GrapeTC Lite Administrator Guide

Table of contents

About this guide.

This document describes basic and advanced configuring of GrapeTC Lite operating system.

This document consists of some additional information about advanced possibilities of GrapeTC Lite.

The current described version of GrapeTC Lite is 3.1.0.

Important parts of the guide are segregated by **bold** font.

Program code and configuration samples are segregated by *italic* font and gray background.

Sometimes you can meet words “session” and “connection”. In this guide these words means the same – terminal session.

Introduction and product overview.

GrapeTC Lite is an OS image created for easy and safe terminal access with many protocols.

All configuration of GrapeTC Lite is based on configuration files kept on the TFTP server (or on the local storage in case when GrapeTC Lite booted from the storage, not via PXE).

Starting with GrapeTC Lite.

Installation.

Installation of GrapeTC Lite is described in original “Installation Guide”, please read it first.

Configuration method.

By default TFTP booted device will try to get configuration from TFTP and locally booted device will try to get configuration from local storage. In fact this depends of kernel parameters in “pxelinux.cfg/<config name>” or “syslinux.cfg” file.

There are two options in kernel command line. They are “boot”and “conf”, the first one describes the path where static GrapeTC Lite components and clients are placed, the second one describes the path where configuration options are placed. For example:

boot:ftp://server.lan/path/to/files conf:https://user:password@server.lan/path/to/files

Correct parameters for local booting are: *boot:file:// conf:file://*

Correct parameters for PXE booting are: *boot:tftp:// conf:tftp://*

Please don't change kernel parameters manually without full understanding of this system.

Configuration files.

Every device booted GrapeTC Lite may have own configuration file. Devices without configuration

can be used only for rdesktop connections with standard settings.

Configuration file always has name “<MAC address>.conf”, where <MAC address> is 12 hex digits of MAC address of the device in upper case, for example: *0001A1B2C3D4.conf*.

Format of configuration file is very simple:

```
variable=value
```

If the file with “<MAC address>.conf” name can not be found GrapeTC Lite will try to get *default.conf* file.

You can find samples of configuration files in GrapeTC Lite distributable archive.

PXE booted systems.

In case of using PXE for booting GrapeTC Lite you will have directory named “gc” in the root of your TFTP server.

Configuration files must be placed in this directory.

Local booting systems.

In case when GrapeTC Lite is installed on external or internal device, for example on DoM or USB-HDD configuration file for device must be placed in directory “gc” in the root of device.

Configuration file will be created automatically if you start configuring GrapeTC Lite using internal configuration file editor.

You can run internal editor pressing F12 hot key when GrapeTC Lite running.

The editor appears only with local boot and not accessible for PXE booted systems. It's more correct to say the editor will work if configuration files are placed locally.

From 3rd version of GrapeTC Lite the editor can be replaced to the management program which may be started the same way but does not require to work with text parameters and provides useful graphical interface for GrapeTC Lite setup. This is also possible to start setup server, which provides possibility for remote configuration via browser by address:

```
http://<device address>:8090/tc
```

One of the known errors is an impossibility to drop down any combobox after program window has been resized. This error is caused by window manager features. It may be avoided by moving program window after resizing.

Licensing and demo mode.

Every GrapeTC Lite device must be licensed. Unlicensed system provide only rdesktop connection type and only one standard (1024x768) screen resolution without possibility to change anything.

In unlicensed mode you can still work with rdesktop, but you will not be able to save server name for automatic connection, will not be able to set proper display driver (only VESA will be accessible), will not be able to use sound, printing, accessing local storages etc.

License is a set of 4 parameters in the configuration file, they are "*mac*", "*type*", "*date*" and "*license*", for example licensed configuration file must consist of the records like this:

```
mac=0001A1B2C3D4
type=0
date=20102010
license=<license info>
```

<license info> record will consist of encoded license information.

Please never try to change license information including all 4 license fields.

You can order licenses from Grapecom Ltd. Company and we will provide licensed configuration files. Additionally we can make initial preconfiguration for your infrastructure.

Demo mode was created for possibility to look at all features of GrapeTC Lite before buying it.

You can switch demo mode on in configuration file:

```
demomode=on
```

Please switch off demo mode after buying GrapeTC Lite.

Demo mode provides all accessible features of GrapeTC Lite. You can configure any type of connection and switch on any component, but session will run only few minutes. **So please never use demo mode for working, because in some cases you can loose your data after closing session by time limit.** It must be used only for demonstration purposes.

You can see actual licensing state and MAC address by pressing F1 hot key.

For more comfortable license management all licenses may be kept in separated file, it must be named "*licenses*" and must be placed in "*gc*" folder with other configuration files. Every license in this file is represented by separated line, licenses may be added or removed. Format of every line is:

```
<mac> <type> <date> <license>
```

where <mac>, <type>, <date> and <license> is the same configuration options from the configuration file.

If "*licenses*" file used there is not necessary to keep license information about the same licenses in configuration files.

Including files.

GrapTC Lite configuration file can include another files by using directive *include*.

For example:

```
include=common.conf
```

All included files must be placed in directory "include" placed in directory "gc" on TFTP server.

In case of local booting they must bu placed in directory "include" placed in directory "gc" in storage root.

All settings described in included file will be accepted such as they will be placed instead of “include” directive.

You can place any number of include directives in configuration file and in including files.

Including can be very useful in cases when large number of devices must be configured with the same settings. In this case only one file with settings must be created and every device configuration file must consist of only license information and including common configuration file.

You can file samples of configurations using including in distributable archive of GrapeTC Lite.

GrapeTC profiles.

Another useful feature accessible from 2 version of GrapeTC Lite is using profiles.

Profile is a configuration file with personal users settings. All profiles must be placed in the directory “profiles” in directory “gc”.

To switch profiles on set option profile in configuration file:

```
profile=on
```

In this case after booting GrapeTC Lite user will see a dialog with asking profile name.

After profile name inputed file with this name and extension “conf” will be loaded from “profiles” folder and included to configuration.

This feature can be used in cases if users have to use personal sets of options from different devices.

Please see “GrapeTC Lite User guide” for understanding this feature from user side.

Basic settings.

Every option has a default value (will be **bold** in a tables).

Interface settings.

Table 01. Interface settings.

Variable	Possible values	Description
lang	**en**, ru, de	Interface language
geometry		Screen resolution
colordepth	**16**, 24, 32	Color depth
refreshrate	**auto**	Refresh rate (use it only if resolution you try to set is not set properly)
video	trident, via, sis, geode, openchrome, intel, **vesa**,	Video driver

	vmware,nouveau	
accelmethod	EXA, XAA, NONE	2D acceleration, try different variants, if you can't see the picture on display.
disablexextensions	on, **off**	Disabling X extensions (try if you see unstability in X11 session). DEPRECATED.
showkeyboardlayout	on, **off**	Keyboard layout indicator. Don't use on slow devices.
numlockoff	on, **off**	Disable switching numlock on on start. Useful for laptops.
localconfigmodifiers	shift, ctrl, alt, shift+alt, shift+ctrl, alt+ctrl	This option adding modifiers for F12 hot key for running configuration program. It may be used only if configuration file is placed on the disk.
java	on, **off**	This option must be used if the connection requires Java. For example applet in Firefox.

Network configuration variables.

These options may be used only with local booted systems.

If “ip” option is set DHCP will be switched off and local booting parameters will be used.

Table 02. Variables for local booting.

Variable	Possible values	Description
interface	**eth0**	Network interface name
ip		Static IP address
netmask		Net mask
gw		Default gateway
dns		DNS

Wi-Fi

GrapeTC Lite supports USB Wi-Fi. IP address and other settings can be set via DHCP. The list of supported hardware is available in section “Supported hardware”.

Table 03. Wi-Fi variables.

Variable	Possible values	Description
wifirt3070sta	on, **off**	Switches Wi-Fi on
wifirt3070staauth	open, wep, wpa,802.1x	Authentication method
wifirt3070stasession		SSID
wifirt3070stakey0 wifirt3070stakey1 wifirt3070stakey2 wifirt3070stakey3		WEP keys
wifirt3070stakeynum		Key number to use
wifirt3070stapass		WPA pass phrase
wifirt3070staid		802.1x id
wifirt3070stakey		802.1x key

Session common settings.

Table 04. Session common settings.

Variable	Possible values	Description
session	**rdp**, ica, x11, vnc, nx, xterm, x11ssh, firefox, voip, vmware, mplayer	Session name (client name)
host	**ask**	Host name
username	**ask**	User name
password	**ask**	Password

Not every session will accept all these options.

Please see configuration files samples for details.

USB storages, printers and sound.

Table 05. USB storages, printers and sound.

Variable	Possible values	Description
disk	cdrom, usbhdd, cardreader	Storage mapping for ICA and RDP sessions. Can be useful with Firefox as well, in Firefox downloaded documents will be automatically saved to attached disk if this option is enabled.

diskdevice	sda, sdb, hda, sda1,.. etc.	Device to be mapped, will be recognized automatically if not set.
printer	lpt, usb, net	
printername		Printer name in terminal session
printeraddress		Network printer address in CUPS format.
printerdriver		Printer driver name: such as driver name on Windows server
printerppd		PPD filter if necessary, all filters are placed in gc\components\cups\ppd directory you can add filters provided by printer manufacturer
sound	on, **off**	Sound support in RDP and ICA

Samples of CUPS format addresses:

socket://10.0.0.1:9100 for raw printer

smb://user:pass@10.0.0.2/printername for windows shared printer

lpd://10.0.0.1/lp for lpd printer

ipp://10.0.0.1/ps for ipp printer

Network access to the printer

If the local printer is connected to a thin client that can access the network printer by URL:

http://{IP}:631/printers/printername

Where printername is the value specified in the parameter **printername**

Redirecting USB ports in RDP session

This functionality is provided by the client of Incentives Pro company (http://www.incentivespro.com). To use this technology you must:

1. install software “USB Redirector TS Edition” on your Windows server. You can download it from http://www.incentivespro.com/downloads.html
2. Set parameters *usbrdr* and *usbrdrdevlist* in configuration file.
3. USB devices necessary to redirect must be connected during your device booting.

4. When you first start RDP session you can be asked for drivers installation on a Windows server console, **please pay attention this action is not in terminal session, but on the Windows server console**.

Table 06. Redirect USB port in RDP session.

Variable	Possible values	Description
usbrdr	on, **off**	Using redirect USB.
usbrdrdevlist	vendorId1:deviceId1,vendorId2 :deviceId2, …	List of USB devices.

All the documentation of this technology you can found on the Incentives Pro website: http://www.incentivespro.com.

Enable network access to scanner

Variable	Possible values	Description
sane	on, **off**	Start scan server.
saneallow	192.168.0.1,10.0.0.0/8,[::1], [2001:7a8:185e::42:12]/64	Host name that is allowed to scan. List the hosts must be separated by commas.

Multisession.

For setting up more them one session please use the next construction:

```
sessiondesc = {
}
```

All parameters inside the brackets will be applied for particular session. For example if you should describe two sessions: VoIP and Firefox, should write configuration like this:

```
sessiondesc = {
        session=voip
        host=sipnet.ru
}
sessiondesc = {
        session=firefox
        host=www.google.com
}
```

In this example we set separate host parameter for every session.

Parameter “session” must be set for every session, there is no default value for it and if “session” parameter will not be set, session will be ignored.

It is good idea to place every session description in separate file. In this case sessions can be described like this:

```
sessiondesc = {include=voip.conf}
sessiondesc = {include=firefox.conf}
```

Here “voip.conf” and “firefox.conf” are files with separate sessions descriptions.

Please note that parameters described outside the session descriptions will be applied for every session, for example:

```
host = server.com
sessiondesc = {
        session = rdp
}
sessiondesc = {
        session = ica
}
```

Here two sessions with different types will use the same host parameter.

Desktop mode.

From 3 version of GrapeTC Lite multisession is realized as a normal desktop. You can disable it to have multisession of 2 version of GrapeTC Lite.

The next settings can be used with desktop mode.

Table 07. Desktop settings.

Variable	Possible values	Description
desktop	**on**, off	Switches desktop mode and multisession mode
iconcolor	**#000000**	The color of the text under icons.
wallpaper		URL of the picture which may be used as wallpaper. URL may be HTTP, HTTPS or FTP address. Wallpaper must be in PNG format.
localgui	on, **off**	If this option enabled local configuration application will

		be accessible from the start menu. May be used only in case if configuration file is placed on the local disk.
localguiserver	on, **off**	If this option enabled web server will be enabled and configuration may be done remotely via browser by device address. May be used only in case if configuration file is placed on the local disk.

Connection options.

Different connection types have different parameters. Your delivery may consists different connection types, here described settings for all connection types.

Any case session depended parameters must consist of session name then underline and parameter name, like in this example:

```
session=vnc
vnc_port=5901
vnc_compresslevel=2
```

In this example you can see two options: “vnc_compresslevel” and “vnc_port”. They consist of name of session “vnc” then underline and option name.

Connection types.

Here listed connection types accessible in GrapeTC Lite:

- rdp;
- freerdp
- ica;
- x11;
- vnc;
- nx;
- xterm;
- x11ssh;
- firefox;

- voip;
- vmware;
- mplayer.
- javaws

To enable connection (session) for particular type you should set it as value of “session” varible:

```
session=ica
```

or for GrapeTC Lite multisession mode:

```
sessiondesc = {
        session=ica
}
```

RDP (Microsoft terminal service)

Table 08. RDP settings.

Variable	Possible values	Description
rdp_console	on, **off**	Connect to console if set
rdp_shell		Published application name, This application will run in seamless mode
rdp_keyboard	ar, de, en-gb, es, fi, fr, fr-ca, hr, is, ja, lv, nl-be, pl, pt-br, sl, th, da, de-ch, **en-us**, et, fo, fr-be, fr-ch, hu, it, lt, mk, nl, no, pt, ru, sv, tr, possible others, supported by server	Keyboard layout on the server

FreeRDP (RDP analog)

Table 09. FreeRDP settings.

Variable	Possible values	Description
freerdp_console	on, **off**	Connect to console if set
freerdp_domain		domain
freerdp_compression	on, **off**	Enabling compression
freerdp_keyboard		Keyboard layout on the server (see possible values in freerdpkeyboardlayouts file)

VNC

Table 10. VNC settings.

Variable	Possible values	Description
vnc_display	**0**, 1, 2, etc	Display number to connect
vnc_port	**5900**	Port number to connect, if display is set, port will be ignored
vnc_compresslevel	0, 1, 2, 3, 4, 5, 6, 7, 8, 9	Compression level
vnc_quality	0, 1, 2, 3, 4, 5, 6, 7, 8, 9	Quality level
vnc_ownmap	on, off	See xtightvncviewer documentation
vnc_truecolor	on, off	See xtightvncviewer documentation
vnc_depth	on, off	See xtightvncviewer documentation

MPLAYER

Table 11. MPLAYER settings.

Variable	Possible values	Description
mplayer_vo	x11, **xv**	Video output, set x11 if you have troubles with video output

ICA (Citrix XEN AppServer/Desktop connection)

Table 12. ICA settings.

Variable	Possible values	Description
ica_domain		Domain name
ica_keyboard	Arabic (Egypt), Belgian Dutch, Belgian French, Brazilian (ABNT), British, Bulgarian, Canadian English (Multilingual), Canadian French, Canadian French (Multilingual), Chinese (PRC), Chinese (Hong Kong), Chinese (Taiwan), Croatian, Czech,	Server keyboard layout

	Danish, Dutch, Finnish, French, German, Greek, Hebrew, Hungarian, Icelandic, Italian, Italian (142), Japanese (JIS), Korean, Latin American, Norwegian, Polish (Programmers), Polish (214), Portuguese, Romanian, Russian, Slovak, Slovenian, Spanish, Spanish variation, Swedish, Swiss French, Swiss German, Thai, Turkish (F), Turkish (Q), US, US-Dvorak, **US-International**	
ica_application		Published application name, This application will run in seamless mode

XTERM (Terminal emulator)

Table 13. XTERM settings.

Variable	Possible values	Description
xterm_protocol	telnet, **ssh**	Connection protocol
xterm_port	**22**	Port to connect
xterm_bg		Background color
xterm_fg		Foreground color
xterm_fn	**"-misc-liberation mono-medium-r-normal-*-17-120-100-100-m-0-iso10646-1"**	Font, you can use Liberation fonts.
xterm_en	**"UTF-8"**	Encoding

X11SSH

Table 14. X11SSH settings.

Variable	Possible values	Description
x11ssh_port	**22**	Port for connection
x11ssh_application		Application name (may require full path). This option is required for this connection type.

VMWARE

Table 15. VMWARE settings.

Variable	Possible values	Description
vmware_domain		Domain name
vmware_desktop		Desktop name

FIREFOX

You can set any parameters acceptable for Firefox compatible browser (or plug-in, add-on etc.).

Parameters can be set as *firefox_<parameter>=<value>*

String parameters must be in quotes like in example:

firefox_browser.startup.homepage="'http://www.grapecom.com"'

This example is equal for line:

user_pref("browser.startup.homepage", "http://www.grapecom.com/");

in “user.js” file in browser profile.

All options listed on the “about:config” page in firefox browser.

Table 16. FIREFOX settings.

Variable	Possible values	Description
firefox_kiosk	on, **off**	Kiosk mode

NX

NX session consists of many parameters, please see NX client documentation for better understanding.

Table 17. NX settings.

Variable	Possible values	Description
nx_config		Path to the NX config file on TFTP server. If set all other options will be ignored
nx_port	**22**	Server port
nx_session	unix, windows, vnc, shadow	Session type
nx_desktop	kde, gnome, cde, xdm, console	Unix desktop
nx_linkspeed	modem, isdn, **adsl**, wan, lan	Link speed
XDM settings		
nx_xdmmode	**server decide**, query, broadcast,	XDM connection type, please

	list	see X11/XDM documentation for details.
nx_xdmbroadcastport	**177**	
nx_xdmlisthost	**localhost**	
nx_xdmlistport	**177**	
nx_xdmqueryhost	**localhost**	
nx_xdmqueryport	**177**	
Custom unix type settings		
nx_customunixdesktop	**console**, default, application	Desktop type
nx_commandline		Application to run
nx_virtualdesktop	true, **false**	Use virtual desktop for application
nx_xagentencoding	**true**, false	Enable X agent encoding
nx_usetaint	**true**, false	Enable taints of X replies
Windows RDP connection settings		
nx_windowssessiondomain		Windows domain
nx_windowssessionserver		Windows server
nx_windowssessionuser		Windows user name
nx_windowssessionpassword	**EMPTY_PASWORD**	Windows password
nx_windowssessionauthentication	0, **1**	0 means using credentials, 1 means show logon screen
nx_windowssessionrunapplication	true, **false**	Run application
nx_windowssessionaplication		Application name
VNC settings		
nx_vncsessiondisplay	**:0**	VNC display
nx_vncsessionserver		VNC server
nx_vncsessionpassword		VNC password
Unix compression options		
nx_usedefaultimageencoding	0, **1**	Default image encoding
nx_imagecompressiontype	-1, 0, 1, 2, **3**	Image encoding: 3 - use JPEG and RGB, 1 - Use JPEG, 2 - Use RGB, 0 - plain X bitmaps, 4 - JPEG and RGB with custom

		JPEG quality, -1 - JPEG with custom JPEG quality
nx_jpegquality	0, 1, 2, 3, 4, 5, **6**, 7, 8, 9	JPEG quality
nx_userender	**true**, false	Use RENDER
nx_disablebackingstore	true, **false**	Disable backing store
nx_disableshm	true, **false**	Disable SHM
nx_disableemulatesharedpixmaps	true, **false**	Disable shared pixmaps
nx_disablecomposite	true, **false**	Disable composite
Windows compression options		
nx_windowssessioncolordepth	8, 15, **16**, 24	Session color depth
nx_rdpimageencoding	-1, 0, 1, 2, **3**	Image encoding: 3 - use JPEG and RGB, 1 - Use JPEG, 2 - Use RGB, 0 - plain X bitmaps, 4 - JPEG and RGB with custom JPEG quality, -1 - JPEG with custom JPEG quality
nx_rdpjpegquality	0, 1, 2, 3, 4, 5, **6**, 7, 8, 9	JPEG quality
VNC compression options		
nx_vncimagescompression	-1, 0, 1, 2, **3**	Image encoding: 3 - use JPEG and RGB, 1 - Use JPEG, 2 - Use RGB, 0 - plain X bitmaps, 4 - JPEG and RGB with custom JPEG quality, -1 - JPEG with custom JPEG quality
nx_vncjpegquality	0, 1, 2, 3, 4, 5, **6**, 7, 8, 9	JPEG quality
Proxy settings		
nx_enablehttpproxy	true, **false**	Enable proxy
nx_httpproxyhost		Proxy host
nx_httpproxyport		Proxy port
nx_httpproxyusername		Proxy user name
nx_httpproxypassword		Proxy password
Other settings		
nx_enablesslencryption	**true**, false	Enable SSL
nx_disablezlibstreamcompression	true, **false**	Disable ZLIB compression

nx_disabledeferredupdates	true, **false**	Disable deferred updates
nx_audio	true, **false**	Enable sound

Advanced settings.

Some functionality of GrapeTC Lite is provided by components.

Full list of available components:

- alsa (sound);
- automount (usb storages support);
- cups (printing support);
- hotkeys (hot keys support);
- localconfig (configuration file editor);
- mplayer (mplayer and firefox plug-in);
- multisession;
- pptp (VPN connection);
- vncserver (vnc server on device);
- time (set time);
- xrandr (text monitor resolutions);
- xgcws (remote control from jGrape).

Some of then have own configuration.

VNC server.

Table 18. VNC server settings.

Variable	Possible values	Description
vncserver	on, **off**	Enable VNC server on device
vncserverask	**on**, off	Ask user before connection
vncserverpassword	**admin123**	Custom password

Hot keys.

More info about hot keys and their combinations please see in original “User guide”.

Table 19. Hot keys settings.

Variable	Possible values	Description
hotkeys	on, **off**	Enable hot keys

Remote access.

The next options are required for jGrape remote administration.

Table 20 Remote access settings.

Variable	Possible values	Description
remoteaccess	**on**, off	Allows for device to be visible for jGrape, jGrape will not find device if this option disabled.
remoteaccessssl	on, **off**	Run web service for jGrape access.
remoteaccessport	**7300**	Port for jGrape search
remoteadmin		jGrape server address, necessary for monitoring device state or getting configuration from jGrape
remoteadminport	**1111**	jGrape port

PPTP.

Table 21. PPTP settings.

Variable	Possible values	Description
pptpserver		PPTP server
pptpdomain		PPTP domain
pptpusername		PPTP user name
pptppassword		PPTP password

Time settings.

Table 22. Time settings.

Variable	Possible values	Description
timezone	**UTC**	Time zone in linux format
timeserver		NTP server to synchronize on start

Test monitor resolutions.

Table 23. Test monitor resolutions.

Variable	Possible values	Description
xrandr	on, **off**	In desktop mode provides possible monitor resolutions in start menu

Enable of additional components

Table 24. Test monitor resolutions.

Variable	Possible values	Description
java	on, **off**	Install java. For the session javaws installation is automatic.
adobeflash	on, **off**	Install flash to Firefox

Configuration encryption.

We don't recommend to use password in configuration files at all, but if this is necessary passwords can be crypted.

For this you can use gcencrypt utility, which included in standard delivery in GrapeTC Lite archive.

You need in java JRE for using it.

Run gcencrypt: *java -jar gcencrypt.jar*.

Then choose files to encrypt and type password two times.

After GrapeTC Lite booted, in case if configuration files were crypted, user will be prompted for password, and must type the same password which you used for encryption.

If right password for decrypting was not provided, user will still use proper set GrapeTC Lite, but all passwords stored in configuration will be cleared.

Supported hardware.

Network drivers.

- via-rhine (VIA);
- 8139too (Realtek);

- r8101/r8168/r8169 (Gigabit Realtek);
- e100/eepro100 (Intel);
- e1000 (Gigabit Intel);
- r6040 (RDC);
- pcnet32 (AMD).

Supported Wi-Fi.

- Ralink 3070/3071/3072;
- D-Link 3070 (DWA-125 and others);
- Edimax 3070;
- other cards based on Ralink 2870/3070, not full list is available by address http://wiki.debian.org/rt2870sta#supported.

Video drivers.

- vesa;
- via/openchrome;
- trident;
- geode;
- sis;
- intel;
- nv;
- vmware.
- nvidia/nouveau

Token, Smart Cards

- Rutoken
- Etoken

USB storages file systems.

- FAT16/FAT32;
- EXT2/EXT3.

Included terminal clients and common options for clients.

Table 25. Terminal clients common settings.

Session name	Client name	Client version	Accepted common parameters
rdp	MS Terminal service client	1.7.1	host, username, password, disk, printer
freerdp	MS Terminal service client	1.0	host, username, password, disk, printer
ica	Citrix Receiver	12.0	host, username, password, disk, printer
nx	NOMACHINE NX client	3.4.0-5	host, username, password
vmware	VMWare View open client	4.5.0	host, username, password
xterm	xterm		host, username
x11ssh			host, username
voip	linphone	1.5.1	host, username
vnc	TightVNC	1.2.9	host, password
firefox	Firefox	10	host, disk
x11	Xnest		host
mplayer	MPlayer	1.0	host
javaws	Java Web Start	1.6.0_27	host

Supported protocols.

- Microsoft RDP;
- Citrix ICA;
- X11/XDM;
- NOMACHINE NX;
- VNC;
- telnet, SSH;
- HTTP/HTTPS/FTP.

Support information.

Grapecom Ltd.
Theodosia, Ukraine
Tel.: +38 065 62 33094
Fax: +38 065 62 33094
info@grapecom.com
www.grapecom.com

For any information please contact us by mail mailto:info@grapecom.com
Please visit our forum for getting basic free technical support: http://grapecom.com/forum

