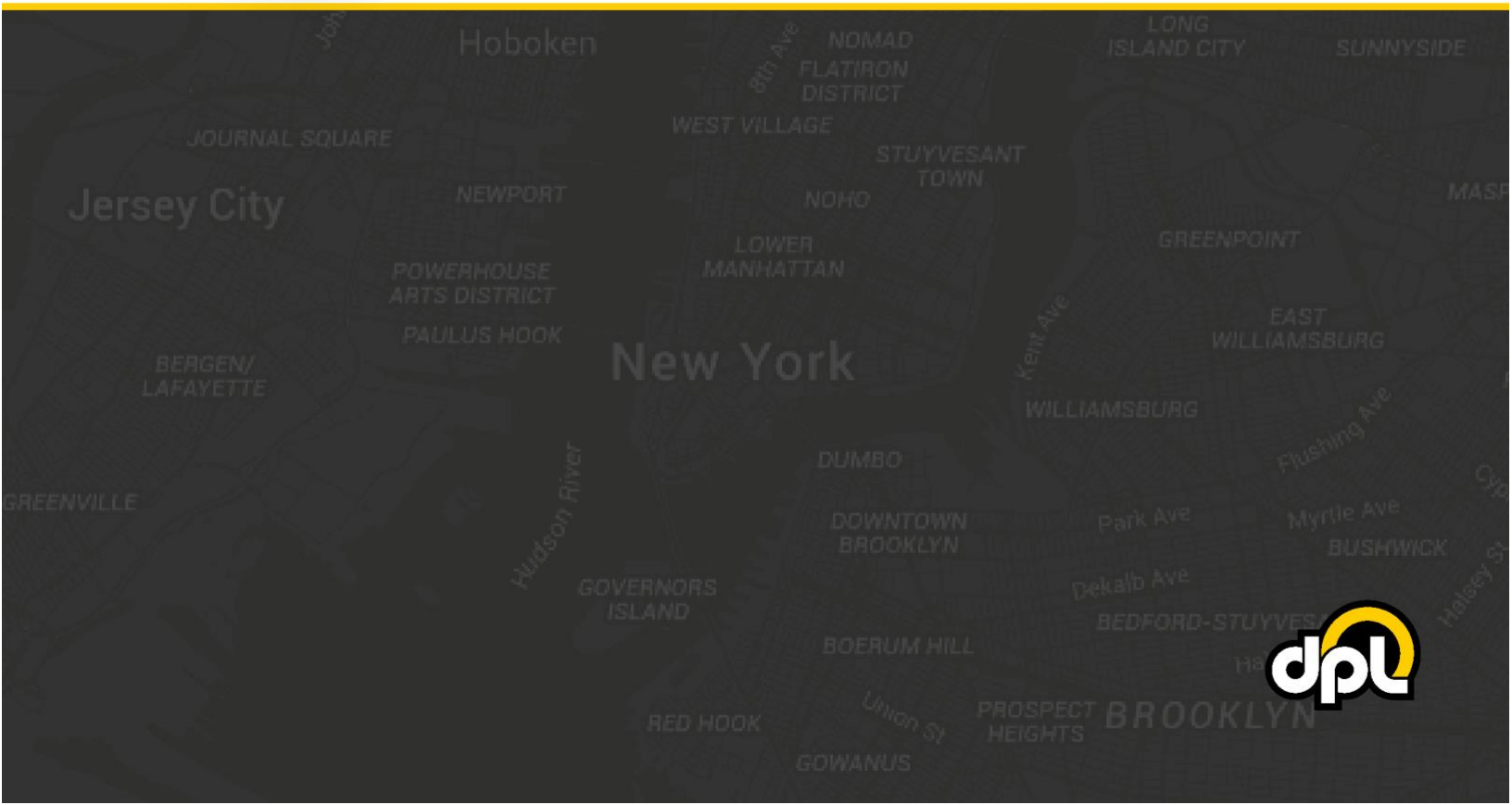
Hyosung SSL/TLS Configuration Guide

Proper SSL/TLS Setup for your Hyosung ATM



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Purpose

This guide will instruct you how to properly configure SSL/TLS on your Hyosung brand ATM, this guide is based on the Hyosung MoneyMax MX2600SE – the required steps for your model may vary. The document will take you through:

- Installing the DPL **rootcert.pem** file
- Setting up address-based host setup
- Enabling certificate and hostname verification
- Enabling SSL/TLS

By the end of the document you will have a securely connected ATM that should be resilient to Man-in-the-Middle (MITM) attacks involving external tampering of the Ethernet or modem.

Prerequisites

In order to successfully complete the steps that follow you will need:

- The DPL **rootcert.pem** or a **rootcert.pem** provided by your payment processor
- The hostname and port of your payment processor's SSL enabled ATM host application
- A working internet connection with which to test your ATM

Examples of the required information will be provided in the steps below.

Steps

1. ATM TCP/IP Setup

Before we begin setting up SSL/TLS we will need to ensure that we are on a TCP/IP ATM with either a working DHCP or static IP setup for internet connectivity.

NOTE: DHCP will enable dynamic allocation of the IP address from the router or modem that the ATM is plugged into. This is preferred as it means changes to the ATM are not required if changes are made to the router or modem. Static IP can be more stable for some older units but requires manual ATM reconfiguration if the router or modem are updated to new addresses (or many other network topology changes).

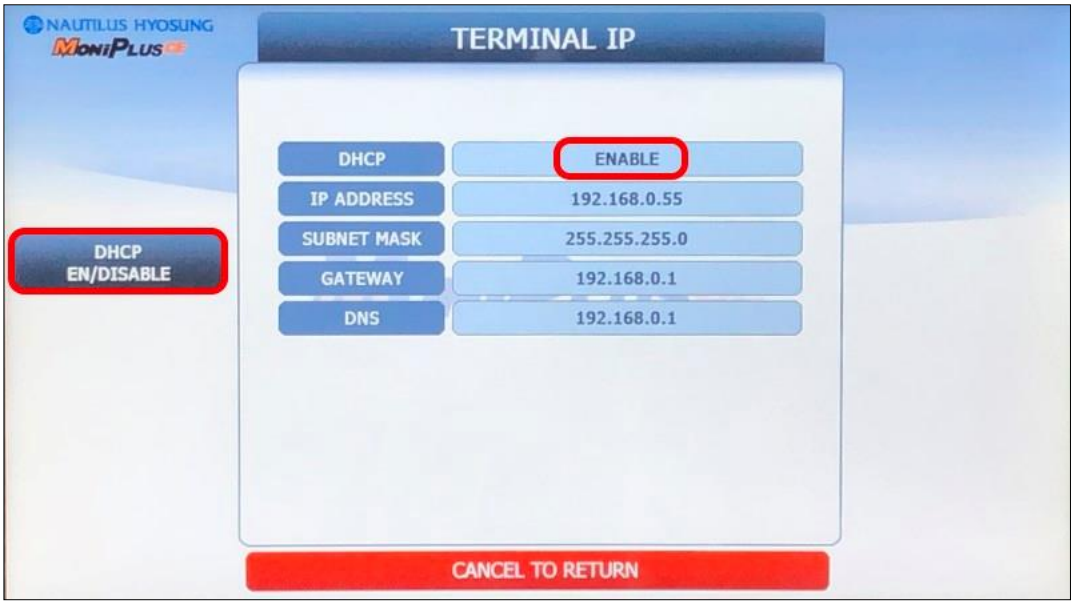
a) Use the ATM Operator Menu to navigate to the communication screen using the path listed below.

ATM Operator Menu > Customer Setup > Select Processor > Communication

NOTE: In order to use SSL/TLS the ATM will **need** to be capable of TCP/IP communication.

b) Enable either DHCP (preferred for newer installations) or a static IP (using information provided by the installation site or the Hercules modem being used) using the **DHCP En/Disable** button (and other buttons if using static).

ATM Operator Menu > System Setup > Terminal IP



c) Once your information has been input you press the **Cancel** key to save the changes.

NOTE: If you have switched from Static to DHCP or vice versa, you may need to reboot the ATM now or after completing the remaining steps. See how to reboot your ATM under "**Testing SSL**" below.

2. Enabling SSL/TLS Properly

In this section we will enable TLS 1.2 to secure the ATM against man-in-the-middle attacks on the Ethernet line and enable certificate verification to make sure the ATM is verifying the certificate chain.

a) Open the TCP/IP Type screen using the path seen below, then match up the information to the image using the highlighted buttons.

ATM Operator Menu > Customer Setup > Select Processor > TCP/IP Type

NOTE: The **Type** field will depend on your specific payment processor's requirements for Visa Framed or Standard, consult with them for the correct type.

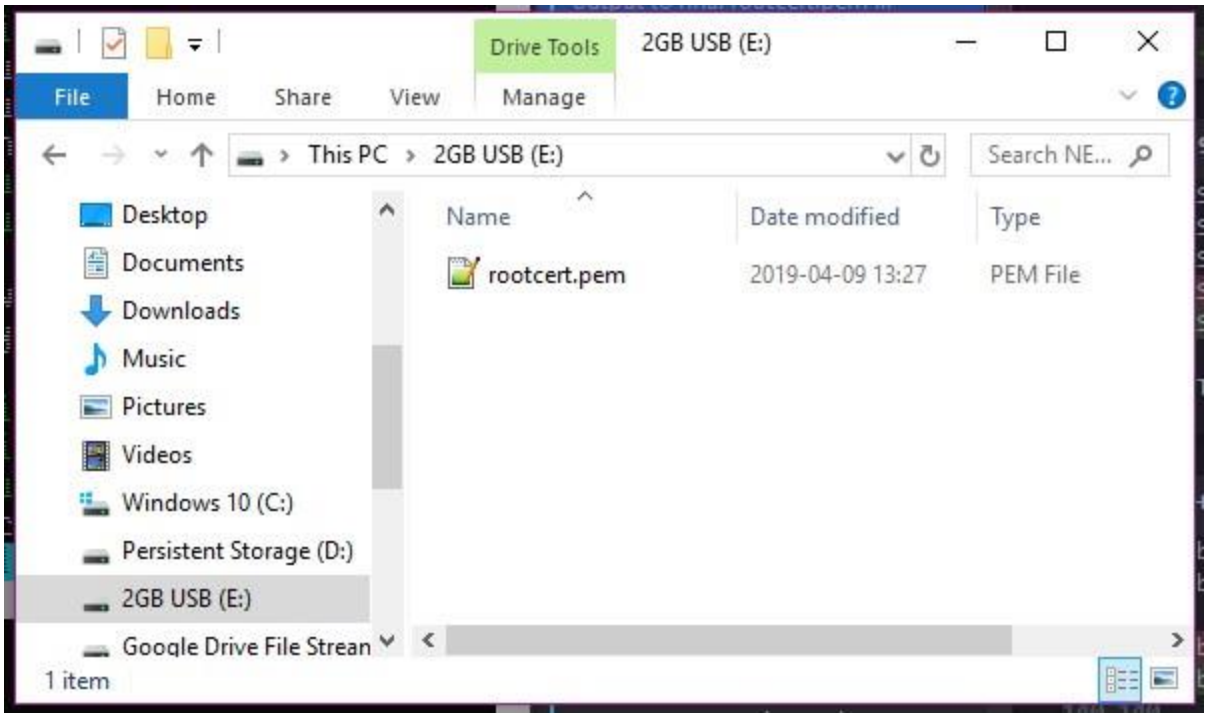
3. Installation of Root Certificate Files (rootcert.pem)

The **rootcert.pem** file is used to supplement the list of certificates already installed on your Hyosung ATM. The supplemental certificates are trusted chains used by payment processors that are not always preinstalled on ATMs. These will allow validation to be enabled on the ATM for enhanced protection against logical attacks.

a) Download the DPL **rootcert.pem** file (or the certificate chain indicated by your payment processor) and install it on a USB drive or SD card that is **2GB or less in size.** It should appear as depicted below.

NOTE: The size limitation is a REQUIREMENT for Hyosung devices, they can have trouble accessing drives of larger size. **WARNING:** This is important, if you don't have one go buy a 2GB drive.

Adding Rootcert.pem to Root of USB Drive/SD Card



b) Plug the USB drive (or SD card) into the appropriate port on your Hyosung's control board (the green USB drive in our example). The Hyosung MoneyMax MX2600SE ports are as seen below. USB is on the right when viewing the ATM from behind.

Hyosung MoneyMax MX2600SE USB Port/SD Card Slot

c) To install the new **rootcert.pem** navigate to the **TCP/IP Type** screen using the path listed below and press the **Download Cert. From USB** button.

NOTE: If you encounter an error at this stage it likely means either you misnamed the **rootcert.pem** file or your USB drive / SD card are not 2GB or less and FAT formatted (see previous steps).

ATM Operator Menu > Customer Setup > Select Processor > TCP/IP Type

Once this is complete you should see an Operation Success displayed on screen.

4. SSL Host Configuration

Now we will configure the host addresses to point to the SSL enabled payment processor. Configure the address fields to match the information from your payment processor, we will use **atm.columbusdata.net** for our address field and **6965** for our port field.

a) **Enable URL** with the button on the left. Then configure the settings with the data listed above using the buttons on the right.

ATM Operator Menu > Host Setup > Host Address

5. Testing SSL

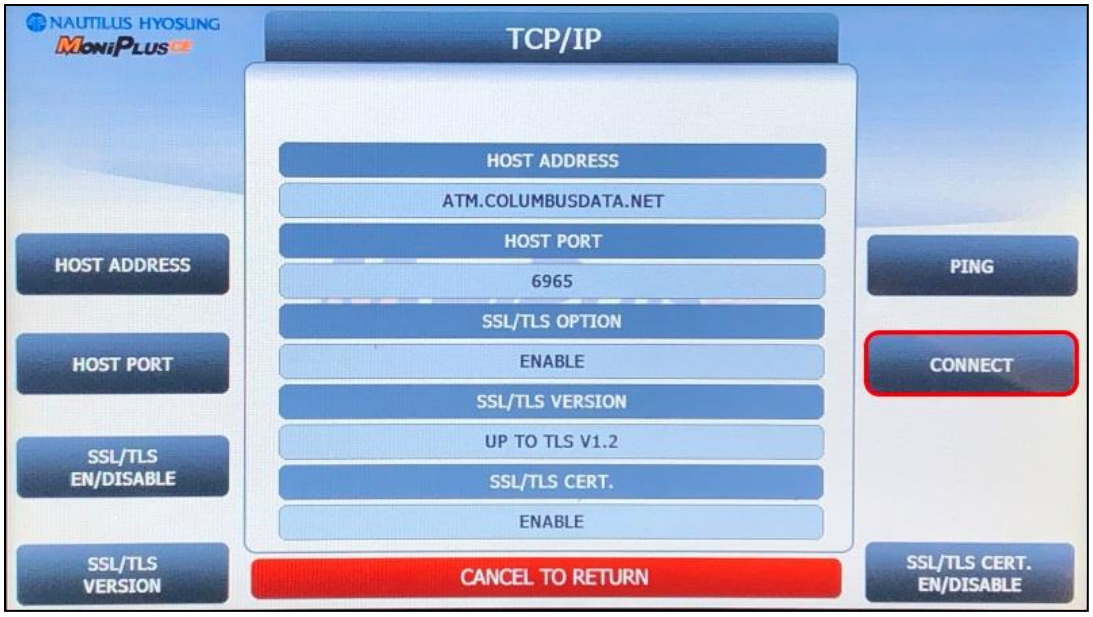
In this final section there are a couple options we can use to test that SSL is configured properly on your ATM:

- a dummy transaction could be completed on the ATM,
- or the **Connect** button on the **TCP/IP** screen of the **Diagnostics** will test the connection.

For the purposes of this document the **Connect** option of the **Diagnostics** mode will be used:

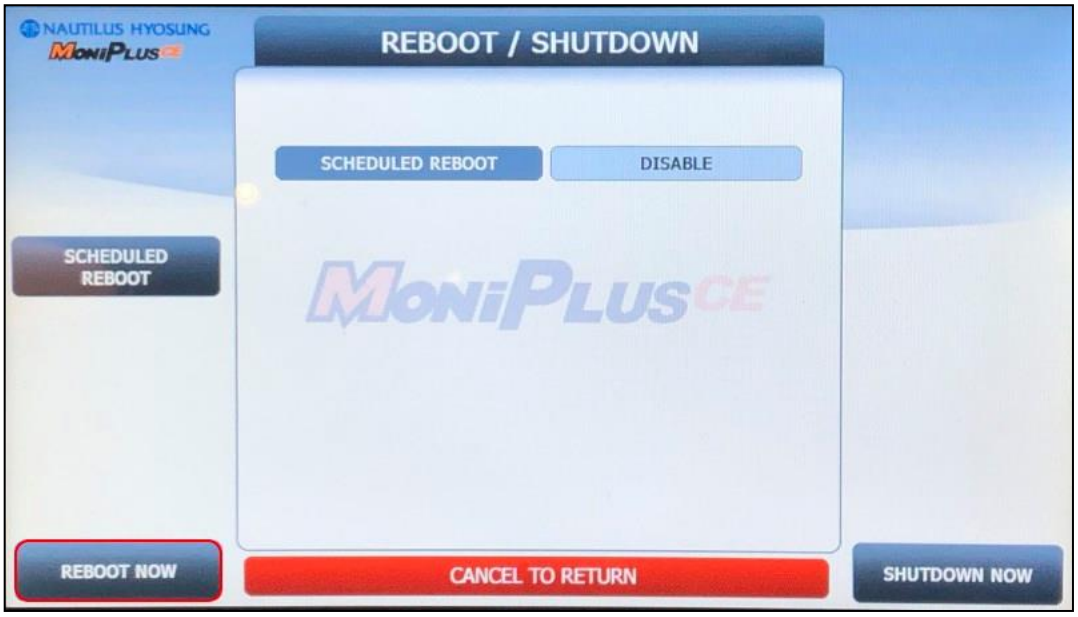
a) Navigate to the **TCP/IP** screen using the path listed below and press the **Connect** button. If everything is configured correctly a success message will be displayed. Ensure all the fields match the example below.

ATM Operator Menu > Diagnostics > Yes > TCP/IP



NOTE: If you encounter any issues use the **Reboot Now** button on the **Reboot / Shutdown** screen as seen below to reboot the ATM to ensure the TCP/IP information has taken effect.

ATM Operator Menu > System Setup > System Control > Reboot/Shutdown



If there is a failure at this point, go back and double check all the configuration options from the previous steps. If you see **Operation Success** then congratulations, the ATM is now configured correctly.

Conclusion

After completing all the above steps your Hyosung ATM will be set to use SSL (TLS 1.2) on all transactions with the payment processor. This ensures that no 3rd party can listen on the line and get any usable data, terminate the SSL connection and proxy it out (MITM attack), or any other nefarious logical attack against outgoing data from your ATMs.