly touch surface with fingertip

Mouse correspondent
Single-click

Double-tap
Rapidly touch surface twice with fingertip

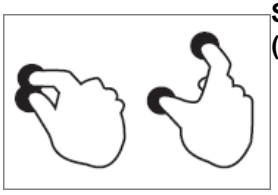
Mouse correspondent
Double-click

Special gestures:



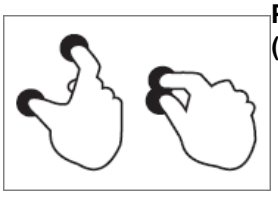
Press and Drag
Move one fingerprint over surface without losing contact

Where
On the Connection Screen you can drag and drop an object using the Press and Drag gesture.



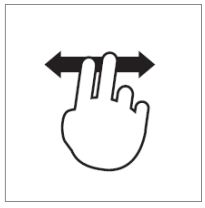
Spread (zoom in)

Where
On the Connection Screen you can use the Spread gesture to zoom the screen in.



Pinch (zoom out)

Where
On the Connection Screen you can use the Pinch gesture to zoom the screen out.



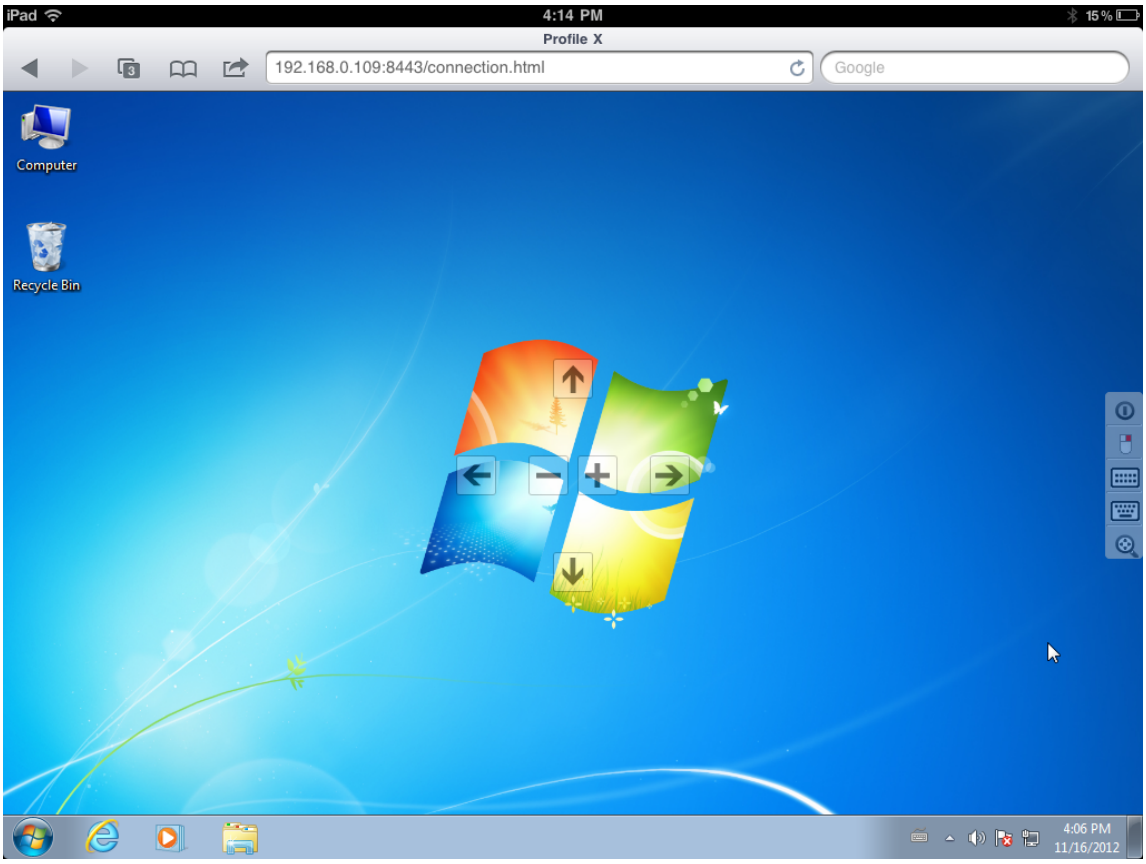
Double finger drag
Move two fingertip over surface without losing contact

Where
It the Connection Screen is magnified, you can use the "Double finder drag" to move the screen in different directions.

8.5 Zoom

On the right-side connection menu for mobiles, the last button enables the zoom controls on the screen.

Click on the zoom button, and its controls will be shown in the middle of the screen as the image below:



Find below how each one of the zoom controls works and the gesture that is related to it:

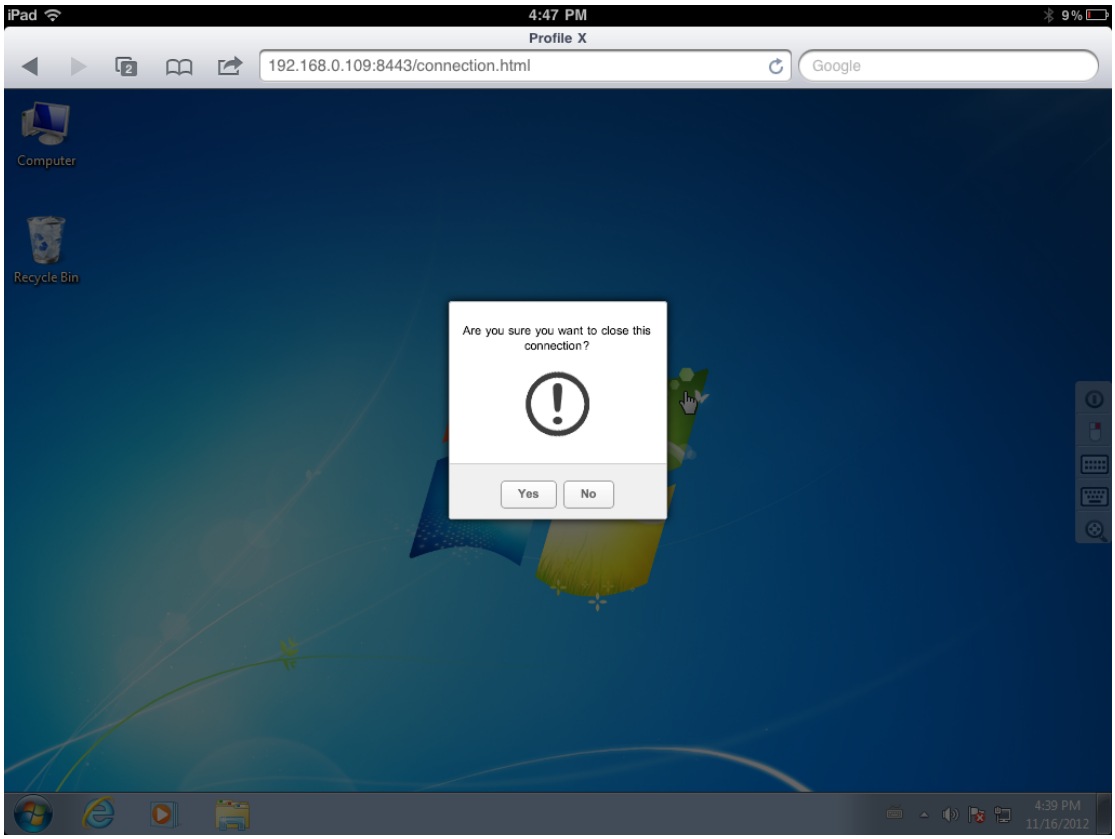
	Zoom In	Spread gesture

	Zoom Out	Pinch gesture
	Move the screen to the right	Double finger drag
	Move the screen to the left	Double finger drag
	Move the screen up	Double finger drag
	Move the screen down	Double finger drag

8.6 Disconnecting from ThinRDP

1. In order to disconnect from the remote desktop touch the upper button located on the ThinRDP right side menu.

2. After touching the disconnect option you will receive a confirmation message. Touch "Yes" if you really want to disconnect from the remote desktop, otherwise touch "No".



9 Advanced Settings

Once you have configured basic access for ThinRDP, you might want to learn a little more about the other advanced possibilities ThinRDP has available.

9.1 ThinRDP Workstation Manager

The ThinRDP Workstation Manager is the tool to configure the application settings.
From this manager you can set up the access security level and also settings related to the ThinRDP service.

To access ThinRDP manager go over the Start Menu options and look for the "*ThinRDP Workstation Manager*" item.

The Manager tool is composed by the following tabs:

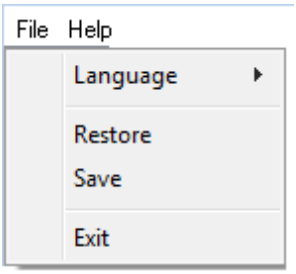
General

Security

Licences

The ThinRDP Manager main menu consists in two sub-menus:

File Menu:



The File Menu is composed by the following options:

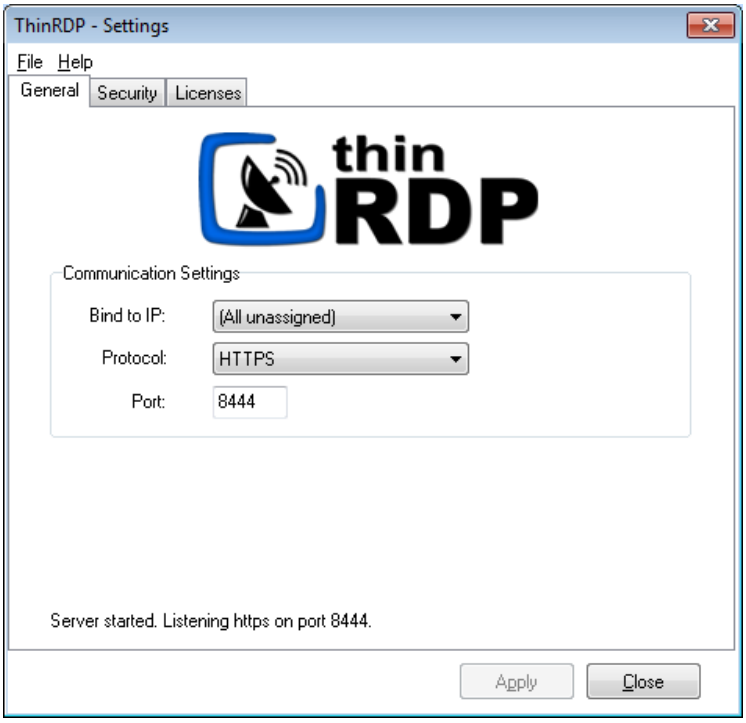
Language	Allows you to choose different languages for the application. Click on the Language that you want the application to work with. English is the default language.
Restore	Click to restore the Settings to the state it was before the changes.
Save	Click to save any change done on the system Settings.
Exit	Click on this option to exit the ThinRDP Manager tool.

Help Menu:

The Help Menu is composed by the following options:

Help	Takes you to the application online Guide.
Buy	Takes you to the Cybele Sofware Buying page.
About ThinRDP	Click on the About to see the application version and build number.

9.1.1 General

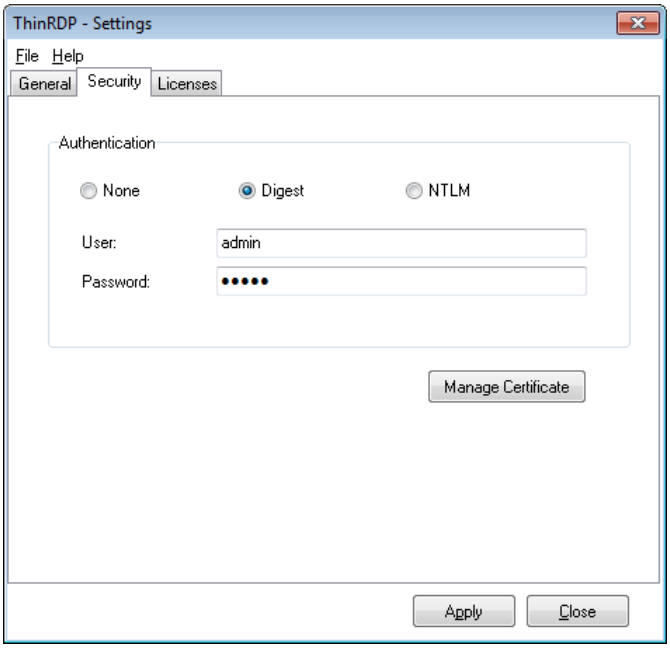


On ThinRDP Workstation manager "General" tab you will find the following options:

Bind to IP	Use this option to restrict access to the service through one specific IP. The "All unassigned" option allows access through all the possible IPs for the computer.
Protocol	Choose between the http and https protocol. The https protocol uses SSL, hence it's more secure.
Port	Choose which port will ThinRDP be running on. If the port is not available, you will see an error message on the status bar.

Always remember to press "Apply" in order to save the changes.

9.1.2 Security



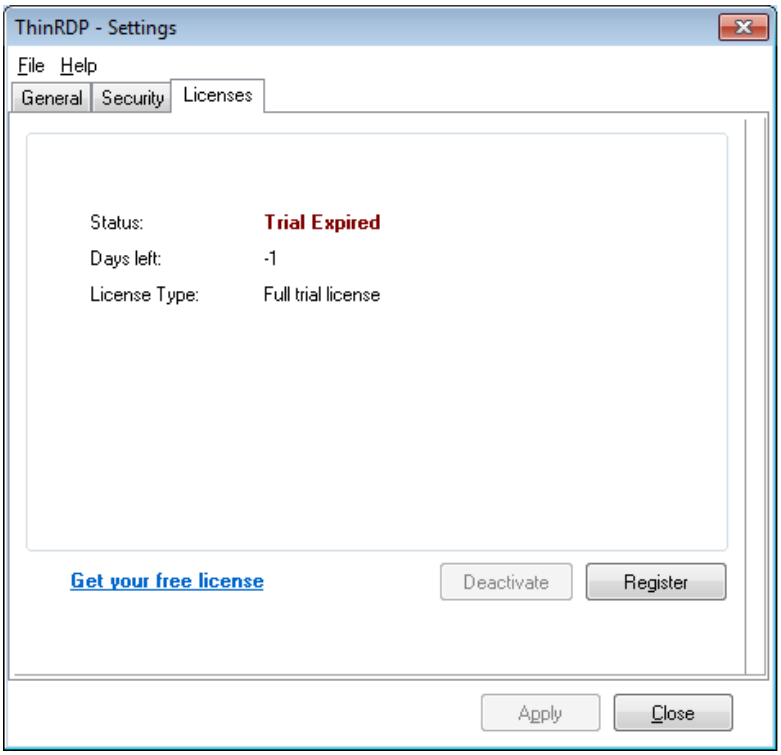
On ThinRDP Workstation manager "Security" tab you will find the following options:

Authentication	Choose the level of authentication for the users access to ThinRDP. Users will still need to authenticate afterwards against the computer they connect to. None: No authentication for ThinRDP access. This is only recommended for exclusive local access. Digest: Set your own credentials for ThinRDP access authentication. NTLM: Manage the authentication with Active Directory .
User	UserName that will be required to authenticate against ThinRDP when using Digest mode.
Password	Password that will be required to authenticate against ThinRDP when using Digest mode.
Allowed Users	Enter the allowed users, following the format described NTLM. Option only showed when "NTLM" is selected as authentication mode.
Manage Certificate	Press this button to access the options for replacing the default certificate installed with ThinRDP with your own.

Always remember to press "Apply" in order to save the changes.

9.1.3 Licenses

On the ThinRDP Workstation manager "Licenses" tab you will find the following options:

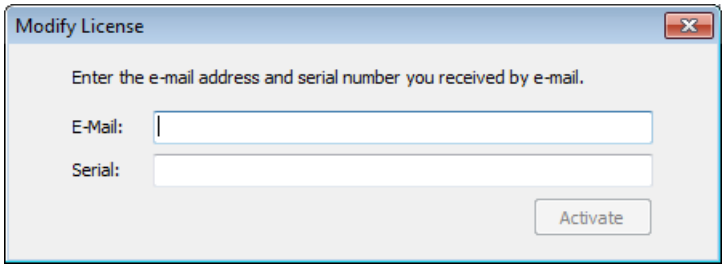


This tab always shows the current license. If you don't have a license, you will see a message letting you know how many evaluation days you have left until the trial finishes.

a. Register a license:

If you have got your ThinRDP license, you should register it by following the next steps:

1. Click on the "Register" button.
2. Enter the License "E-mail" and "Serial" number information, received by e-mail.



3. Press Activate.
4. If the information is correct, you probably have ThinRDP registered already.
5. Verify the new licensing information on the "License" Tab.
6. Contact us if you want to increase your license limits or if you want to enable a new feature.

b. Deactivate this machine:

You may want to deactivate a machine in order to make the license limits available again to be used on another machine.
The deactivation button will be enabled only when a license is already registered on this machine.
To deactivate your already registered license, follow the steps bellow:

1. Click on the "Deactivate" button.
2. Press "Yes" on the Confirmation Dialog.
3. You will receive a message confirming the license deactivation.

c. Show the current Licensing Status:

The License status can be:

Trial	Right after you install ThinRDP, the license status will be "Trial". This status will be kept until the trial period is over. On this status you are able to see how many days left the trial period still has.
Registered	After buying ThinRDP license and registering, you will have the application status turned to "Registered". On this status you will have the information regarding the license registration: 1. E-mail, 2. Company or Name, 3. Serial Number, 4. License type, 5. Expiration date, 6. License limits and 7. Enabled features.
Trial Expired	If you do not register a license until the end of the trial period, the status will turn to "Trial Expired". During this status the application won't be available.
Deactivated by User	Whenever you deactivate a license, ThinRDP application will have the "Deactivated by User" Status. This status will be kept until you register another license. During this status the application won't be available.

Contact us regarding pricing and/or licensing questions or visit our website http://www.cybelesoft.com/buy/.

9.2 Managing the SSL Certificate

An SSL certificate is an effective way to secure a website against unauthorized interception of data. At its simplest, an SSL Certificate is used to identify the website and encrypt all data flowing to and from the Certificate holder's Web site. This makes all exchanges between the site and its visitors 100 percent private.
A valid SSL certificate is included with the ThinRDP installation and all communications are already encrypted with the product's default certificate. You may want to create your own certificate to identify your company better.

Managing the SSL Certificate:

1. There are two forms of creating your own SSL certificate:

    a. Create A self-signed certificate

    b. Use A CA Certificate

2. Once you already have your certificate files, go to ThinRDP manager's "Security tab".

3. Click on the "Manage Certificate" option. If it is disabled, read the following subtopic "Using Dynamic DNS and Certificate Sharing".

4. On this screen you should inform the location of the certificate files, as follows:

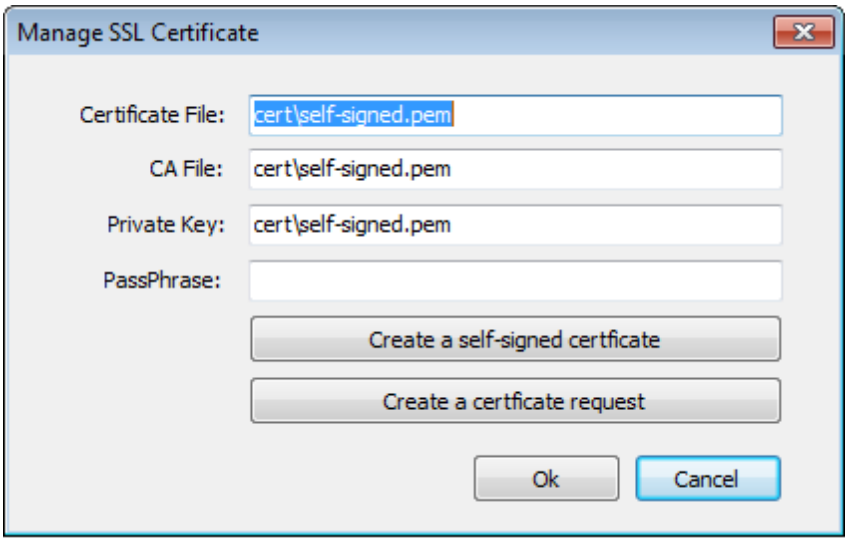
    a. **Certificate File:** Inform the path to the certificate file.
    b. **CA File:** If the certificate is issued by a unknown CA, you should inform here the pathname to the CA certificate.
    c. **Private Key:** You should inform the pathname to the certificate private key file.
    d. **PassPhrase:** Inform the password, if there is any, used when the private key was generated.

Note: The path names can be absolute (C:\MyCertPath\UserThisCert.pem) or relative to the path where ThinRDP is installed (\cert\UserThisCert.perm).

9.2.1 The default embedded certificate

Along with the ThinRDP installation, goes a certificate called "self-signed.pem". You will find it inside the \cert directory, located inside the ThinRDP application path.

If you want to use this default certificate you should have the files set as the image below:



Note: Once this certificate is not issued by a known Certificate Authority (CA), the web browsers will warn you they can not verify its authority.

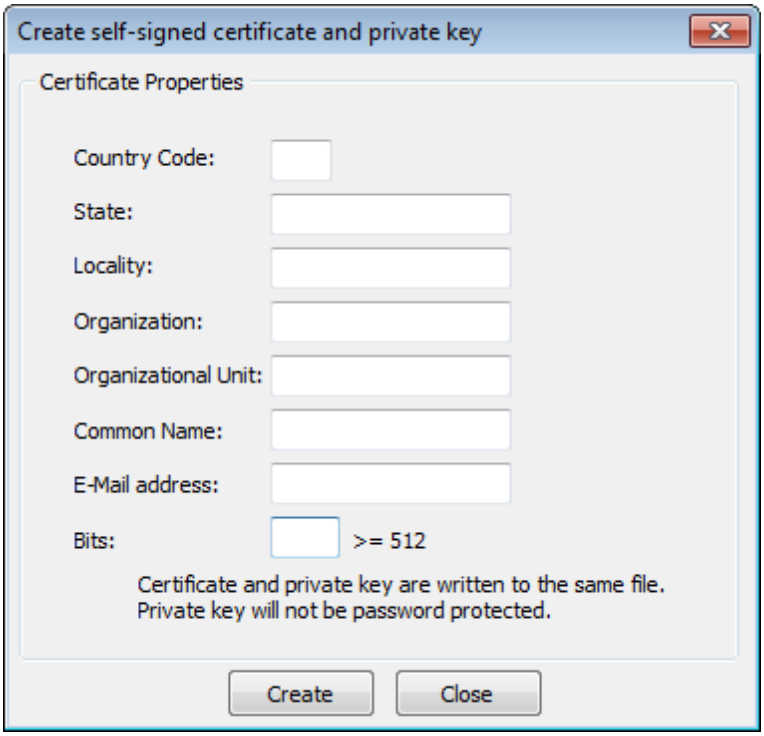
9.2.2 A self-signed certificate

This option is used to create your own self-sign certificate.

1. Go to the ThinRDP manager's "Security tab".

2. Press the "Create a self-signed certificate" button.

3. Fill in the form below with your organization data:



4. The "Common Name" field should be filled with the server+domain that will be used to access the ThinRDP server (rdp.mycompany.com).

5. Press Create.

6. Select the location where you want the certificate to be stored.

7. The application will start using this self-signed certificate just created by you.

Note: Once this certificate is not issued by a known Certificate Authority (CA), the web browsers will warn you they can not verify its authority.

9.2.3 A CA certificate

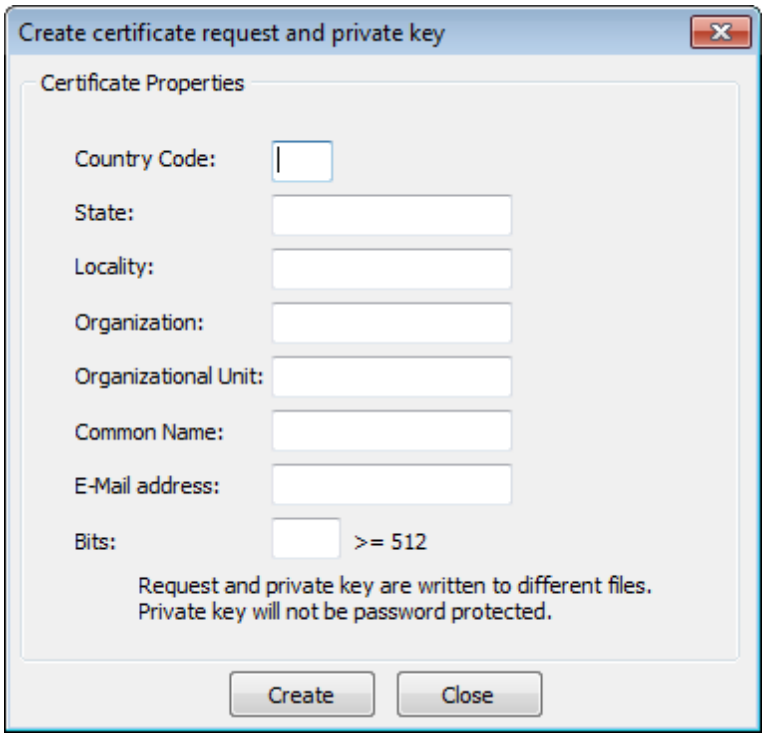
In order to use this option you will have to get a certificate from a known Certificate Authority (CA). Some CA examples are GoDaddy, VeriSign, Thawte, GeoTrust and Network Solutions.

The CA will ask you for a "certificate request". Create one following the next steps:

1. Go to the ThinRDP manager's "Security tab".

2. Click on the "Create a certificate request" button.

3. Fill in the form below with your organization data:



4. The "Common Name" field should be filled with the server+domain that will be used to access the ThinRDP server (rdp.mycompany.com)

5. Press "Create" and the application will generate two files.

6. The first window will ask you a location to keep the private key file: "Where do you want the private key file to be stored".

   a. Inform a name for your private key.
   b. Select a place to keep it safe.
   c. Press the "Save" button.

7. The second window will ask you a location to keep the request file: "Where do you want the request file to be stored.".

a. Inform a name for the request file.
b. Select a directory where you can find the file later on to send to the CA.
c. Press the "Save" button.

8. The first file is the certificate private key. It should always be kept safe with you.

9. Send only the request file to the CA.

After the CA validation process, place the certificate they sent to you on ThinRDP cert directory and inform the path to the files on ThinRDP Manage Certificate option (Certificate file, CA file and Private Key).

9.3 Integrating ThinRDP Workstation

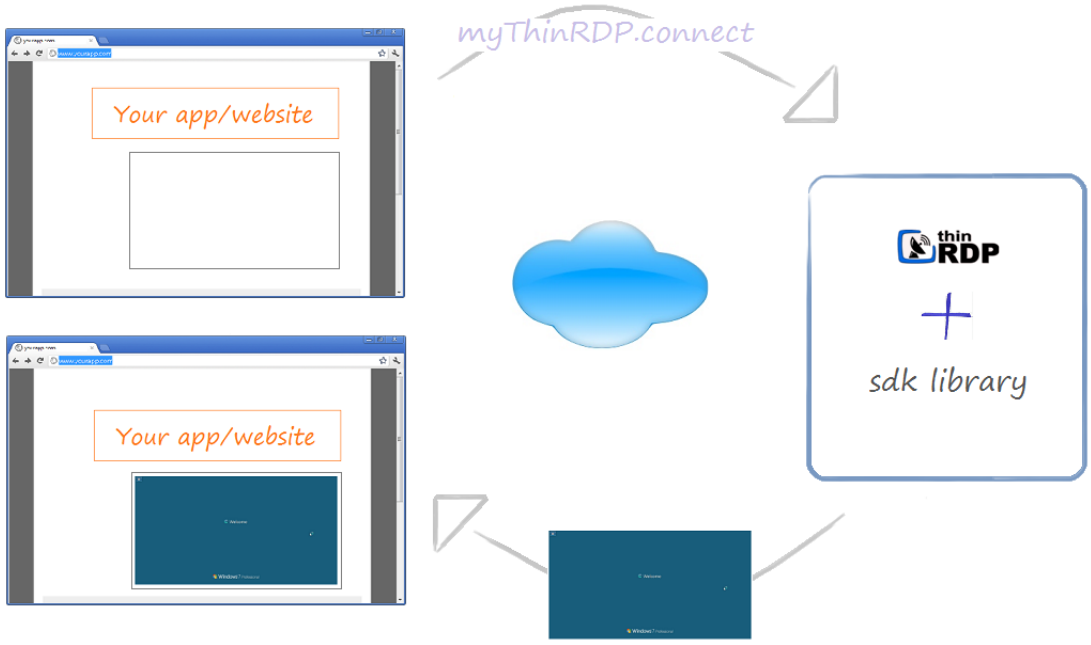
Find below some features that can help you integrate ThinRDP on your environment:

- SDK
- Customizing the Web Interface
- One-time-URL

If you need something different from that, get in touch with us, and let us know your specific integration needs. We will evaluate and let you know the viability of this integration development.

9.3.1 SDK

The SDK library allows you to integrate your own website or web application with *ThinRDP Workstation*, so that you can have a fully functional remote desktop or remote application inside your application .



Requirements for the SDK Library:

1. The website or application target has to be HTML5 compliant.
2. The integration has to be done at a programming level. This is why you will need someone who can modify the target website or application source.

You can use the SDK library with any ThinRDP authentication mode: None, Digest or NTLM.

The integration of ThinRDP with your application will require the edition of an HTML page, adding a few tags and some JavaScript code.
From this point on, we consider you already have ThinRDP installed and configured. Otherwise, please go back to the Getting Started topic.

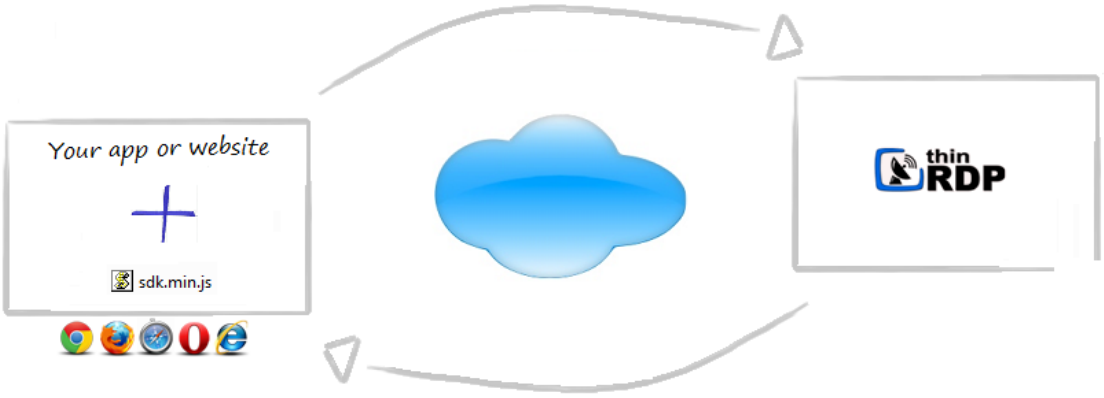
To learn how to use the SDK library read the next topics:

Deploying
Using the SDK
The Connect Method
Events
Keystrokes methods
SSL Certificate
HTML Demo

Tip: You can also take a look at the sdk.html file available in the ThinRDP Server installation directory, under the 'webrdp' folder. After configuring the parameters for the connect method, located inside this html example file, you can try it out from the browser through the address https://server_IP:port/sdk.html.

9.3.1.1 Deploying

In order for ThinRDP SDK to work all you need is the sdk.min.js and the jquery libraries to be accessible from your app/website:



Add a script tag pointing to the ThinRDP SDK client library: sdk.min.js in the HTML file where you will call the ThinRDP connect method from.
It is recommended that you deploy this file within your website/web app environment for better performance.

Quick setup guide:

1. Copy the sdk.html and sdk.min.js files to your website/web application environment.
2. Edit the sdk.html file: Set the GetThinRDP method first parameter to the ThinRDP server URL following this format: https://127.0.0.1:8443.
3. Also modify the `computer`, `username` and `password` properties to match the remote machine IP and credentials, respectively.
4. Save the changes.
5. Access sdk.html from your website/app environment and press OK on the "connected" and "session start" messages.
6. The page should now show the remote connection (accessed from an external html file).

Tip: The sdk.html file is a demo to quickly try out the ThinRDP SDK integration using the local connection mode, but also it can be used as a template to modify the HTML file you want to embed ThinRDP in.

9.3.1.2 Using the SDK

You will be able to place a ThinRDP connection in three different html structures:

a. A new browser window
b. An iFrame placed inside an existing Web Page
c. A div placed inside an existing Web Page

If you want the ThinRDP connection to open in a new browser window (a) or inside an iFrame (b) the connection mode should be set to "Remote". Otherwise, if you want to embed the connection inside in a div (c), the connection mode should be "Local". You will need this information on HTML configuration step 5b below.

Modify your HTML file step-by-step:

1. Open the HTML page you are going to integrate with ThinRDP SDK for editing.

2. Add these meta tags into the <head> tag:

```
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<meta http-equiv="X-UA-Compatible" content="chrome=1"/>
```

3. If you want the ThinRDP integration to work under iOS, add the following <meta> tags into the <head> tag.

```
<link rel="apple-touch-icon" href="images/icon.png"/>
<meta name="apple-mobile-web-app-capable" content="yes" />
<meta name="viewport" content="width=device-width, initial-scale=1.0,
maximum-scale=1.0, minimum-scale=1.0, user-scalable=no, target-
densityDpi=device-dpi"/>
```

4. Add the following libraries inside the <head> tag:

a. The jQuery library (jquery.min.js):

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.6.1/
jquery.min.js" type="text/javascript"></script>
```

b. The ThinRDP SDK client library (sdk.min.js): this file will have to be deployed with your website/ application.

```
<script src="sdk.min.js" type="text/javascript"></script>
```

5. Also inside the <head> tag, add one more <script> tag. This one will be used to create the connection with the remote desktop. If the page already has a script tag, just append this code into the `$(document).ready` method.
The GetThinRDP method creates the object that handles the ThinRDP SDK functionality. It has two arguments: the ThinRDP server URL and the connection mode in which ThinRDP SDK will work. The connect method is the method that creates the connection and positions it on the structure you have selected (div, iFrame, Window).

```
<script type="text/javascript">
    var mythinrdp;
    $(document).ready(function () {
        mythinrdp = GetThinRDP("ThinRDP URL", connection mode);
        mythinrdp.connect({
                                //Read the "The connect method" to complete
all the expected parameters
        });
    });
</script>
```

a. Substitute the "`ThinRDP URL`" argument for the getThinRDP method with the ThinRDP protocol + Computer's IP + Port, following this format: https://127.0.0.1:8443.

b. Substitute the getThinRDP second argument with the connection mode:

Mode	How it works	Where you can place the connection
Local (remote =false)	The connection is embedded in the same page and after the connection is established, the data exchange is sent directly to your website/ application, through the sdk.min.js library.	div
Remote (remote=true)	The sdk.min.js posts into ThinRDP Server and all the remote desktop data is exchanged through the ThinRDP Server JavaScript scripts. The connection will occupy the whole target window area (window or iFrame).	browser window or IFrame

c. Find out in the next sub-topic ("Connect method") how you should complete the parameters that go along with the connect method, and substitute the text on the connect method.

6. If you are using the "Local" connection mode you can code special behaviours for the available ThinRDP SDK events and keystrokes,.

9.3.1.3 Connect method

The "connect" method creates a connection with the remote machine and positions the remote desktop connection on the specified html structure. In order to do so, it expects a JSON argument in which all the connection settings should be informed.
If you want to understand exactly how each JSON parameter will reflect on the connection, read the next topics:

Placement parameters

Destination and Authentication parameters

Settings parameters

Features parameters

Events parameters

Right below you will find the connect method with all the possible parameters set. They should not be sent all together, because each environment will require different parameters to be set:

- The Placement parameters will be required depending on the connection mode (remote or local).
- The Destination and Authentication parameters will be required depending on the authentication mode set on ThinRDP manager.
- The other parameters (Settings, Features and Events) are optional and should be sent whenever you need to change a determined ThinRDP behaviour or enable and configure its features.

```
mythinrdp.connect({

                    // Placement
                    targetWindow: "substitute with the iframe id or window name",
                    postpage:     "connection.html",
                    exitURL :     "about:blank",
                    divId :       "deskdiv",

                    // SDK Settings
                    centered:         false,
                    showOnStart:      true,
                    showToolbar:      false,
                    hidePointer:      false,
                    kbdControl:      true,
                    mouseControl:      true,

                    // Tab General
                    computer:   "substitute with the remote desktop/application IP",
                    username:   "substitute with the remote desktop username
credential",
                    password:   "substitute with the remote desktop password
credential",
                    askForCredentials: false,
                    disablenla: false,
                    desttype:   "substitute with the destination type (for VM's)",
                    destinfo:   "substitute with the destination info (for VM's)",

                    // Tab Program
                    startprg: 0,
                    command:   "substitute with the app path",
                    directory: "substitute with the app context dir",
                    cmdargs:   "substitute with the app arguments",

                    // Tab Display
                    bpp: 16,
                    resolution:"fittobrowser",
                    width: $(window).width(),
                    height: $(window).height(),
                    imagequality: 1,
                    clientAck: 0,

                    // Tab Experience
                    experience: {
                            desktopbackground: false,
                            visualstyles: false,
                            menuwindowanimation: false,
                            fontsmoothing: false,
                            showwindowcontent: false,
                            desktopcomposition: false
                    },

                    // Tab Advanced
                    unicodekeyboard: true,
```

```
                    console: false,
                    wscompression: true,
                    relativetouch: true,
                    relativeTouch: true,  //mobile
                    disableExtKeys: true, //mobile
                    tbSize: "medium",     //mobile

                    // Tab Resources
                    printer: {
                            enabled: false,
                            setasdefault: true,
                            name: "substitute with the printer name",
                            driver: "substitute with the printer driver"
                    },
                    clipboard: true
                    sound: {
                            enabled: true,
                            quality: -1
                    }

                    // Events
                    events: {
                            onServerConnecting          : function (reconnecting)
{ },
                            onServerConnect             : function () { },
                            onQueryDisconnect           : function () { },
                            onServerConnectionError     : function (errMessage)
{ },
                            onServerDisconnect          : function () { },
                            onExecResult                : function (cmd) { },
                            onSessionStart              : function () { },
                            onSessionEnd                : function (message) { },
                    }
}
```

9.3.1.3.1 Placement

These are all the parameters related to the ThinRDP connection placement.
Some of the parameters should be sent only when the connection mode is set to Remote and some of them should be sent only when the connection mode is Local.

Parameter	What it means	Type/format	Default	send when mode	
				remote	local
targetWindow	Inform "_self" to have the connection opened over the current window. The "*" value will open a new window with a name assigned by ThinRDP. If you inform an existing window name or iframe id, ThinRDP will position the connection on this target and if the target does not exist, a new window will be created with the that name.	**string** "*", "_self", target window (iframe id or window name)	"_self"	yes	no
exitURL	Assign a URL to redirect to after the connection has closed.	**string** URL	"about:blank"	yes	no
postpage	This parameter configures the server HTML file. The embedded file name is 'connection.html'. You only have to change this value in case you have customized this file.	**string** html file name		yes	no
divId	div id where the remote desktop will be placed, when using local mode.			no	yes

9.3.1.3.2 Destination and Authentication

Find below all the parameters related to the connection destination and authentication.
The last three columns of the table will let you know what parameters should be sent depending on the authentication mode used.

Parameter	What it means	Type/format	Default	Profile	Digest	None
computer	The remote desktop IP and port to connect to. For "None", "Username/Password" as authentication mode or for the [any computer] profile you will have to specify the computer parameter.	**string** IP:Port		must not	must	must
username	The remote desktop username credential.	**string** username		could	could	could
password	The remote desktop password credential.	**string** password		could	could	could
askForCredentials	The askForCredentials parameter set to true, will make sure that whenever the username or password values to authenticate against the remote machine are not available, ThinRDP will prompt the user to inform them. If the askForCredentials is set to false, no dialog will be shown to the user and in case there is no password or username to authenticate, the user will not be able to log in.	**boolean** true,false	false	could	could	could
disablenla	Set the option disableNLA if you use a CredSSP other than Microsoft on the Remote Machine.	**boolean** true,false	false	could	must not	must not

If you wish to use the integration in order to connect to a specific application/program, set the following parameters:

Parameter	What it means	Type/format	Default	Profile	Digest	None
startprg	Sets the launching application mode. Set 0 for "Do nothing" option; 1 for "Start a program" option; 2 for "Launch RemoteApp" option.	**integer** 0,1 or 2	0	could	could	could
command	Full remote application path that should start upon connection establishment.	**string** app path		could	could	could
directory	Initial context directory to be used by the application set on command parameter described above.	**string** dir path		could	could	could
cmdargs	Arguments to start the application specified on the "command" property.	**string** app args		could	could	could

If you want to establish Hyper-V or RDS collection VM connections, set the parameters below:

Parameter	What it means	Type/format	Default	Profile	Digest	None
desttype	Set the desttype to "VMID" in case you want to establish a connection to a Hyper-V Virtual Machine or set "RDS" if you want to create a connection to an RDS Collection VM. The connection will act as a regular connection in case you don't inform this property of inform any value different from "VMID" and "RDS".	**string** VMID or RDS		could	could	could
destinfo	Inform the Virtual Machine ID, for Hyper-V Virtual Machine connections or inform the TSV URL for RDS Collection Virtual Machines.	**string** Virtual Machine ID or TSV URL		could	could	could

9.3.1.3.3 Settings

These are all the settings that can be configured through ThinRDP SDK.

Parameter	What it means	Type/format	Default
showOnStart	Set to false in order hide the Windows start up and logon process. In this case you will have to call the div 'show' method on the startSession event. A "wait" message will be shown until the session starts.	**boolean** true,false	true
showToolbar	Set to false to hide the ThinRDP toolbar	**boolean** true,false	true
centered	Configures whether the connection should be centered on the browser window or not. On certain cases, this parameter set to false might prevent flickering.	**boolean** true,false	true
bpp	Color Depth: sets the number of bits per pixel. Set 8 for 256 colors; 15 for True Color (15 bit); 16 for True Color (16 bit) ; 24 for True Color (24 bit)	**integer** 8,15,16 or 24	16
resolution	"fittobrowser", "fittoscreen", "fixed". When fixed, the width and height parameters will be considered.	**string** toolbar size	"fittobrowser"
width	Remote desktop screen width. It will only be considered when the 'resolution' parameter is set to "fixed".	**integer** pixels	$("#deskdiv").width()
height	Remote desktop screen height. It will only be considered when the 'resolution' parameter is set to "fixed"	**integer** pixels	$("#deskdiv").height()
imagequality	Specifies the image quality/compression. Set 0 for "Highest!; 1 for "Optimal"; 2 for "Good"; 3 for "Faster"	**integer** 0,1,2 or 3	1
clientAck	This parameter sets the number of images sent from the server to the client at a time. It can prevent slow connections from timing out. The faster the connection is, the higher clientAck parameter should be set. The default value (0) does not control the number of images, sending the images all together.	**integer**	0
desktopbackground	Set to true to show the original remote desktop background.	**boolean** true,false	false
visualstyles	Set to true to change the start menu and other Windows style features.	**boolean** true,false	false
menuwindowanimation	Set to true to show an animation on the Windows start menu.	**boolean** true,false	false
fontsmoothing	Set to true to make text easier to read, specially the magnified text.	**boolean** true,false	false
showwindowcontent	Set to true to show windows contents while dragging them.	**boolean** true,false	false
desktopcomposition	Set to true to configure the DWM to redirected the desktop drawing to off-screen surfaces in video memory. The desktop will also present many visual effects.	**boolean** true,false	false
unicodekeyboard	Allows for using full unicode keyboard charsets. Set to false to connect to xRDP servers.	**boolean** true,false	true
console	Forces the connection to the remote console session.	**boolean** true,false	false
wscompression	Set to true to enable the compression for the exchanged Websocket data and have the application performance improved.	**boolean** true,false	true
relativetouch	Set to false in order to disable this behaviour in mobile devices.	**boolean** true,false	true

disableExtKeys	Set to true if you do not want the ThinRDP extra keys to appear on mobile interfaces.	**boolean** true,false	false
tbSize	Configure the size of the mobile right side toolbar. The possible values are 'small', 'medium' and 'large'.	**string** toolbar size	'medium'
hidePointer	Hides the mouse pointer	**boolean** true,false	false
kbdControl	Enables control of the keyboard	**boolean** true,false	true
mouseControl	Enables control of the mouse	**boolean** true,false	true

9.3.1.3.4 Features

Each ThinRDP Feature requires a set of parameters to be enabled and configured. Find below how you can use ThinRDP features through the SDK integration:

Clipboard:

Parameter	What it means	Type/format	Default
clipboard	Set to false in orderto disable the remote desktop clipboard. The clipboard works for text only.	**boolean** true,false	true

Printer:

Parameter	What it means	Type/format	Default
printer.enabled	Set to true in order to enable ThinRDP PDF printer.	**boolean** true,false	false
printer.setasdefault	ThinRDP printer as the remote default printer.	**boolean** true,false	true
printer.name	Specify the printer name that you want to be shown on the remote machine's printer list.	**string** name	
printer.driver	Mark this option to set ThinRDP printer as the remote machine default printer.	**string** driver	

Sound:

Parameter	What it means	Type/format	Default
sound.enabled	Set to true in order to enable remote sound.	**boolean** true,false	false
sound.quality	Sets the sound quality. 0 = Excellent, 1 = Optimal, 2 = Good and 3 = Poor.	**integer** 0, 1, 2 or 3	1

9.3.1.3.5 Events

The events parameter allows you to handle each one of the available ThinRDP events from the SDK.

```
events: {
            onServerConnecting          : function (reconnecting) { },
            onServerConnect             : function () { },
            onQueryDisconnect           : function () { },
            onServerConnectionError     : function (errMessage) { },
            onServerDisconnect          : function () { },
            onExecResult                : function (cmd) { },
            onSessionStart              : function () { },
            onSessionEnd                : function (message) { },
    }
```

Observe on the code above that all the event functions are empty. On the following table you can find a description, parameters and a use example for each one of the available events:

Event	Parameters	When it is triggered	Example
onServerConnecting	reconnecting	This event is fired during the server connection establishment. The 'reconnecting' argument informs whether this is a reconnection or a first-time connection.	onServerConnecting : function (reconnecting) { $.blockUI("Establishing connection"); }
onServerConnect	obj	The "onServerConnect" event is fired every time a "connect" command is exchanged between the browser and the ThinRDP Server. It is a way of making sure the server received a sent "connect" command. If you have shown a message on the onServerConnecting, this would be a good moment to hide that message ($.unblockUI();). The 'obj' parameter ships the generated connection object.	onServerConnect : function (obj) { $.unblockUI(); }

onQueryDisconnect	-	Anytime the Web client is about to be disconnected, the "onQueryDisconnect" will be triggered. This is useful to ask the user for confirmation before proceeding to disconnect.	onQueryDisconnect: function () {
			
			if (confirm("A remote session is active. Are you sure you want to disconnect?"))
			{
			mythinrdp.disconnect();
			}
			}

onServerConnectionError	errMessage	If an error prevents the client connection to be established, this event will be fired. The errMessage argument brings the error message.	onServerConnectionError: function (errMessage){
			
			alert("connect error: " + errMessage);
			
			}

onServerDisconnect	-	Anytime the Web client gets disconnected from the ThinRDP server, the "onServerDisconnect" event will be fired. It could be triggered because the connection was lost incidentally or also because the user disconnected from the server on purpose.	onServerDisconnect: function ()
			{
			
			alert("disconnect");
			$.unblockUI();
			mythinrdp.updateTools();
			$("#" + mythinrdp.rcParams.divId).hide();
			
			}

onExecResult	cmd	This event fires only when the SDK is integrated with a remoteApp application. Through this event it is possible to get to know if the remoteApp was started or if there was an error during the application start up. If the application was started without errors, the cmd.rc is going to be 0, otherwise cmd.rc will carry the application error code. As you can see on the example below you can also get the executable name accessing the cmd.exename value.	onExecResult: function (cmd) {
			
			alert("exename: " + cmd.exename + " rc: " + cmd.rc);
			
			}

onSessionStart	-	This event will be fired when the client session has been started on ThinRDP.	onSessionStart: function () {
			
			$("#" + mythinrdp.rcParams.divId).show();
			mythinrdp.updateTools();
			
			}

onSessionEnd	message	As soon as the client Session is closed, the "onSessionEnd" event will be fired.	onSessionEnd: function (message)
			{
			
			alert(message);
			
			},

These event usage reference can also be found in the sdk.html file, located in the application directory, under the "webrdps" directory.

In previous versions the SDK events had a different syntax. That old sintax is still compatible with newer versions. However, it is highly recommended to translate the old code into the method described above.
This is how the previous event names correspond to the new ones:

Old Event Name	Current Event Name
establishingConnection	onServerConnecting
serverConnect	onServerConnect
execResult	onServerConnect
sessionStart	onSessionStart
serverConnectionError	onServerConnectionError
disconnectConfirmRequest	onQueryDisconnect
serverDisconnect	onServerDisconnect
sessionEnd	onSessionEnd

9.3.1.4 Browser resizing

When the browser window is resized by the end-user, you can make the connection resize proportionally to the new environment dimensions.
To do that you can perform a reconnection against ThinRDP Workstation (mythinrdp.restart()) on the browser resize event, so that the remote screen size will be updated with the new browser size.
Here is a code example that can be placed on the $(document).ready :

```
var resizeTimeout = null;
var waitToResize = 1000; // 1000 = 1 second (-1 deactivates it)


if (waitToResize != -1) $(window).bind("resize", restartToNewSize);

function restartToNewSize() {

    if (mythinrdp && mythinrdp.connected) {

        if (resizeTimeout) window.clearTimeout(resizeTimeout);
        resizeTimeout = window.setTimeout(function () { mythinrdp.
        restart();}, waitToResize);

    }

}
```

9.3.1.5 Keystroke methods

Some keyboard keystroke combinations are not sent to the remote machine because they are intended to work only on the local environment.
Through ThinRDP SDK library it is possible to send any keystroke combination to the server by using a list of methods available in any ThinRDP instance you create.

The table below lists and describes those methods.
The first four methods are general base methods that once combined could generate any keystroke sequence.
The last eight methods are commonly used key combinations that might be useful to enhance functionality to your ThinRDP integration.

Method	Behaviour	Aguments
sendText(textValue)	This method sends a plain text value to the current remote cursor position.	textValue **String** Text to be sent

sendKeyStroke (keyCode)	The sendKeyStroke method sends a key code, emulating the key's press and release sequentially.	keyCode **Number** Unicode representing the key the user pressed and released
sendKeyDown(keyCode)	Sends a key down.	keyCode **Number** Unicode representing the key the user pressed
sendKeyUp(keyCode)	Sends a key up.	keyCode **Number** Unicode representing the key the user released
sendCtrlAltDel()	Sends a CTRL+ALT+DEL sequence.	
sendShiftCtrlEsc()	Sends a CTRL+ALT+DEL sequence.	
sendShellExplorer()	Sends a CTRL+ALT+E (or WINDOWS+E) sequence.	
sendShellRun()	Sends a CTRL+ALT+R (or WINDOWS+R) sequence.	
sendCtrlEsc()	Sends a CTRL+ESC sequence.	
sendCut()	Sends a CTRL+X sequence.	
sendCopy()	Sends a CTRL+C sequence.	
sendPaste()	Sends a CTRL+V sequence.	

Usage Examples:

The next examples are JavaScript methods which are intended to show you a couple of usage cases for combining ThinRDP Library Keystroke methods.

Example 1 - Enter:

This first example shows you how to send a single keystroke, by sending its key code on the sendKeyStroke method argument.

```
function sendEnter() {
    if (mythinrdp) {
        mythinrdp.sendKeyStroke(13);
    }
}
```

Example 2 - Select next word / Select Line:

Observe on these next examples how to use the combination of "keydown" followed by "keyup" keys in order to select the next word inside of a text.
These next two examples simulate a combinations of keys pressed all together.
Remember that the sendKeyDown method has to be followed, at some point, by the sendKeyUp method, in order to release the key. If you only call the sendKeyDown method it is as if a key

was constantly pressed on the keyboard.

```
function selectNextWord() {
    if (mythinrdp) {
        mythinrdp.sendKeyDown(0x11); //CTRL
        mythinrdp.sendKeyDown(0x10); //SHIFT
        mythinrdp.sendKeyStroke(39); // RIGHT ARROW
        mythinrdp.sendKeyUp(0x10); //SHIFT
        mythinrdp.sendKeyUp(0x11); //CTRL
    }
}

function selectLine() {
    if (mythinrdp) {
        mythinrdp.sendKeyDown(0x10); //SHIFT
        mythinrdp.sendKeyStroke(40); // DOWN ARROW
        mythinrdp.sendKeyUp(0x10); //SHIFT
    }
}
```

Example 3 - Send a plain text:

This next example sends a plain text followed by an 'enter' to the remote environment.

```
function sendText() {
    if (mythinrdp) {
        mythinrdp.sendText("This is a test...");
        sendEnter();
    }
}
```

9.3.1.6 SSL Certificate

When you embed ThinRDP into a website you need an SSL certificate. Otherwise if the browser can not verify the configured certificate authenticity, your integration won't work.
If you already have your own certificate or will get one from a Certificate Authority (CA), all you have to do is configure the certificate as described in the "A CA Certificate" section.

If this option doesn't work for you, disable the SSL certificate, setting the "protocol" property to "HTTP:". Find out how to do it on the connect method subsection.

9.3.1.7 HTML Demo

Along with the ThinRDP installation we have shipper an html demo.

This demo is an HTML page that has an example of SDK usage in "Local mode". ThinRDP is embedded in a div placed inside the same web page.
This HTML example is located in the 'sdk.html' file inside the ThinRDP web directory under the ThinRDP installation directory (e.g.: C:/Program Files/ThinRDP Workstation/webrdps) .

You can try this demo directly from ThinRDP Workstation, by opening on your web browser the ThinRDP Workstation Address followed by /sdk.html (e.g.: http://127.0.0.1:8443/sdk.html).
To use this demo on your environment, follow the Quick Setup Guide instructions, on the Deployment page.

9.3.2 Customizing the Web Interface

ThinRDP Workstation allows you to modify the web interface and tailor it to your branding scheme.

Customizing the application logo and other image files can be very simple, once it only requires you to have the new image file and tell the application where it is located.

Customizing the structure and style of the application may be a little bit more complex. These kind of customizations have to be done at a programming level (HTML and CSS).

Read also how to protect the customized web files in the Files Location topic.

9.3.2.1 Changing the logo

Modifying the application logo can be as simple as copying the new logo image and telling ThinRDP Workstation application where it is located:

1. Create a folder called "BrandingFiles", if it doesn't exist yet, under the folder webrdps located inside the ThinRDP Workstation installation directory.
   (e.g.: C:/Program Files/ThinRDP Workstation/webrdps)

2. Copy your own logo image file to the "BrandingFiles" folder.

3. Create the WebAliases.ini file and configure it:

   a. Create a file called "WebAliases.ini" in the installation directory (e.g.: C:/Program Files/ ThinRDP Workstation/WebAliases.ini). If the file already exists, only append the lines to it.

   b. Configure the redirection of the logo files you want to substitute, following the two examples below (thinrdpsmall.png and favicon.ico):

```
[Alias]

;=================
;Main logo
;=================
/images/thinrdpsmall.png=BrandingFiles\MyLogo.png

;=================
;Favicon
;=================
/favicon.ico=BrandingFiles\MyFavicon.ico
```

   c. Save it.

4. Open the application to see the changes.

Take into account:

a. Any line in the "WebAliases.ini" file starting with a semicolon will not be considered by the application. It can be used to leave comments in the file.

b. You can substitute any interface image or file, by following the same steps described above.

c. Sometimes the favicon is not shown right the way, because the browser keeps history of the images. In that case, you should clean the browser cache before trying out the changes.

9.3.2.2 Customizing the web files

To customize the web files, you should:

1. Create a folder called "BrandingFiles", if it doesn't exist yet, under the folder webrdps located inside the ThinRDP Workstation installation directory. (e.g.: C:/Program Files/ThinRDP Workstation/webrdps)

2. Make copies of the original web files that you want to modify to the "BrandingFiles" folder. Copy only the files to be modified without their associated folder structure.

3. Customize the files (html, css, etc) as you prefer.

4. Create the WebAliases.ini file and configure it:

   a. Create a file called "WebAliases.ini" in the installation directory (e.g.: C:/Program Files/ ThinRDP Workstation/WebAliases.ini). If the file already exists, only append the lines to it.

   b. Configure the redirection to the files you have modified, by adding a line similar to the examples below for each modified file:

```
[Alias]

/index.html=BrandingFiles\my_index.html
/css/index.css=BrandingFiles\my_index.css
```

   c. Save it.

5. Open the application and check out the changes.

Take into account:

a. Any line in the "WebAliases.ini" file that starts with a semicolon will not be considered by the application. It can be used to leave comments.

b. The paths located in the HTML, CSS, and other contents will be kept relative to the original file location. This means that you won't have to change the content paths when customizing this files.

9.3.2.3 Files Location

We recommend that you to create a new folder in order to keep the customized files instead of leaving it all together with the original ones. On doing so, you will:

a) Have the possibility to get back to the original interface configuration, at anytime
b) Make sure that your files will be safe after a version upgrade.

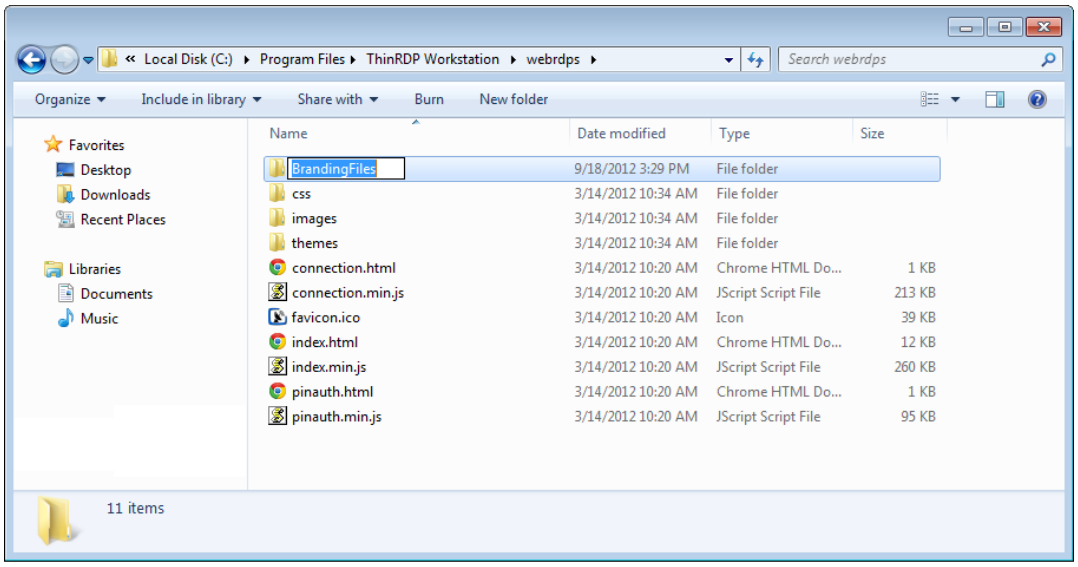
You can also choose whether to place the files inside or outside the webroot structure. Read next, how each option will behave differently.

Inside the webroot :

When the directory that will keep the customized files is created inside the webroot directory:

1) The files will be accessible externally from a URL similar to: https://127.0.0.1/BrandingFiles/customizedFile.html

2) The paths to the files, indicated in the "WebAliases.ini", can be relative to the webroot directory. (e.g. "/img/thinrdpsmall.png=BrandingFiles\MyLogo.png"). You will find other relative path examples on the topics Changing the logo and Customizing the web files.



Outside the webroot :

The customized files, can also be placed in any other disk location. In that case:

1) The files will be protected, because it won't be possible to access the customized files from an URL.
2) The paths to the files, indicated in the "WebAliases.ini", have to be absolute, as the example below:

```
[Alias]

/index.html=c:/BrandingFiles/my_index.html
/images/thinrdpsmall.png=c:/BrandingFiles/MyLogo.png
```

9.3.3 One-time-URL

ThinRDP Workstation offers a mechanism to generate One-Time-URL's connections that expire after a given period of time.

The One-Time-URL feature was designed to work only with the NTLM Security Level.

You have to configure an apiKey on your ThinRDP Workstation to use this method.

These are some situations in which the One-Time-URL might be useful:

a. Giving access to a desktop to external users without having to weaken the Security level to None.
b. Generating a temporary access method to the ThinRDP desktop.
c. Integrating ThinRDP on a Single-Sign-On Scheme along with external applications.

How it works:

1. First you need to ask ThinRDP to generate the URL for you. Call ThinRDP Workstation following this URL format:

```
http(s)://ThinRDPServer:Port/ws/oturl/get?<queryString>
```

2. The queryString should be build with all parameters listed below:

```
apikey= <apikey> &plen= <passlen> &expires= <expires> &username=
<username> &password= <password>
```

Find on the table below a description for each required parameter.

Parameter	Description
apiKey	The ApiKey is a secret value, known only by ThinRDP Workstation and the corporate application. Find out more about it on the apiKey topic.
plen	The plen parameter carries the password length.
expires	Through this parameter you can set an expiration (in minutes) for the URL. Expires = 30 means that the URL won't work anymore after 30 minutes have passed from the URL generation.

On the next topics you can find out what other parameter you can use to Configure the connection and Enable features.

3. If ThinRDP gets to authenticate with the sent parameters, it will return a One-Time-URL that will allow you to establish a connection with the ThinRDP desktop.

```
/oturl.html?
key=w7NJNschBdJD9e6G6luWhOCalM$oFW7guqC6jE1IQah3AJm3&pass=BOWZB8FG
```

Add up the generated URL to the ThinRDP address:

```
http(s)://ThinRDPServer:Port/oturl.html?
key=w7NJNschBdJD9e6G6luWhOCalM$oFW7guqC6jE1IQah3AJm3&pass=BOWZB8FG
```

The URL is ready to be used. You can redirect your application to the desktop connection through it, or even send it to an external user by e-mail.

Find an HTML/ajax example inside the application installation directory, under the folder webrdps. The file is named One-Time-Url-Test.html and implements the features covered on this topic.

9.3.3.1 Configuring the connection

Besides the basic parameters required to establish the connection, you can send additional parameters to configure the connection the way you want.
Find below the list of parameters to configure the One-time-URL connection:

Parameter	What it means	Type/format	Default
username	The username to authenticate against the remote machine. If this parameter is not sent, ThinRDP will prompt the user for this information.	**string** Username	
password	The password to authenticate against the remote machine. If this parameter is not sent, ThinRDP will prompt the user for this information.	**string** Password	
startprg	If you will use the OneTimeURL to start a specific application, you should change this and the following three fields. Set it to 0 for "Do nothing" option; 1 for "Start a program" option; 2 for "Launch RemoteApp" option.	**integer** 0,1 or 2	0
command	Full remote application path that should start upon connection establishment.	**string** app path	
directory	Initial context directory to be used by the application set on command parameter described above.	**string** dir path	
cmdargs	Arguments to start the application specified on the "command" property.	**string** app args	
bpp	Color Depth: sets the number of bits per pixel. Set 8 for 256 colors; 15 for True Color (15 bit); 16 for True Color (16 bit) ; 24 for True Color (24 bit)	**integer** 8,15,16 or 24	16
resolution	"fittobrowser", "fittoscreen", "fixed", when fixed, the parameters width and height will be considered.	**string** toolbar size	"fittobrowser"
width	Remote desktop screen width. It will only be considered when the resolution parameter is set to "fixed".	**integer** pixels	Desktop width
height	Remote desktop screen height. It will only be considered when the resolution parameter is set to "fixed"	**integer** pixels	Desktop height
imagequality	Specifies the image quality/compression. Set 0 for "Highest!; 1 for "Optimal"; 2 for "Good"; 3 for "Faster"	**integer** 0,1,2 or 3	1
desktopbackground	Set to true to show the original remote desktop background.	**boolean** true,false	false
visualstyles	Set to true to change the start menu and other windows features style.	**boolean** true,false	false
menuwindowanimation	Set to true to show an animation on the Star menu.	**boolean** true,false	false
fontsmoothing	Set to true to make text easier to read, specially the magnified ones.	**boolean** true,false	false
showwindowcontent	Set to true to show windows contents while dragging it.	**boolean** true,false	false
desktopcomposition	Set to true to configure the DWM to redirected the desktop drawing to off-screen surfaces in video memory. The desktop will, also, present many visual effects.	**boolean** true,false	false
unicodekeyboard	Allows for using full unicode keyboard charsets. Set to false to connect to xRDP servers.	**boolean** true,false	true
console	Forces the connection to the remote console session.	**boolean**	false

		true,false	
wscompression	Set to true to enable the compression for the exchanged Websocket data and have the application performance improved.	**boolean** true,false	true
diskenabled	Set to true to have an intermediate disk available on the connection.	**boolean** true,false	true
diskname	Identify the intermediate disk among the other remote desktop disks.	**string** name	"ThinDisk"
diskautodownload	Set to true to automatically dow nload any file saved/ copied on the Intermediate disk.	**boolean** true,false	true

To add each parameter to the queryString, concatenate an & symbol, the name of the parameter, the = symbol and the value for the parameter, following this format:

```
...&password=myPassword&resolution=fittobrowser...
```

9.3.3.2 Enabling features

Besides the basic parameters to establish the connection and the configuration parameters, you can also send some parameters on the queryString to enable ThinRDP features. Find below how you the parameters you need to send in order to enable and configure ThinRDP features for the One-Time-URL connection:

Clipboard:

Parameter	What it means	Type/format	Default
clipboard	Set to false to disable the remote desktop clipboard. The clipboard w orks only w ith texts.	**boolean** true,false	true

Printer:

Parameter	What it means	Type/format	Default
printerenabled	Set to true to enable ThinRDP PDF printer.	**boolean** true,false	false
printersetasdefault	ThinRDP printer as the remote default printer.	**boolean** true,false	true
printername	Specify the printer name that you w ant to be show n on the remote machine's printer list.	**string** name	
printerdriver	Mark this option to set ThinRDP printer as the remote machine default printer.	**string** driver	

Sound:

Parameter	What it means	Type/format	Default
soundenabled	Set to true to enable remote sound.	**boolean** true,false	false
soundquality	Sets the sound quality to be used. 0 = Excellent, 1 = Optimal, 2 = Good and 3 = Poor.	**integer** 0, 1, 2 or 3	1

To add each parameter to the queryString, concatenate an & symbol, the name of the parameter, the = symbol and the value for the parameter, following this format:

```
...&password=myPassword&clipboard=false...
```

9.3.3.3 Apikey

The ApiKey is a secret value, known only by ThinRDP Workstation and the external application that connects to it.
By sending the apikey, the external application is identifying itself as trusted.

The ApiKey is a configurable value. It is set in the ThinRDP ini configuration file. The location of this file depends on the Windows version ThinRDP is running at:

Windows 2003: C:\Documents and Settings\All Users\Application Data\Cybele Software\ThinRDP\ThinRDP.ini
Windows 2008: C:\ProgramData\Cybele Software\ThinRDP\ThinRDP.ini

Inside the ini file, the apikey information should be appended following the format below:

```
[API]
Key = 3884F316-3429-49A0-9282-AF0C52B62107
Ips = 192.168.0.22; ...
```

You should use a personal value for the apikey setting, as long as it follows the pattern shown above and matches the value send by the external application to authenticate against ThinRDP.
Do not use this value shown above, once this content is public on the internet.
Filter access. Grant access to a set of desired ips by adding them in the 'Ips' parameter. This will restrict the rest of ips from connecting.

If the apikey does not exist in the ini configuration file, the server won't be able to authenticate using this method.

9.4 Supported RDP Shortcut Keys

The supported shortcut keys in ThinRDP are the same as in regular RDP. Here is a list of the shortcut keys:

ALT+PAGE UP: Switches between programs from left to right.

ALT+PAGE DOWN: Switches between programs from right to left.

ALT+INSERT: Cycles through the programs using the order in which they were started.

ALT+HOME: Displays the Start menu.

CTRL+ALT+BREAK: Switches the client between full-screen mode and window mode.

CTRL+ALT+END: Brings up the Windows Security dialog box.

ALT+DELETE: Displays the Windows menu.

CTRL+ALT+MINUS SIGN (-): Places a snapshot of the active window, within the client, on the Remote Desktop Session Host (RD Session Host) server clipboard (provides the same functionality as pressing ALT+PRINT SCREEN on the local computer).

CTRL+ALT+PLUS SIGN (+): Places a snapshot of the entire client windows area on the RD Session Host server clipboard (provides the same functionality as pressing PRINT SCREEN on the local computer).