GEORGIA SOFTWORKS

July 6, 2018

GSW ConnectBot Android Client for SSH/Telnet

GSW ConnectBot

Users Guide



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July 6, 2018

Georgia SoftWorks Public Square 17 Hwy 9 South, PO Box 729 Dawsonville Georgia 30534 Telephone +1 706.265.1018 * Fax +1 706.265.1020 <u>Visit Georgia SoftWorks web site</u>

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Overview

Thank you for purchasing the GSW ConnectBot.

GSW ConnectBot is a simple to use but a powerful Secure Shell (SSH) client for Android. GSW ConnectBot is a feature rich client that both system administrators and users will appreciate. It is well suited to the demands of industrial environments.

GSW ConnectBot is the most cryptographically secure, commercially supported SSH client for Android available.

Installation

The GSW ConnectBot is a standard Android Packet Kit (APK). Simply copy the APK to the device and execute. Once installed, configure the connections with the features desired. Please keep in mind that *device* settings may vary between Manufacturers and Android versions. GSW ConnectBot has been tested on multiple devices, and Android versions 4.4.2 through 7.0.

Following are instructions on how to install GSW ConnectBot on your device. Installation is a simple process. To summarize:

- Enable Application to be executed
- Copy APK to Device
- Run APK installation

In this example, we will be using a USB connection.

To begin, connect your device to your workstation via a USB cable. The device should appear in the Windows Explorer navigation pane.



Figure 1: Android device listed in Windows Explorer

Enable Application for Execution

Make sure that "Unknown Sources" is turned **ON** under "Security" menu in "Settings". This allows applications to be installed from outside the Google Play Store. The name of the "Security" menu may vary from device to device.



Figure 2: Enable Unknown sources

Copy APK to Device

Copy the GSW ConnectBot APK to the device using Windows Explorer, download or by whatever method you choose, preferably to the "Download" folder, as some device File Managers limit access to files at the root of storage. The name of the actual GSW ConnectBot APK is gsw_connectbot.apk. The example below shows a different filename.



Figure 3: APK on device

Install GSW ConnectBot APK

Tap the GSW ConnectBot APK shown in Figure 3, and the following is displayed:



Figure 4: Install screen

Next, tap the "INSTALL" button as shown above.



Installation continues and completes.

If you tap "DONE" in Figure 6, you will need to manually launch GSW ConnectBot in Administration mode to begin configuration. Tap "OPEN" to immediately begin configuration of GSW ConnectBot. The App will open into License mode by default, as described in the next section.

Launching GSW ConnectBot

Use the icon *with the gear* for configuration and administration. The icon *without the gear* is a restricted, lockable version for end users.



Figure 7: Admin and Work Modes

The GSW ConnectBot administration mode can license GSW ConnectBot, create and use connections. The Worker icon is for launching preconfigured connections created by the System Administrator. The end user can also be limited to running only GSW ConnectBot, using a process call "App Pinning", which we will discuss later in this manual.

Activating a protected product using a GSW provided Serial Number

 When the protected application is installed and launched, you will be taken to a Licensing dialog screen. Select the "Serial Number" radio button. Tap "Continue". You can also check your current licensing status by selecting the "Check License Info" radio button and tapping "Continue". A new install of GSW ConnectBot has a full featured 30 day trial period, after which the App will need to be licensed to function.

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Georgia SoftWorks Licen If you have a Georgia Sof your network, select the L option below. Otherwise, number. Select Check Lic licensing status.	<u>sing</u> tWorks Licens J se Georgia S select Serial I s ense Info to f	se Server installed on oftWorks License Server Number to apply a serial ind out the details of your
O Use Georgia SoftWo	orks License S	Server
Serial Number		
O Check License Info		
	CONTINUE	

Figure 8: Manual Activation

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- 2. On the following screen, press the "Create Product ID" button. The software will generate a "request.c2g" file and place it at the root of main storage. Recover this file and send it to registration@georgiasoftworks.com. You may need to move the file from the root of main storage to another folder to be able to recover it via USB for e-mailing from your PC.
- 3. You may also copy and paste the Product ID from this screen and e-mail it to GSW. Hold and press your finger on the Product ID, a Copy/Paste dialog will appear. Tap "Copy" to send the product ID to the Android clipboard, and then paste it into an e-mail to GSW. When GSW returns the manual serial number, use the same process to copy and paste it into the <Paste serial number here> field and tap apply.



Figure 9: Create Product ID

Figure 10: Manual Serial Number

4. If using the .c2g/.g2c process, when you receive the "serial.g2c" file from Georgia Softworks, use a USB connection to copy to the "Downloads" folder on your device.

-	Nê ᅙ 🕻 🔂 📑 1:01 PM
/storage/emulated	d/0/Download
Back to /	
📟 Back to	
serial.g2c	

Figure 11: Locate serial.g2c file

5. Click on the "Apply Serial Number from File" button in the application.



Figure 12: Apply Serial Number

6. Browse to the "Downloads" folder on the device where you saved the "serial.g2c" file and select it.

-	Nê 奈 🔂 📑 1:01 PM
/storage/emula	ited/0/Download
Back to /	
層 Back to	
serial.g2c	

Figure 13: Browse to serial.g2c

7. When the "serial.g2c" is applied, you will see the following: Click **OK** to launch your licensed application.



Figure 14: Serial Number Set

Activating a protected product using the GSW License Server

Installing the Georgia SoftWorks License Server.

1. Download the Georgia SoftWorks License Server executable. The License Server can be installed on any modern Windows OS. The License Server must reside on the same LAN as the device being licensed. Once licensed, the device is portable to other networks.

GeorgiaSoftWorksLicenseServer.exe

2. Double click the executable. You will see the initial setup dialog. Let it run until finished.



3. Select "Next" on the following dialogs, click finish when complete.



Figure 17: Welcome

Select Program Folder		×
	Setup will add program icons to the Program Folder listed belo You may type a new folder name, or select one from the existi Folders list. Click Next to continue.	w. ng
	Program Folders:	_
	GSWLicSvr	
	Existing Folders:	
	Administrative Tools Android Studio	^
	Far Manager 2 Gemalto Sentinel	
	Georgia SoftWorks Business Tunnel Georgia SoftWorks Customer Registration	
	Georgia SoftWorks UTS GoldMine	
	GSWLieSvr	*
	< Back Next > Cancel	

Figure 18: Install Location

Setup Complete	
	Setup has finished installing Georgia SoftWorks License Server on your computer. Use: Start Programs GSWLicSvr Registration
	Click Finish to complete Setup.
	< Back Finish

Figure 19: Setup Complete

Registering the Georgia Softworks License Server

1. From the Start Menu, select GSWLicSvr, Registration.

GSW Registration Tool Ver. 1.27.00.0010 - Steve-Desktop	
Customer information	Product information
Name: Steve	Name: GSW_LICS 99
Company: GSW	Version: 1.32 Zone: T2qMaWpV
Street Address 1:	Product ID:
Street Address2:	3CF4AF6F6B17DAA74E770328B1F403CC57D4C2171346
City:	1
State: Zip:	Registration information
Country:	Please enter your serial number in the window below
Phone:	
Fax:	D25EEAF8B71194EC089A5FE22BBC8D00349A632CEED8
Purchased From: GSW	Expiration date: Not set
Application software: GSW	Free updates until: Monday, November 26, 2018
	Parameter: 3
Save to file Print Hw Key Close	Register

- 2. Fill out Customer information and click "Save to file...".
- 3. Send this file to Georgia SoftWorks. For fastest response, use the <u>GSW Support Ticket System</u>. Open a registration support ticket and attach the Register.txt and state the number of requested activations. If you are unable to access the GSW Ticket System, you can send the register.txt to <u>registration@georgiasoftworks.com</u> with the number of requested activations.
- 4. Enter the Serial Number returned and click "Register".
- 5. Your License server will now dispense licenses for software, up to the number of requested activations.

Activating a protected product using the GSW License Server and a license pool

1. When the protected application (.APK) is installed and launched, you will be taken to a Licensing dialog screen. Select "Use Georgia SoftWorks License Server" radio button and press "Continue".



Figure 21: Register Using GSW License Server

- 2. On the following screen, click the "Find GSW License Server" button. The IP address and Port number should self-populate. If it does not, you can manually enter the IP address of the licensing server and use port 12574.
- 3. Click the "Get License" button. If there is a license available for distribution, the application will be licensed and the pool of available licenses will decrease by one. You may also use the "Release License" button to unregister the device and return the license to the pool to be used again.



Figure 22: Auto Locate GSW License Server

GSW ConnectBot Connections

The Hosts screen lists all the configured connections. When using System Admin icon you can add, delete, and modify configurations as well as initiate a connection. Unless noted otherwise, configuration description is by the System Administrator.

Multiple connections can be defined, each with a nickname and color-coded text for easy identification.

Additionally you can have multiple connections running simultaneously and navigate back and forth between them by horizontal swiping and by the selection of tabs.



Open GSW ConnectBot App on your Android device.

Figure 23: Creating a Host

Create new Host Connection Configuration

Tap the plus sign button in the lower right corner to start a new host configuration.

The following screen is displayed:

GSW ConnectBot Android SSH/Telnet Client

Georgia SoftWorks

P 🛛 🔿	♥ 🛱 🚺 🔹 🕺 🕅 🕏 🚄 37% 🚔 5:34 PM	Configuration F	Parameter and defaults are emboldened.
÷	Edit Host +	SAVE – Tap the	plus sign to save the configuration
	Protocol	Protocol: Options a	are ssh , telnet and local. Local gives access to the local Linux shell.
	username@hostname:port	Username@hostn	ame.port:
	↓ ✓	This is the usernam	e and hostname/ip address of the ssh host.
		Entered in the forr	nat <username>@<hostname></hostname></username>
.	Nickname	Nickname: Easy nar	me to associate with the username/hostname on the ssh host. This
-		is displayed on the	Hosts screen
@	Color category	Color category: This	s is the color for the text displayed in the Hosts screen.
	Font size (nt)	Font size does not	need to be set unless the columns and rows of the Window size are
π		set to zero	
	<u> </u>		
_T	Window size	Window size: Adjus	t window size to match your server's settings.
TI	Cols: 80 Rows: 25	Default 8	30 Cols 25 Rows.
		Use pubkey authen	tication:
0 7	Use pubkey authentication Use any unlocked key	Options	are: " Use any unlocked key ", "Do not use keys" and select one of
		the avail	able public keys
	DEL Key Delete		
<>	Encoding	DEL Key:	Options: Delete or Backspace
	UTF-8	Encoding	Options: UTF8
s:	Use SSH auth agent		
		Use SSH auth agent	:
	Compression		
	This may help with slower networks	Compression:	Options: enabled / disabled. May help with slower networks.
	Start shell session		
	Disable this preference to only use port T	Start Shell Session:	Default: enabled / disabled. Disable to only use port forwards.
	Stay connected		
¢	Try to reconnect to host if disconnected		
	Olass en dissenant	Stay connected:	Options: enabled / disabled.
\$ 5	Close immediately after remote disconnect		Try to reconnect to the host if disconnected.
	without prompting.	Close on disconned	t: Options: enabled / disabled .
	Post-login automation		Close immediately after a remote disconnect without
ı ۳	authenticated		prompting.
		Post-login automat	:ion : Commands to run on remote server once authenticated.
ı 	Answerback Determines terminal's response to ENQ query	AnswerBack:	Enter an Answerback if needed by your application.
	NOT_SET		

Figure 24: Configuring a Host connection

Host Connection Operations

Host Connections are displayed on the Hosts screen.

Each connection has a status Icon, the Nickname and connection duration.



Figure 25: Host Connection Screen Display

Please notice the icons, the color of the text for each host connection and the nicknames. Each connection is customizable so that you can quickly recognize the connection by the nickname, the text color and the status.



Icon

Status Description

Connected

Non-Connected

Abnormal Disconnect

The time the connection has been in that status is displayed under the nickname.

From this screen, you can perform a variety of operations on the connections.

Initiate Connection

Tap a host to initiate the connection

Host Connection Menu

To access to the Host Connection menu, use a "Long Press" (Touch and Hold) on the specific Host connection. The result of the Long Press is a menu is displayed with the following options.

- Disconnect
- Edit Host
- Edit port forward,
- Delete host

Disconnect

Tap to Disconnect from the host

Edit Host

Tap to modify the Host Connection settings. You save the changes by Tapping Save Host, in the upper right hand of the screen.

Edit Port Forward

This allows editing of the Host Connection Port Forward settings.

Delete Host Connection

Tap to delete the Host Connection.

Additional Settings

The 3 vertical dots allow access to the ADDITIONAL global GSW Connect Bot configuration settings.



Figure 26: Menu to access Global configuration

Figure 27: Accessing Settings

Additional settings are accessed by tapping the three vertical dots in the upper right hand corner of the app and selecting "Settings".

The available settings are shown in the screen shots below.

Most of these options are self-explanatory.



Figure 28: Settings



Figure 29: Settings 2



Figure 30: Settings 3

Using Answerback with the GSW SSH/Telnet Server

Answerback allows the mobile client to pass a text string (up to 20 characters) to the SSH/Telnet server when connecting.

The AnswerBack string is set in the GSW ConnectBot Host connection configuration. This is the only configuration required on the client.



Figure 31: Answerback Setting

An enhanced method of obtaining the Answerback is available when using the GSW SSH/Telnet Server (UTS). The application running on the GSW UTS accesses the answerback value using the server side environment variable gwtn answerback.

This does not use any screen locations and the display is not impacted as with many AnswerBack solutions. An environment variable is much easier to read than a screen location.

Following is an example of how to configure the GSW UTS to obtain the AnswerBack from the GSW ConnectBot.

The Server side configuration consists of a lightweight utility (answerback utility) and logon scripting (example below). When the GSW ConnectBot connects to the UTS, the logon script is executed and the answerback utility obtains the Answerback string from the GSW ConnectBot. It then inserts it in the environment variable gwtn_answerback for the application to access.

From the GSW UTS SSH/Telnet Server. –

- 1. Download and copy the gs_enq.exe, gs_enq64.exe files to a folder that the logon scripts can access. To download these utilities <u>*Click Here*</u>.
- 2. Set the user's home directory to point to a folder where they can write a temporary file.
- 3. Edit the users Logon Script (c_start.bat or k_start.bat) and add the lines to retrieve the Answerback.

Modify the Logon script of the User to the following, making sure to change any environmental variables to match the User connection being queried. In this example, we are querying for the Answerback of RFUser.

Answerback Example Configuration

```
::===== Start of Logon Script=======
@echo off
set gwtn color=1
set gwtn graphics=1
set gwtn term=1
set gwtn home dir=C:\GS UTS\scripts\LocalUsers\RFuser
 @if %gwtn gsclnt%==1 goto :GSW
@set GWTN ANSWERBACK=%GWTN CLIENT IP%
@c:\gs uts\gs enq.exe
@if errorlevel 1 goto :NOANSWERBACK
@set /P GWTN ANSWERBACK=<ab%gwtn agntpid%.txt</pre>
@del ab%gwtn agntpid%.txt
@:NOANSWERBACK
@:GSW
<Launch your Application here, using GWTN ANSWERBACK as a variable>
Example:
C:\hjs\adv\bin\telterm.exe 10.200.150.8 4700 %gwtn answerback%
:: ======= Answerback stored in GWTN ANSWERBACK.========
```

Connect the user to the server using GSW ConnectBot. The Answerback in the GSW ConnectBot configuration should be returned within the connection shell.

Note:

On x64 systems **gs_enq64.exe** must be used instead of **gs_enq.exe**. After this block is executed the variable GWTN_ANSWERBACK is going to be set. Of course, **c:\GS_UTS** must be substituted with your own path.

Client Lockdown

Client Lockdown limits a user to the specific application. This prevents the Worker from modifying the connection or accessing other applications.

Installation of GSW ConnectBot results in creation of two user icons. There is an Administrator icon and a Worker icon.

The Icon *without the gear* is for companies using the client in restricted production and or screen lockout mode.

Using the icon *with the gear* enters administrative mode. The intent is that the administrator will preconfigure hosts, public/private key etc.

The administrator will then use the Work mode icon and pin the app.



Figure 32: Two Modes of Connection

Lockdown (Pinning the app) on Android 7.0

You can limit a worker to the GSW ConnectBot by using Android screen pinning. The process varies slightly with different versions and devices.

To Pin (lockdown) GSW ConnectBot app, perform the following steps configuration:

Performed by administrator

- Create Hosts
- Enable "Pin Window"
- Enable "Ask for Pin before Unpinning"
- Pin the App

Create one or more hosts.

This is described in the section Create new Host Connection Configuration



Figure 33: Create Host(s)

Enable Pin Window.

Enable Pin Window allows the application to be "pinned" such that that it is the only application available to the Worker.

To enable Pin Window you navigate to Settings->Lock screen and security->other security settings

From your Android home screen, tap "Settings". On our device, the home screen and settings looks as shown in Figure 34

The settings screen opens as shown on the right in Figure 35



Tap on "Lock screen and security". The name of this setting may vary between Android devices.

The Lock Screen and Security screen contains "Other security settings"

Tap "Other security settings"

F .	🔃 🗟 📶 93% 🖿 10:33 AM		
	< LOCK SCREEN AND SECURI	ТҮ	Q
	Fingerprints		
	Samsung Pass Use biometric authentication to verify and securely.	your identity eas	sily
	Find My Mobile Locate and control your device remote Samsung account.	ely using your	
	Unknown sources Allow installation of apps from source the Play Store.	es other than	
	Private mode Off		
	Encrypt device Protect your device by encrypting its of	lata.	
	Other security settings Change other security settings, such a updates and credential storage.	as those for secu	irity
	LOOKING FOR SOMETHING ELS BACKUP AND RESTORE LOCATION	SE?	
Fi	gure 36: Other Security	Settings	

The Other Security Settings screen contains the "Pin Windows" configuration item.

In "Pin Windows" field, tap the switch icon to turn this feature on.

	🔃 🗟 📶 92% 🖿 10:33 AM
< OTHER SECURITY SETTINGS	
Display trusted CA certificates.	
User certificates View user certificates.	
Install from device storage Install certificates from storage.	
Clear credentials Remove all certificates.	
ADVANCED	
Trust agents Perform selected actions when trusted connected.	devices are
Pin windows ^{On}	
Usage data access View which applications can access yo history.	ur device's usage
Notification access View which apps can read your notifica	tions.
Do not disturb permission View which apps have permission to ch disturb settings.	nange the Do not

Figure 37: Pin Windows

The Pin windows option is now enabled.

Tap on the Pin windows field to display the "Ask for Pin before unpinning" option.

Enable "Ask for Pin before Unpinning"

Enabling "Asking for the Pin" requires the PIN for the device be entered to exit the application. If you don't enable "Ask for Pin before unpinning", the worker can exit the application simply by pressing common key sequences.

Select "Ask for PIN before unpinning".

F .	P.		🔊 🔋 🖊 86% 🖿	11:57 AM
	<	PIN WINDOWS		
	ON			
	Ask	for PIN before unpinning		
	Pin app may prev	a specific app on your device is pinned, calling, messaging r not be available. Access to o rented.	screen. While I, and other fun other apps will	an ctions be
	To p 1. ¹ 2. (3. 4. ¹ the	in an app to the screen: Turn on Pin windows. Open an app. Press the Recents key. Tap ① in the bottom right cor e app you want to keep on the	mer of the wind screen.	low of

Figure 38: Enable Ask for PIN before unpinning

Now Exit Settings

The last step is to Pin the screen.

Pin the Window

With GSW ConnectBot, Android Work App open, press the "Recents" button on your home screen.

Tap the "Pin" Icon in the bottom right corner of the GSW ConnectBot App Card.

Note: You may have to move the window up before the pin in the bottom right corner becomes visible.



Figure 39: Pinning/Unpinning an App, 7.0

Unpin the Window

To Unpin an App, press both the "Back" and "Recent" buttons simultaneously. Enter PIN to complete unpinning.

Lockdown (Pinning the app) on Android 6.0

Enable Screen Pinning:

Navigate to the Settings menu on your phone.

Scroll until you see the Security section and tap on that.



Figure 40: Security

In the Security menu, scroll to the bottom where you will find "Pin windows" and tap it.



Figure 41: Pin Windows

1. Enable screen pinning by tapping the toggle at the top right of the menu.



Figure 42: Toggle on Pinning

Enable "Ask for Pin before Unpinning"

If you have any type of lock screen security (PIN, pattern, etc), you can have it displayed in order to unpin the app by toggling that option.

 PIN WINDOWS ON Ask for PIN before unpinning Im a specific app on your device screen. While an app is pinned, calling, messaging, and other functions may not be available. Access to other apps will be prevented. To pin an app to the screen: 1. Turn on Pin windows. 2. Open an app. 3. Press the Recents key. 4. Tap Im in the bottom right corner of the window of the app you want to keep on the screen. 	F .4	P	🔊 🗊 📶 86% 🗎 11:57 AM
 ON Ask for PIN before unpinning Pin a specific app on your device screen. While an app is pinned, calling, messaging, and other functions may not be available. Access to other apps will be prevented. To pin an app to the screen: Turn on Pin windows. Open an app. Press the Recents key. Tap ● in the bottom right corner of the window of the app you want to keep on the screen. 		< PIN WINDOWS	
 Ask for PIN before unpinning Pin a specific app on your device screen. While an app is pinned, calling, messaging, and other functions may not be available. Access to other apps will be prevented. To pin an app to the screen: Turn on Pin windows. Open an app. Press the Recents key. Tag		ON	
 Pin a specific app on your device screen. While an app is pinned, calling, messaging, and other functions may not be available. Access to other apps will be prevented. To pin an app to the screen: Turn on Pin windows. Open an app. Press the Recents key. Tap ● in the bottom right corner of the window of the app you want to keep on the screen. 		Ask for PIN before unpinning	
 To pin an app to the screen: 1. Turn on Pin windows. 2. Open an app. 3. Press the Recents key. 4. Tap () in the bottom right corner of the window of the app you want to keep on the screen. 		Pin a specific app on your device app is pinned, calling, messaging may not be available. Access to o prevented.	screen. While an g, and other functions other apps will be
		To pin an app to the screen: 1. Turn on Pin windows. 2. Open an app. 3. Press the Recents key. 4. Tap (in the bottom right cord the app you want to keep on the	mer of the window of e screen.

Figure 43: Lock Screen Security

Pin the Window

With GSW ConnectBot, Android Work App open, press the "Recent" button on your home screen.

Tap the "Pin" Icon in the bottom right corner of the GSW ConnectBot App Card.

Note: You may have to move the window up before the pint in the bottom right corner becomes visible.



Figure 44: Pinning/Unpinning an App 6.0

UnPin the Window

To Unpin an App, press the "Back" and "Recent" buttons simultaneously.

Enter PIN to complete unpinning.

To maintain security of the device, only the Administrator should have the PIN, otherwise the end user would have full access to the device and file system.

Admin mode vs Work mode

Figure 45 shows the GSW ConnectBot screen in Administrator Mode. Notice the full menu options available.



Figure 46 shows the GSW ConnectBot screen in Work mode. Notice the menu is restricted to "Sort by color". No administrative functions are enabled in Work Mode.

SSH Configuration

GSW ConnectBot is the most secure SSH Client available for Android.

The GSW ConnectBot is using the current SSH algorithms recognized as secure to ensure you have the best protection available. Algorithms that are not deemed safe are not used.

Configure a Host Connection Example 1

SSH with Password Authentication

Below we are going to show you how to configure the GSW ConnectBot client to make SSH connections using Password Authentication.

Open GSW ConnectBot App on your Android device.

Tap the blue plus sign button in the lower right corner to start a new host configuration.



Figure 47: Creating a Host

A new Host Connection Configuration screen is displayed. SSH is the default protocol, so do not change. We need to specify the username@hostname, or

username@<IP Address>. When the text field is tapped, the soft keyboard opens.



Figure 48: Tap text field and soft keyboard opens

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Configure these options to get a working connection:

- 1. Enter <user>@<IP address> and
- 2. Choose a nickname: SAP Server as shown below.
- 3. Tap "Use pubkey authentication". Select "Do not use keys".
 - You may also want to modify other items if necessary –
 - Select the Color of the text used on this Host Connection when displayed on the Hosts screen.
 - The Font size does not need to be set unless the column and rows of the Window Size are set to zero.
 - Adjust Window size to match your server's settings.
 - It is good to confirm:
 - o "Start shell session" is on.
 - "Stay connected" is on, to keep trying to reconnect if disconnected.
 - Choose whether to close the session on disconnect.



Save host connection configuraiton

Tap the plus sign "+" in the upper right to save the connection.

Connect to the new configured connection

Tap on the connection to connect to your Georgia Softworks Universal Terminal Server.

Configure a Host Connection Example 2

SSH with Public/Private Key Authentication

Public/Private keys are an extremely secure and convenient method of logging on to the host. The following are instructions on setting up an SSH key pair for GSW ConnectBot This example is the same as Example 1, with some configurations difference. Here are the modified items for the SSH Public/Private Key Authentication.

You can configure these options to get a working connection.

- 1. Enter <user>@<IP address> and
- 2. Enter the nickname SAP Server as shown below.
- 3. Tap "Use pubkey authentication". Select "Use any unlocked keys".
- 4. Enable Use SSH auth agent

In this case, leave "Use pubkey authentication" set to the default which is "Use pubkey authentication".

Tap the "plus sign" in the upper right corner to save the connection.



Figure 50: Saving the Connection

Using a Public/Private key pair

Configuring a public/private key pair consist of the following steps.

- Enter the configurable parameters for the Public/Private Keys
- Generate (using randomness)
- Unlock the Key
- Transfer the public key to the SSH server
- Install the public key on the SSH Server

Enter public/private key parameters

To enter the public key parameters , navigate to Manage Public Keys screen.

To navigate to the Manage Public Keys screen, tap on the three vertical dots in the upper right hand corner and the Hosts Menu appears.



The first time a key is added, the Generate screen opens. If you already have key(s) on the device then the Pubkeys screen (ex: *Figure 53*) will open with a list of available keys. If keys are present, tap on the "+" plus sign to add a new key.

The Generate screen allows you to enter the key parameters such key type, number of bits, etc

- Enter a nickname for the key pair.
- Select the type of key you would like to generate. RSA is the default.
- Select the encryption strength. Anything less than 2048 is not recommended.
- Enter a password for you key pair [optional, but recommended].
- Check Load key on start.

← Generate						
Confirm before use						
GENERATE						

Figure 53: Create SSH Key Pair

Generate the Key with Randomness

Tap "Generate"



Generate randomness by moving your finger around the field as shown in *Figure 54*.

As shown in *Figure 55*, as you move your finger on the field, the percentage of randomness increases. Once randomness reaches 100%, the key pair is created

The Pubkeys screen is opened as shown below:

Unlock Key

Tap the key to unlock it. This makes it available for connections to use. If you set a password, you will be asked to enter it to unlock.



Figure 56: Unlocking a Key Pair

Transfer the key to the SSH Server

Transferring the Key to the SSH server is easy using common techniques.

On the PubKeys screen:

- 1. Press and hold the key to access the options menu.
- 2. Select "Load key on start" (if it is not checked)
- 3. Tap "Copy public key". This will copy the public key to your device's clipboard.
- 4. Open an e-mail client on your device, create an e-mail and paste the public key into the mail.
- 5. E-mail the key to an account that you have access to from your Georgia SoftWorks Universal Terminal Server.

Now, we will configure the Host (public) key on the GSW server.



Figure 57: Copy Public Key

Configuring the Host (Public) key on a GSW UTS SSH Server

On the Georgia Softworks UTS server, go to Start > All Programs > Georgia Softworks UTS > Certificate Mapping Tool for GSW SSH Shield.

- 1. Copy the public key from the e-mail that you sent in the previous step.
- 2. Expand Public Key Mapping, and select 1-to-1. Next click Add.
- 3. Click Enable this mapping and paste the clip board data into the Public key area. Fill out the rest of the fields below.

 Public Key Mappings I-to-1 Certificate Mappings Certificate validation 	al public key is mapped into ccount, but a separate map	a specific Windows account. You can choose to ping entry must exist for each.		
	Enabled	Mapping Name	Key Type	Windows Account
	Yes Yes	Client_Test SSO	ssh-rsa ssh-rsa	gsw∖steve GSW∖Steve
	Edit Map	Add	Delete	OK Cancel Anniu

Figure 58: Certificate Mapping Tool

4. Click "Enable this mapping" and paste the public key you created using GSW ConnectBot into the Public key area. Fill out the rest of the fields.

Enable this mapping	
count mapping	
Please paste your public key here: Make sure you paste only the encoded part or alternat OpenSSH publick key file (files like id_rsa.pub or id_dsa	iively, you can paste here complete contents of an .pub).
AAAAB3NzaC1yc2EAAAAB3QAAAQEAqqX23vaw7ufsi zIZMeEa0IIeaNZxwvmlwHokVzY94kvGkMpHcTqUUVAb UZh60XI4g1N+rGag/L/KMQ2ZydQ+eI7/BLq+Fia45k+, iSic2ayIC4bgSEEvlz06dGLTldjzDQ01JiH15REyia3Nmfi tXctAWx+aSZo5VIj3+k/ByFpzQiwpSiLuXEcn+eidD17or Vuq525YEsLkR6XPvoRxJaHzWRQH0911VhJBRZ5Els+	RG2C2RocBfheennpjCLlssgn kifEvgVDthvrHJWiUzN+7 /fcGZZmDRjHf+rpROpS72 SdRaAMHLemutYypkV cw2Ely1oqbVjNcqePoo DezmGhCQ==
	Key Type: ssh-rsa
When this public key the user can automa	Key Type: ssh-rsa is presented by a SSH2 dient and authenticated, stically be logged in as a specific Windows user.
When this public key the user can automa Map Name:	Key Type: ssh-rsa r is presented by a SSH2 client and authenticated, stically be logged in as a specific Windows user.
When this public key the user can automa Map Name: User:	Key Type: ssh-rsa r is presented by a SSH2 client and authenticated, stically be logged in as a specific Windows user. RFUser Mapping RFUser 1
When this public key the user can automa Map Name: User: Domain:	Key Type: ssh-rsa r is presented by a SSH2 client and authenticated, atically be logged in as a specific Windows user. RFUser Mapping RFUser 1 Domain
When this public key the user can automa Map Name: User: Domain: Password:	Key Type: ssh-rsa is presented by a SSH2 client and authenticated, atically be logged in as a specific Windows user. RFUser Mapping RFUser 1 Domain ********

Figure 59: Installing Public Key

5. Click OK, and click Apply. You should now see the mapping you created.

Public Key Mappings	🚫 1-to-1			
E☆ Certificate Mappings E☆ Certificate validation	Edit one to o map multiple	ne mappings. Each individu public keys into the same a	al public key is mapped into ccount, but a separate map;	a specific Windows account. You can choose to ping entry must exist for each.
	Enabled	Mapping Name	Кеу Туре	Windows Account
	Yes Yes Yes	Client_Test RFUser Mapping SSO	ssh-rsa ssh-rsa ssh-rsa	gsw∖steve GSW\RFUser GSW∖Steve
	Edit Map.	Add	Delete	

Figure 60: Key Installed

6. The changes will not take effect until the Georgia SoftWorks SSH

Shield service is restarted. Click **YES** to restart SSH (all current connections will be dropped) or **NO**

if you intend to restart later.



Figure 61: Restart SSH Service

Once the UTS server has restarted, you may test the GSW ConnectBot SSH connection.

Telnet Configuration

Below we are going to show you how to configure the GSW ConnectBot client to make Telnet connections using Password Authentication.

Open GSW ConnectBot App on your Android device.

Configure a Telnet Host Connection

Tap the blue plus sign button in the lower right corner to start a new host configuration.



Figure 62: Creating a Host

A new Host Connection Configuration screen is displayed (see below).

SSH is the default protocol, Tap protocol and select Telnet.

PP		N 🔋 📶 80% i	1:03 PM
÷	Edit Host		+
⊒	Protocol ssh		
ssh			~
telnet			
local			
æ	Color category		
ਜ	Font size (pt)		10
π	Window size Cols: R 80	^{ows:} 25	
01	Use pubkey authe Use any unlocked k	entication ^{ey}	
	DEL Key Delete		

Figure 63: Defining a Telnet Host

GSW ConnectBot Android SSH/Telnet Client

Georgia SoftWorks

Configure these options to get a working connection.

 Tap the down arrow next to the "hostname:port" field Enter 192.168.1.232

If you are using an alternate port for Telnet, you specify it here (ex: 192.168.1.232:567)

Otherwise leave it as the default Telnet port, 23.

2. Choose a nickname: Shipping Dock.

You may also want to modify other items if necessary -

Select the Color of the text used on this Host Connection when displayed on the Hosts screen.

The Font size does not need to be set unless the column and rows of the Window Size are set to zero.

Adjust Window size to match your server's settings.

Telnet will not use public/private keys. The "Use pubkey authentication" field may be ignored.

Tap the DEL Key to specify the key use to send a "delete" message. Choices are "Delete" and "Backspace".

Continued on next page



Figure 64: Enter Username, Nickname, etc.

GSW ConnectBot Android SSH/Telnet Client

Choose your encoding, UTF8 is the default.

You may ignore "Use SSH auth agent", as this is a Telnet connection.

Compression not used with Telnet.

Make sure "Start shell session" is on.

Make sure "Stay connected" is on, to keep trying to reconnect, if disconnected

Choose whether to close the session on disconnect.

Enter any Post-login commands as required, commands in user's logon script is a better option.



Figure 65: Connection Settings



Figure 66: Saving the Connection

Enter an Answerback if required by your application.

Additional settings can be found by tapping the three vertical dots in the upper right hand corner of the app and selecting "Settings".





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Camera shortcut Select which shortcut to trigger when the camera button is pushed Bumpy arrows Vibrate when sending arrow keys; useful for laggy connections

Figure 70: Settings 3

Save host connection configuraiton

Tap the plus sign "+" in the upper right to save the connection.

Connect to the new configured connection

Tap on the connection to connect to your Georgia Softworks Universal Terminal Server

Technical Support

When you have a question, please not hesitate to contact using the preferred support method – the GSW Support Ticket system.

<u>Georgia SoftWorks ticket system</u> (http://www.georgiasoftworks.com/support_ost/index.php)

You may also want to visit our forums, they are monitored by our technical support team.

Visit the <u>GSW Forums</u>

If you are unable to use our ticket system or forums, below is our telephone number.

Call +1 706.265.1018 . EST, M-F 9:00 a.m. to 5:00 p.m. and have your Product ID ready