

# Glink VT100/220 Terminal Emulation Software



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# Getting started

## Create a new session

Glink always enters the Sessions screen at startup. Tap the New configuration button to define a configuration for your host.

Give your new configuration a name and type the IP address of your host system. The IP address may be a numeric address of the form 129.1.1.150, or a symbolic name (such as www.gar.no). If you need to connect to a port other than the default, this may be added to the end of the address, using a colon (:) to separate it from the rest of the address. For example, to connect to port 1311 you should specify 129.1.1.150:1311 or www.gar.no:1311.

If you are using the multi-emulation version of Glink, you can also choose terminal emulation and host communication protocol for the configuration in this screen. Tap Save when you are done. Repeat the process to configure more host systems. For IBM and VT hosts you may now be ready to go, and if you select the session in the sessions screen a connection attempt will be made.

Select the configuration and tap Menu > Settings to enter directly into the configuration menus. If you try to Connect to the selected configuration and the connection fails, then you have to go to Menu > Settings to correct or complete the connection parameters. This is also the place to go if you need to modify the IP address of your host system.

## Start a session

Tap Menu > Sessions to see the list of available configurations. Tap the name of a configuration to select it and then the Connect icon. Glink will now return to the main screen and connect to the configured host. If there is a Connect macro defined in this configuration, it will be executed.

The session menu list is displayed when Glink is started. In the General options in the Action bar drop down menu in the main screen you can configure Glink to auto connect to the first session in the list instead.

To run multiple sessions, select New Glink window in the Action bar drop down menu in the main screen. If more than one session is configured, select the session to start.

## Text size

The default value for a handheld device is to select a text size (font size) that is readable, and in most cases, suitable for the screen size.

Use zoom or scroll to see hidden parts of the display.

The initial text size is set in [Menu->Settings->Screen options->Font size](#).

## Keyboard

Glink uses the standard on-screen keyboard. The keyboard is activated by tapping the keyboard icon next to the Menu button or the main screen close to the cursor position or an input field. In the latter case the cursor will be positioned in the tapped field. Tap the keyboard icon next to the Menu button or main screen outside input fields or on a different line than the cursor is positioned, to remove the keyboard.

The keyboard can be configured to always be up in [Menu > General options](#).

## External keyboard

Glink support several keyboard shortcuts for function and control keys when using an external bluetooth keyboard, see Keyboard shortcuts for a list.

Device buttons and external keyboard buttons can also be remapped.

Select [Settings->Keyboard](#) and then see Keyboard mappings button.

## Toolbar

The toolbar can be configured to show a single-line toolbar with a select button to step through the toolbar lines or as a multiline toolbar to show all the toolbar lines. Even when the multiline toolbar option is selected, Glink will in most cases use the single-line toolbar to save space when the keyboard is up.

The default toolbars differ from emulation to emulation, but in general there is one for cursor movements, one or two for function keys and one for other keys. All toolbars can be customized to your needs and you can add macros to all of them with your own text on the buttons. The toolbar area becomes horizontally scrollable if there are more buttons defined than can be displayed on the screen. Go to [Menu > Settings > Toolbar](#) setup to customize your toolbar, or to [Menu > Settings > Screen options](#) to change the setting of the Use multiline toolbar option.

## Hotspots

Glink can be configured to create dynamic push buttons for screen text that refer to function keys, number options and URLs.

For example, if F1 is part of the screen text, it will be highlighted as a push button and the function F1 will be assigned to it and executed when tapped.

Likewise, if 1=Search is part of the screen text, the number 1 will be highlighted. When tapped, this number is added to the current cursor position and optionally followed by the Enter function to transmit it.

## Copy/Paste

Long-tap a word to select it. Drag the set of bounding handles to highlight the text you want to copy. Tap Copy on the toolbar that appears. If more than one line is selected, tap [Line/Block](#) to switch between line and block mode selection.

Tap Paste on the toolbar that appears if you long-tap an input field.

The paste function may be added as a button to your toolbar.

## Hyperlinks and mail addresses

If URLs or mail addresses are displayed, long-tap a hyperlink or mail address to bring up a popup menu. For URLs you may display the content in Glink or in a browser app. If a mail address is selected, you get the option to send a mail to the addressee.

## Export and Import configurations

You can export your current set of configurations for back-up purposes or to share them with other users. The export function is option in the action bar drop down menu. You will be asked if you want to include *Connect* macros before you are taken to the *Send Mail* function with your configurations attached to the message.

The configurations are sent as a file-attachment named config.glinki. This filename-extension is associated with Glink. This means that if you receive a Glink configurations file as an e-mail attachment and export it to the files system, you can import it into Glink by tapping the file. Glink will be started and inform you that you have received a new set of Glink configuration files. If you tap the Install button to install it, you will get a new set of configurations that will replace your current configurations. All your current configurations will be overwritten and lost.

You can also import a configuration that you have downloaded to the device from the Sessions menu, or use the Auto-import feature described in Glink MDM configuration parameters.

The export and import functions allow administrators to prepare and customize configurations for a large group of users and distribute the configurations.

## MDM Configuration Support

If Glink is deployed by a mobile device management (MDM) system, the Glink configuration can be completely controlled by the MDM system, making Glink ready for use without any need for configuration by the end user.

### **Glink MDM configuration parameters**

Glink has a large number of configuration parameters that are available through the Settings screens in Glink.

A Glink configuration can be exported and then be imported by Glink on another device.

An MDM server can instruct Glink to import a Glink configuration file from a network location with the following parameters:

#### **config.version**

This parameter (key-name) specifies the version of the MDM parameters. If the version matches the version on the device, the rest of the parameters are ignored.

#### **config.url**

This parameter (key-name) provides the URL of the Glink configuration file. Please note that this parameter is ignored if the config.version parameter is missing or the version matches the version on the device.

Here is an example:

```
config.version=2
```

```
config.url=http://myhost.mydomain.xx/glink/group1/config.glink
```

Use the following keys to set up a Glink configuration directly

#### **config.name**

This is the name of the configuration and must be provided. The configuration is created if it does not already exist. Additional parameters will be set for this selected configuration.

### **com.servername**

This specifies the IP address of your host

Here is an example:

```
config.name=myhost  
com.servername=myhost.mydomain.com
```

These parameters are sufficient to create a host configuration with default values.

How you set these parameters will depend on your MDM. Different methods are used. While some MDMs present a menu with the parameters that can be set, others require an XML-file with key-name and key-value pairs.

## **Auto import from file location on device**

Some MDM servers can export files to the MDM controlled devices. You can use this feature to distribute Glink configuration files to the devices. Glink will check the following path for a new Glink configuration file:

```
/SD Card/.GlinkVT/import/config.glinki
```

The "SD Card" folder (sometimes also referred as Phone Storage or Internal Storage) is often addressed like `/storage/emulated/0/.GlinkVT/import/config.glinki`

Glink will also check the following path for a Glink license file:

```
/SD Card/.GlinkVT/import/licenses.glinki
```

If when Glink finds these files, the files will be imported and deleted from the import folder. The current configuration and license will be overwritten and lost.

## XML Schema

The AppConfig Community, supported by a collection of industry leading EMM solution providers, have defined a standard schema to configure apps. Using this definition, the Glink parameters can be specified in a XML document using the following syntax:

```
<managedAppConfiguration>
<version>1</version>
<bundleId>no.gar.glinkVT</bundleId>
<dict>
  <string keyName="config.name">
    <defaultValue>
      <value>MyConfigName</value>
    </defaultValue>
  </string>
  <string keyName="com.servername">
    <defaultValue>
      <value>MyServerAddress</value>
    </defaultValue>
  </string>
</dict>
</managedAppConfiguration>
```

# Glink Menu

## Sessions

The Sessions screen allows you to change the current host session and add new host configurations. Most parameter settings are per session. The current configuration is displayed in blue. By tapping Settings in the Menu, you can change the configuration parameters for that particular session. By tapping a different session than the one that has a check mark, you can switch the main screen to this session.

## **Connect**

Select a session name and tap the connect icon. Glink will now return to the main screen and connect to the configured host. If there is a Connect macro defined in this configuration, it will be executed.

## **Settings**

Change one or more of the parameters for the session selected.

## **New**

The New options lets you create a new session configuration. After a session is created, select the Settings option to change the default settings.

## **Remove**

Removes the session selected.

## **Rename**

Renames the session selected.

## **Import**

Import a Glink configuration that is downloaded to the device. The current configuration will be overwritten and replaced.

## **Export**

Export the Glink configuration to the Download folder.

## **Templates**

List and manage templates. If you intend to define several sessions with similar settings, a predefined template can simplify the process of defining a new session.

## **Reorder the session list**

The session list can be reordered by doing a long press at a session entry, and then move the entry by dragging it when a rectangle is shown around the entry (wait with the move until the rectangle shows up).

## Settings

Tap here to modify configuration parameters for the current session.

### **Scrollback**

Tap here to enter the Scrollback buffer. Here you will see all the data that has scrolled off the top of your main screen and all the forms that you have accessed since you connected the current Glink session, provided that the size of your buffer is big enough. You configure the Scrollback length (in pages) in Menu > Settings > General. The content of the scrollback buffer can be printed or sent as an e-mail attachment and you can mark and copy selected text. If text is marked when you tap the Mail or Print button, only the marked text will be sent/printed. Tap the Glink button to return to the main screen.

Tap Clear to clear the Scrollback buffer.

Tap Mail to Mail the scrollback buffer.

Tap More actions to perform other actions like print.

### **Print screen**

Tap here to print or e-mail the current screen content. It can be printed/e-mailed either as text or as a JPEG image. Tap the Glink button to return to the emulation window.

Tap Mail to Mail the Print data.

Tap More actions to perform other actions like print.

### **Record macro**

Tap here to record a macro. Before you tap the OK button to start recording, you have to choose whether you want to record a Toolbar macro that you will assign to a button on the toolbar (default) or if you want to record a Connect macro that will be executed every time you connect this session to the host. The Connect macro is typically used to logon on to the host, start the desired host application and position the user in the desired startup form. Toolbar macros are typically defined for frequently used operations to avoid time consuming navigation and typing. When recording a macro you can use the Pause button next to the Enter button to specify that you want to wait for user input or that the execution of the macro should pause a number of milliseconds at this stage. This is useful if the host unlocks the keyboard and allows keyboard-/macro-input before it has completed its output to the terminal. User input can be collected at macro startup or at the stage where the input is required.

When you are at the end of the macro function you wanted to record, you go to **Menu > Record Macro** and assign a button text and tap Save recording. The macro will now be saved to the current toolbar. You can move it to a different toolbar from **Menu > Settings Toolbar** setup. If you made a typing error during the recording, you must tap **Cancel** in **Menu > Record Macro** to delete the recorded macro and go back to the main screen. Toolbar macros are removed when you remove their buttons from the toolbar. To remove a Connect macro, you first have to tap **Connect** macro in **Menu > Record Macro**, then tap **Remove** Connect macro. If you want to define a completely new Connect macro, you now tap the **Start** recording button. If you don't tap Remove connect macro before you tap the Start recording button, you will extend the current Connect macro.

## **Debug mode**

Tap here to enable/disable Debug mode. In this mode all data sent to and from the host is written to a Debug screen. When enabled, you will see a Debug icon at the top right of the screen, next to the Enter button. Tap the Debug icon to go to the Debug screen. The content of the debug screen can be printed or sent as an e-mail attachment and you can mark and copy selected text. If text is marked when you tap the Mail or Print button, only the marked text will be sent/printed. Tap the Glink button to return to the main screen.

When Debug mode is enabled all data sent to and from the host is written to this Debug screen, and you will see a Debug icon at the top right of the screen, next to the Enter button. Tap the Debug icon to go to the Debug screen. The content of the debug screen can be printed or sent as an e-mail attachment.

Tap Clear to clear the debug screen.

Tap Mail to Mail the debug screen.

Tap More actions to perform other actions like print.

Tap Mail config to Mail your set of configurations to yourself for back-up purposes or to someone else for sharing. The configurations are sent as a file-attachment named config.glink. You will be asked if you want to include Connect macros (if you have any) before you are taken to the Send Mail function with your configurations attached to the message.

## **New Glink window**

This option allows you to open another Glink window to run multiple concurrent host sessions. Use the switch session icon presented in the action bar at the top to switch between the sessions started.

## **Remove Glink window**

This option is presented if more than one session is started.

## **Print logging**

Tap here to toggle this option. When enabled a check mark is shown and all sent and received data is logged/captured to the print buffer.

## General Options

General options are parameters that are common to all sessions. These options are common for all the sessions defined.

### **Move Disconnect function to drop down menu**

The Disconnect function is normally available as an icon in the Action bar at the top of the screen. With this option you can instead place the Disconnect function in the Action drop down menu.

### **Show Enter on Action bar**

This option displays the Enter button on the Action bar. Can be used instead of the keyboard Enter button.

### **Screen orientation**

This option locks the screen to the selected orientation.

### **Auto-connect session at startup**

Normally Glink displays the Session screen at startup. Use this option if you want to skip the Session screen and instead connect to the first session defined in the Session screen.

Please note that you can reorder the session list by doing a long press at a entry in the session list, and then move the entry by dragging it when a rectangle is shown around the entry.

### **Auto-reconnect if connection lost**

If the host connect is lost for some reason, Glink can try to reconnect the session. You can specify both the number of retries and the time interval between each retry, for example:

4	Retry four times with a time interval of two seconds
3*4000	Retry three times with a time interval of four seconds
3*5000;2*60000	Retry three times with a time interval of five seconds, then retry two times with a time interval of one minute

The max value for retry is 100. The max value for timer interval is 300000 milliseconds (five minutes).

If user disconnects the session, no retry is performed.

## **Disconnect at lock screen**

Disconnects the line if the screen is locked (turned off). Often the is line is disconnected by Android even if this option is not turned on.

## **Never Auto-Lock when connected**

When selected, this option disables the Android "sleep" setting when Glink is the active (visible) app and is connected to the host application.

## **Keyboard up**

### *Default*

Glink will show the keyboard when you click at an input field and hide it when you click outside an input field.

### *On*

This option will always show the keyboard. You can still hide the keyboard with the keyboard button located at the toolbar.

### *Off*

Keyboard appearance will be controlled by the keyboard button only.

## **Toolbar clicks**

### *Off*

No sound

### *Sound 1*

Play toolbar click sound 1

*Sound 2*

Play toolbar click sound 2

## **Send/Receive notification sound**

*Off*

No sound

*On*

Play sound when sending and receiving host messages

*Send only*

Play sound when sending host messages

*Recv only*

Play sound when receiving host messages

## **Show Sessions view when disconnected**

Glink will display the Sessions view after a one second delay when the connection with host is lost.

## **Show Exit command in drop down menu**

Show an Exit Glink command as in Windows.

## **Protect Configurations**

This option prevents users from changing or viewing the configurations. The password is required for the functions; Settings, General options, New configuration function and Export configurations.

## **Export configurations**

Use this function to export your configurations by mail for back-up purpose or for sharing. The configurations are sent as a file-attachment named config.glinki You will be asked if you want to include Connect macros (if you have any) before you are taken to the Send Mail function with your configurations attached to the message. To import the configurations, send it to your device by mail and select the attachment.

## **Help**

Tap here to enter the online help pages.

## **Connect icon (Green monitor)**

Tap here to connect to the host specified in the current session configuration. If a Connect macro is defined for this session, it will be executed.

## **Disconnect icon (Red monitor)**

Tap here to disconnect the current session.

## **Keyboard icon**

Tap here to bring the on-screen keyboard up/down.

# Communication

## Telnet options

### **Server address (host address)**

The Server address is normally the TCP/IP address to the server/gateway you connect through to reach the host.

The address may be a numeric address of the form 129.1.1.150, or a symbolic name (such as www.gar.no).

If you need to connect to a port other than the default, this may be added to the end of the address, using a colon (:) to separate it from the rest of the address. For example, to connect to port 1311 you should specify 129.1.1.150:1311 or www.gar.no:1311.

*The default ports in Glink for are:*

G&R Ggate native protocol	30841
Telnet, TNVIP, TN3270, TN5250	23

*Note that the Bull TNVIP servers on Unix/Linux or Windows generally use non-standard ports, normally 7323, and you must add this to the IP address.*

### **IPv6 address**

If an IPv6 address is specified and you must specify a port number, use the following syntax:

[IPv6 address]:port

for example : [2001:db8:85a3:0:0:8a2e:370:7334]:673

### **Terminal type**

This option specifies the string that should be returned by Glink when a Telnet terminal type enquiry is made by the host at connect time.

## Line terminator

Normally in ASCII sessions input lines are delimited with CR+LF. Some hosts may demand that you use CR+NUL and others just CR; this option allows you to talk to such hosts.

## Use IP (Interrupt Process) command for break

Normally Glink will send a break to the host as a standard Telnet break. Some applications are coded in such a way as to require an Interrupt Process command. If 'break' is not behaving in the way you expect then enable this option to see if this helps.

## Binary mode

When this option is set, new sessions will be opened as binary sessions rather than ASCII sessions. This will possibly give 'strange' results that will require stty commands to give acceptable screen output.

## Keep-alive

Specifies how often TCP sends keep-alive probes. TCP sends keep-alive probes to verify that an idle connection is still open. By default, keep-alive probes are sent after 2 hours of inactivity or not at all. It depends on the version of the operating system. The number of keep-alive probes that are sent is also system specific. The keep-alive parameter allows you to set both the keep-alive time and the keep-alive interval in seconds. The format is time, interval

For example:

- 1200,5* Specifies that keep-alive probes will be sent after 20 minutes of inactivity, and then repeated every 5 seconds until the max number of keep-alive probes has been reached.
- 1800* Specifies that keep-alive packets will be send after 30 minutes of inactivity, and then repeated every second until the max number of keep-alive probes has been reached. One-second interval is the default value.

## Simulate parity

The parameter should normally not be used, but if the host needs 7 bits characters with parity, check this option.

## Telnet login

If one or more of the parameters below is specified, Glink will try to login to the host. If the login string or the password is not specified, the login parameters will be asked for at connect time.

Please note if a connect macro is defined it will be ignored.

### ***Wait for login prompt***

Instructs Glink to wait for the login prompt string before sending the login string, this may for example be login. Please note that the string is case sensitive.

If no string is specified, Glink will wait for the first string received from host.

### ***Login with***

Specify the login string. If not specified, the login string will be asked for at connect time.

### ***Wait for password prompt***

Instructs Glink to wait for the password prompt string before sending the password, this may for example be Password. Please note that the string is case sensitive.

If no string is specified, Glink will wait for the next string received from host.

### ***Password***

Specify the password. If not specified, the password will be asked for at connect time. If a password is not needed, supply a \* to avoid that the password is asked for at connect time.

Note: An <enter> is performed after both the Login string the password. If the parameter includes a function string at the end, the default Enter function will be ignored. In some cases, a Tab is needed after the Login string. The syntax for the Tab function is ^"f58"

The example shows how to do an auto-login to an AS/400 host using VT emulation

```
Wait for login prompt: 1998
Login with:           MyName^"f58"
Wait for password prompt: [
Password:             MyPassword
```

where [ is part of an invisible cursor control sequence

## Secure sockets

Check this option to use a secure connection to the host. The host side must of course support this type of connection. The default value for the port number is 992 (GGate 30851). If the host side uses another port number, specify the port number in the host address field, for example:

```
myhost.com:842
```

When connected, a lock icon will be shown in the toolbar. Tap the icon to view the host certificate information.

### *IPv6 address*

If an IPv6 address is specified and you have to specify a port number, use the following syntax:

```
[IPv6 address]:port
```

```
for example: [2001:db8:85a3:0:0:8a2e:370:7334]:673
```

## Authenticate server certificate

Glink verifies that the server certificate is from a Trusted root certificate authority in order to accept the SSL connection.

## SSH Options

If this option is enabled, you will be able to configure that the host communication will be routed through the SSH server specified addressed.

Please note that if Use SSL Connection and Use SSH Connection both are selected, SSL will be used.

### **Server address**

Specify the address to the SSH server. The default port number for a SSH server is 22 and will be used if not specified. Another port number may be specified after the host name or IP address, using a colon (:) to separate it from the rest of the address.

#### *IPv6 address*

If an IPv6 address is specified and you have to specify a port number, use the following syntax:

[IPv6 address]:port

for example: [2001:db8:85a3:0:0:8a2e:370:7334]:673

### **User name**

Specify the SSH user name. If not specified, the user name will be asked for at connect time.

### **Password**

Specify the password (passphrase) for client authentication. If not specified, the password will be asked for at connect time. If a password is not needed, supply a \* to avoid that the password is asked for at connect time.

### **Private key file**

If a private key is needed for client authentication, specify the file name to a private key file . If the private key is passphrase protected, supply the passphrase in the Password field. See also how to import a private key file.

### **How to import a private key file**

Glink will handle files with .glinki as the file name extension, i.e myfile.glinki. One way to import it is to send it as a mail to your device with myfile.glinki as an attachment. Click on the attachment and Glink will ask if you want to import it as a new configuration (your configuration will not be overwritten in this case).

The myfile.glinki must have the following format:

```
[[file:my_pk_file]]
```

```
Add the content of the private key here...
```

Glink will create a file with the file name my\_pk\_file with the content supplied.

In the Telnet or SSH configuration dialog box, enter my\_pk\_file in the Private key file field.

### **Terminal type**

Specify the pseudo terminal, for example vt220. A pseudo terminal is required if you want to log on to the SSH server and run Secure Shell using Raw TCP/IP with no port forwarding.

### **Number of cols**

Specify the number of columns for the pseudo terminal, for example 80.

### **Number of rows**

Specify the number of rows for the pseudo terminal, for example 24.

### **Keep alive interval**

Specify the interval in seconds for the keep alive messages sent to host. Default value is 0, which means no keep alive messages are sent.

# Emulation

## VT Options

### **ECHO mode**

Echo mode is a mode in which characters you type are not displayed locally, but just sent to the host machine. Usually the host will send these back to you ('echo' them) as you type. If you are not seeing what you are typing then possibly you need to turn off Echo mode (in which case Glink will display the characters locally). If you see every character you type twice, on the other hand, that's a fairly sure sign that Echo mode needs to be turned on.

### **ROLL mode**

Roll mode is the normal method of operation. When a new line is received and the emulator is already positioned on the last line of the screen, all lines of the screen are moved up one position. The original top line of the screen is lost (but will be saved into your scrollback buffer if you have configured one). Reception of a new line in the bottom line of the screen is an error and will result in the DATA OVERFLOW error message.

### **Line mode**

When a character is typed it is first sent to the host application, then returned (echoed) back from the host application and finally displayed on the screen. The host application has full control of what is displayed on the screen. This is the default behavior for VT and ANSI emulations.

However, some host applications expect to receive the characters line by line instead (Line mode). In this mode the characters are displayed on the screen when typed, but the characters are not sent to the host until the Enter key has triggered a Line mode send. In fact, most control keys will trigger a Line send to the host application.

Line mode options:

Off	Default, Line mode is not used
Basic	Line mode is on, every control character except the Backspace key will trigger a line mode send
Extended	Line mode is on, every control character except the Backspace, Delete, Home, End, Cursor forward and Cursor back keys will trigger a Line mode send.

Please note that the *Echo* mode option should be checked even when Line mode is selected.

In Extended Line mode the listed keys will perform a local operation on the typed characters not yet sent. In the VT emulation, the *Home* function is on the *Find* toolbar button and *Home* key, the *End* function is on the *Select* toolbar button and End key, the *Delete* function is on the *Remove* toolbar button and *Delete* key.

## Add LFs to CRs

If this option is turned on, then GLINK will automatically add a 'line feed' character to all 'carriage return' characters received from the host. This option may be used in cases where all the data from the host is written on the same line of your screen.

## No column 81

This option decides exactly how the emulator treats the right hand column of the screen . This option should only be needed in exceptional circumstances.

## Backspace key action

The backspace key can either send to the host BS (0x08), DEL (0x7f) or BS pluss DEL (0x08+0x7f). Normally the Backspace key sends hex 08 character to the host.

## Answerback

This option allows you to configure an 'answerback' string to be used when the host machine sends an ENquiry character to the emulator. Any string may be entered here. If control characters are required inside the answerback string use the '^' prefix notation, for example ^M for CR.

### Mac address

To insert the mac address of the device use the following key word in the answerback string:

&MAC	Adds the 6 octets mac address as a 12-character hex string
&MAC_	Short mac address, adds the last three octets of the mac address as a 6-character hex string.

## VT DA Alias

Specifies the Device Attributes (DA) respond.

## Transliteration

### **UTF-8 encoding**

Set this option if the host uses UTF-8 encoding to send/receive Unicode characters. Glink uses Unicode internally, so no further transliterations are needed and the transliteration options become redundant.

### **Eight-bit host**

Most host application uses an 8-bit character set, and this option is on by default.

### **Allow lowercase to host**

When this option is set, lower case data from the keyboard will be sent to the host as is. If the option is unchecked, then any lower case data will be converted to upper case before being sent to the host.

### **Host character set**

Normally the host is set up to use an 8-bit character set. Glink needs to know which character set is used by the host in order to convert 8-bit characters to Unicode characters used internally by Glink. The default character set is ISO 8859-1, which is normally used in Western Europe and USA.

### **National transliteration (7-bit host)**

Some host supports 7-bit character set only. The transliteration tables listed are used to convert from 7-bit national characters to 8-bit characters. Then Glink converts the 8-bit character to Unicode.

### **Use SI/SO for printing**

Normally the SI/SO control characters are used to indicate line graphics from the host. Some special-purpose applications use them for print control, however, and for such applications this option must be enabled.

## Emulation – General Options

### **Auto Tab Local**

If this option is selected, then an automatic tab to the next field of a form will be performed as soon as the last character of the field has been typed. If not selected, then no action will be performed until either the Tab key or the next character is entered.

### **Auto Tab host**

This option controls whether automatic tabbing (move to the next field of the form when the last character of a field is entered) should also be applied to input coming from the host machine. The normal Glink action here is not to perform such automatic tabbing for host data even when local auto-tab is set. The option may be required for host applications developed using emulators that make the assumption that auto-tabbing applies equally to local and host data. This option applies to VIP and DKU only.

### **Destructive backspace**

Effective only for modes where characters are being echoed locally by the emulator, this option specifies that the backspace key should replace the character backspaced over with a space character. Note that in insert mode backspace will in any case delete such characters, and also move that part of the line following the cursor one character to the left.

### **Capture delimiter**

This option decides how CR and LF characters should be treated when capturing or logging to print. When set to CR or LF then a new line will be started when that character is received, and the other will be ignored. When set to CRLF, CR and LF characters will be passed transparently to the capture file (or printer). Normally this option should be set to LF but for certain special applications you may need to change the option to get correct output on the capture file. This option is not acted upon in VT100 modes, which support data capture compatibly with the built in print functionality on the actual terminals.

### **Scrollbar length**

This option lets you specify the maximum number of scrollbar pages saved. Note that each extra page of scrollbar you configure will cost extra memory allocated.

## **Initial screen width**

This option lets you choose between screen widths of 40, 80 and 132 columns (normally the choice of emulation mode will set this correctly for you).

## **Initial screen height (rows)**

This option lets you choose the number of rows. The default value is 24 rows.

## Screen -Toolbar setup

### **Add**

This option allow you to add new buttons to the current position in the current toolbar, so before tapping Add select the toolbar and toolbar-position where you want to add the new button(s). From the Add button screen you can select one or more buttons to be added. The button can either be used to activate a predefined function (key) or a Macro. Tap Save when you have completed your selection. If you decided to add a Macro, use the Modify menu function to set the button name and the macro string to be executed. See Macro string section below on how to define a macro string.

Note that the simplest way to define a Toolbar macro is to use the macro-recording feature available from Menu > Record macro. See the help page for Record macro

### **Modify**

Each button in a toolbar can be modified by Modify menu function. You can modify the text displayed on the button for this particular function by editing the Button text field. If the Button selected is a Macro, you have to define the Macro string to be executed when the button is tapped.

### **Remove**

Use the Remove menu function to remove a button from the toolbar. The last button removed can be added again using the Paste menu function. Select a new position to paste the button at a new location.

### **Paste**

See Remove menu function above.

### **Add toolbar**

This option allows you to add new buttons to a new toolbar. From the Add toolbar screen you can select one or more buttons to be inserted. Tap Save when you have completed your selection.

## Button size

This option allows you to adjust the width and height for all the toolbar buttons with a scaling factor (from 0.2 to 5.0).

Please note that the width for an individual button can be doubled by preceding the button text with a \* (star). For example, if the button text is modified from Enter to \*Enter, the button text shown is Enter but the button width is doubled.

## Macro string

When entering a macro string, in addition to plain text, there are several conventions, all of which are signaled using the caret (^). If you wish to enter a 'real' caret then you must type it twice (^ ^).

Control characters may be entered using the normal convention with a letter following the caret symbol. For example, a return is ^M and a line feed is ^J.

You may also send specific ASCII codes in hexadecimal, decimal, or octal form by following the caret with a \$, #, or & character, and the desired code:

^#ddd	decimal specification
^&ooo	octal specification
^\$hh	hexadecimal specification

Note that decimal and octal codes must be 3 digits and prefixed with 0 if it is 2-digit codes.

Transmitting the string you have defined on a macro can be awkward if you are working in multiple environments where you sometimes need a CR terminator and sometimes need an ETX or EOT. To do this transparently, use the conventional form ^! (caret + exclamation mark). The correct line terminator will be sent depending on the mode in which the emulator is operating. Note that if a macro contains multiple transmits then the macro execution will be suspended on each transmit and resumed when the host has responded. This functionality is only reliable for host connections with a 'turn' mechanism that signals when the host response is finished (DSA, Ggate and TNVIP).

Function codes (for those using synchronous interfaces) may be sent using the form '^=x', where 'x' is the function code you wish to be sent with the next message to be transmitted.

If the last character in the macro string typed in is '^', it will be ignored. This can in fact be useful: in that trailing spaces are deleted from the input you type, you can use an appropriately placed '^' at the end of the string to ensure that required trailing spaces are actually included. For example, entering 'ABC ^' will provide a trailing space after the 'ABC'.

## Screen Options

### **Font size**

This option defines the initial font size to be used when Glink is started. If a large font is selected, some part of the screen display may not be visible without scrolling to it.

The Auto value selects a font size that is readable and, in most cases, suitable for the screen size.

The Fit screen options adjust the Glink display to fit the screen size. In order to do that, the characters will be stretched or squeezed.

### **Font name**

This option defines the name of the font used in the emulator window. Only mono spaced fonts are available.

### **Font style**

Here you may choose the display style for your chosen font (iOS only).

### **Cursor type**

The cursor indicates the current screen position for the emulator (as opposed to the mouse cursor, which operates independently). This option is used to choose one of the three available cursor types — a block cursor, a horizontal line cursor, or a vertically bar cursor.

### **3D variable fields**

This option enables use of 3D effects for variable fields for those emulations that support the use of forms. You have four options, "On without attributes", "On with attributes", "On without underline" and "Show as underline". Normally a 3D field has white background, but you may keep the initial attributes set by the host for those input fields. The attributes can for example be specific background color or underlined text.

### **Blinking cursor**

Here you may choose the cursor to blink. Please have in mind that a blinking cursor requires more resources, so screen updating and scrolling might look better without it.

## **White background 3D fields**

This option forces the background of a 3D variable field to always be white regardless of the default background color selected.

Similar, if the host specific sets the background color for an input field, the background color will still be white.

if you want the foreground color to always be black, select the 3D variable fields option "On without attributes".

## **Show toolbar**

The toolbar can be shown as a single-line toolbar with a toggle button to switch between the toolbars defined or as a multiline toolbar where all the toolbars defined are shown. If the multiline toolbar option is selected, Glink will still use the single-line toolbar to save space when the keyboard is up.

The Off value means that the toolbar is not shown by default.

Please note that you can change the number of buttons and the number of toolbar lines with the Toolbar setup function.

## **Limit screen view (x,y)**

If a host application uses just a part of the screen, the screen view may be decreased to match this size. The right and lower part will just be cut off and not visible. For example, if the parameter is set to "40,20", only the first 40 characters of each line up to line 20 will be visible. This parameter has no impact on the emulation itself.

"x" limits only the number of columns, "y" limits only the number of rows.

## **Use double tap to**

This option specifies the action performed when double tapping the Glink screen, either Reset screen size, Perform Enter, Toggle Action bar On/Off or Enable/Disable touchscreen.

The Reset screen size sets the initial screen size, the Perform Enter does an Enter (Send) command.

The Toggle Action bar On/Off (On) and Toggle Action bar On/Off (Off) toggles the Action bar On or Off. In the latter case, the Action bar is initially hidden. When the Action bar is hidden, it can be handy to add an Enter button to the toolbar (acts as a connect command if the session is disconnected).

The Enable/Disable touchscreen (Enable) and Enable/Disable touchscreen (Disable) enables/disables the touch screen. In the latter case the touchscreen is initially disabled. When the touchscreen is disabled, both the Action bar and the Toolbar is hidden. External keyboard (keys) or scanner is not be disabled.

## **Extra line spacing**

Add extra space between the lines (gives more space for hotspots if used). A negative number will decrease the standard line spacing.

## **Force fixed character width**

Glink uses a fixed font, but for some special characters and symbols, the width may still vary. This option forces Glink to update the screen character by character at the correct position. Might slow down the screen update (Android option only).

## **Hotspots**

The hotspot options tell Glink to search for specific keywords on the screen and highlight these as push buttons and assign a function to each of them.

For example, if the F6 text is on the screen, it will be highlighted as a push button and the function F6 will be assigned to it and executed when tapped.

If Option numbers is enabled, text like 2. or 2= will be searched for and highlighted (the number only). If this hotspot is tapped, the number is added at the current cursor position. Optionally it can be followed by the Enter function to transmit it. Numbers larger than 99 is not converted to hotspots.

If the next Option numbers is enabled, numbers that are both proceeded and followed by a space will be searched for and highlighted. If this hotspot is tapped, the number is added at the current cursor position and optionally followed by an Enter function to transmit it. Numbers larger than 99 is not converted to hotspots.

If Option characters is enabled, characters followed by the = character will be highlighted. If this hotspot is tapped, the character(s) is added at the current cursor position and optionally followed by an Enter function to transmit it. For example, S will be regarded as a hotspot for the text S=Search.

If URL address is enabled, URLs will be highlighted. If this hotspot is tapped, Glink will either open an external browser or use the built-in browser in Glink to display the URL content.

## Screen Colors

### **Color selection**

The screen color options allow you to choose the default foreground and background colors for the emulator screen and for the status line.

The default name of the colors available are listed together with icon. If the color name does not match the color icon, the color have been adjusted.

### **Color adjustment**

The color adjustment options allow you to adjust the 8 dark plus 8 bright foreground colors and the 8 background colors. The original color's names are displayed in the color adjustment display. If a color has been adjusted, it may not match the name for that color.

## ANSI/VT/DKU Attribute Mapping

This configuration table allows you to select which attributes should be used in practice for various combinations of attributes sent by the host application.

There are four different color schemes available. In addition, a Custom colors is available if you have modified one of the default ones.

Normally Glink will preserve the state of the underline as it is sent by the host, but if you have mapped underline to a specific color then you may find that to be enough. In that case uncheck the Use underline option.

You may modify the color scheme selected to create your own one. Click on the attribute field to remap. Then choose the desired foreground and background colors from the list boxes. Repeat these operations for the other attribute fields to be remapped.

If you have modified one of the existing colors schemes, it will be saved as Custom colors scheme. If a custom colors scheme already exists it will be overwritten.

## Print options

### **Printer type**

This option allows you to select where to print the data.

The Default option directs the print to a Print screen window for further processing. A print icon will be displayed at the action bar when print is available. Tap the icon to see the print data and the options available.

The LPD server option directs the print to a LPD print server. Tap the config icon to specify the LPD print parameters.

The Bluetooth printer option directs the print to a Bluetooth connected printer. Tap the config icon to select a paired bluetooth printer.

The None option will ignore the print data.

### **Timeout**

This option specifies how long Glink should wait before emptying print output from the host to the printer.

## Barcode reader options

Glink can either receive scanner data as simulated keyboard input (HID mode) or receive scanner data through device specific configuration. Most scanners are by default set up in HID mode.

It is however recommended to use device specific configuration if available (or Advanced HID mode) since that gives better performance and more control of how scanned data is handled.

When device specific configuration is selected, scanned data is displayed on the status line. If not, scanned data is received in HID mode and you should check your settings.

### **Barcode reader device type**

Select the proper barcode reader device type:

#### **HID mode**

Default. Scanned data is received as keyboard input. Glink cannot separate scanned data from keyboard input.

#### **Advanced HID mode**

Scanned data is still received as keyboard input, but if a special prefix and suffix character is configured Advanced HID mode is used.

#### **Camera**

Enables scanning using the camera. An icon is added to the action bar at the top of the Glink display. Tap the icon to use the camera for barcode scanning.

#### **AML scanner**

Use with AML devices. Use the AML Barcode Scanning app supplied with the device to set scanner parameters.

### **More options**

Please note that most scanner software can be configured with options like the ones below. Make sure that these options either is set here in Glink or in the Device Scanner settings itself. Check the Device Scanner manual.

**Action after scan**

None	Do no action after scanning
Tab	Do Tab after scanning
Enter	Do Enter after scanning
FldExit	Do Field Exit after scanning (5250 emulation mode only)

**Remove char(s) at start**

Removes one or more characters at the beginning of the barcode.

**Remove char(s) at end**

Removes one or more characters at the end of the barcode.

**Add text before**

Add text before the barcode.

**Add text after**

Add text after the barcode (the Action after scan will be added after this text).

**Show on status line**

Display the scanned data as a status message at the bottom of the screen as well.

## Keyboard

Glink uses the standard Android on-screen keyboard. The keyboard settings and are found in the Android settings app in the Language & input section.

The keyboard can be configured to always be up from the main Glink screen in [Menu > General](#) options.

### **Keyboard mapping**

Glink is set up with a default keyboard mapping. You may override the default mapping or add a mapping for a hardware button (key) on the device itself or a key on an external keyboard.

Device buttons and keys can be remapped, select [Settings->Keyboard](#) and then see Keyboard mappings button.

The list box displays the keys mapped if any.

Press the key or button to map (i.e. Volume up button). Select the keyboard icon button to bring up the soft keyboard if need.

Once a key is pressed, a new row is added. Select the Map button to map the key to a function or macro. (See Define Macro)

If the key you want to map is the last one of two input keys, select No for mapping the first key and Yes for the second one.

If a macro is selected, select the Macro button to define the actual macro.

Select the Remove option from the drop-down list to remove a key mapping.

## Keyboard shortcuts

Some external keyboards do not have the function key F1 to F10. Instead, you can use either the function key buttons on the toolbar or the numeric keys 0 to 9 in combination with the Alt or Ctrl keys on the external keyboard.

Please note that you can use the Cmd key instead of the Alt key, however only the Alt key is used in the documentation below.

For the IBM 5250, IBM 3270 and VT emulations the following mappings are defined:

F1 to F10	Alt+1 to Alt+0	(or F1 to F10)
F11 to F20	Ctrl+1 to Ctrl+0	(or Shift+F1 to Shift+F10)
F21 to F24	Shift+CTRL+1 to Shift+CTRL+4	(or Alt+F1 to Alt+F4)
F13 to F24	Shift+F1 to Shift+F12	
Find	Alt+ f	
Select	Alt+ s	
Remove	Alt+ r	
PageUp	Ctrl+Cursor Up	
PageDown	Ctrl+Cursor Down	
Escape	Escape	
Tab	Tab	
Backtab	shift/Tab	
Home	Alt+Cursor up (or Home)	
End field	Alt+Cursor right (or End)	
Arrow key	Cursor up/down/left/right	
Connect	Alt+c	
Disconnect	Alt+d	
Break	Alt+b	
Next	Alt+n	

## Define Macro

The macro must be defined and the Macro string field below defines the macro.

## Button text

The button text is information only and is not used when the macro is executed.

## Macro string

When entering a macro string, in addition to plain text, there are several conventions, all of which are signaled using the caret (^). If you wish to enter a 'real' caret then you must type it twice (^ ^).

Control characters may be entered using the normal convention with a letter following the caret symbol. For example, a return is ^M and a line feed is ^J.

You may also send specific ASCII codes in hexadecimal, decimal, or octal form by following the caret with a \$, #, or & character, and the desired code:

^#ddd	decimal specification
^&ooo	octal specification
^\$hh	hexadecimal specification

Note that decimal and octal codes must be 3 digits and prefixed with 0 if it is 2 digit codes.

## Macro string tip

Use the Record toolbar macro function to define the required macro and then copy the macro string generated and insert it as Macro string. The generated string is found in Setting->Toolbar setup. Select the macro and then the Modify function found in the drop-down Action list.