

# EasyLogging Virtual COM ports to SiteManager Serial ports



This guide assumes activation of the **EasyLogging/Usage Statistics** feature, which is a billable option applicable to GateManager version 7.0 or later.

This guide will be applicable for users on hosted GateManagers and for customers having their own GateManager

**Version: 1.2, May 2017**



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## Version history

- 1.2 First public version

## 1. Introduction

As leased copper lines are being obsoleted and local telephone exchanges are decommissioned in several countries, a demand for being able to use the internet as replacement for leased lines has materialized. Several customers have legacy programs that are tied to Serial Ports and Analog modems using leased lines.

Unfortunately, these legacy programs are missing source code and the skills to maintain them, so no changes can be done to them.

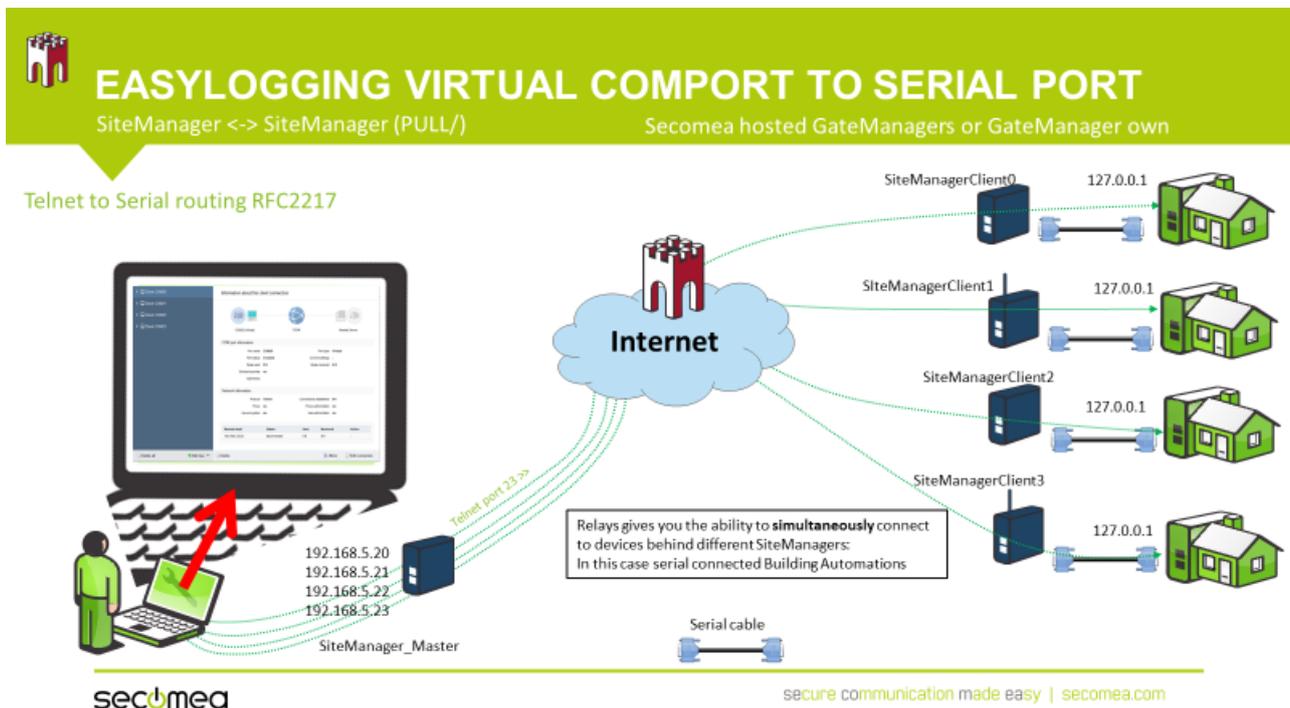
This document shows an example of how to replace the physical serial ports and analog modems with a transparent EasyLogging solution.

For illustration of the concept in this document, the 3<sup>rd</sup> party Software from Eltima has been used. For any support queries and other issues, you must contact Eltima support. Other solutions may work, but have not been verified by Secomea.

## 2. Usage scenario and Prerequisites

You need to have ordered the EasyLogging option for your hosted Domain or your own GateManager server.

To test this setup, you need minimum two SiteManagers where the EasyLog Pull Master must be a HW model for further details on EasyLogging see [EasyLogging Deployment Guide](#).



In this scenario, the test was setup using four Secomea HW SiteManagers and three Modems acting as reference Serial devices, where connected to the Serial ports of the SiteManagers and associated with the EasyLog Clients

Software used: **Serial to Ethernet Connector from Eltima trial mode**

### 3. Installation and configuration

The installation consists of installing the serial over Ethernet from Eltima in this case the 14-day trial mode version of the software was used.

Configuration of the 3 x EasyLog Clients and configuration of 1 x EasyLog Pull Master

#### 3.1. Installation of software

Download and install software from <https://www.eltima.com/products/serial-over-ethernet/>

Install the application.

Choose "create client "

Use the following settings to create 3 clients named COM20, COM21 and COM22 in the Eltima Application.

##### Settings for Clients:

COM20  
COM21  
COM22

##### Client Connection name:

Client COM20  
Client COM21  
Client COM22

The screenshot shows the 'Edit Client connection "Client COM20"' window. At the top, there is a checkbox for 'Strict validate emulation'. Below that is the 'Remote servers' section with 'Save list', 'Load list', and 'Reset list' buttons. A table for adding servers is visible with columns for 'Remote host name' (192.168.5.20) and 'Port' (23). An 'Add server' button is below the table. The 'Advanced settings' section is expanded, showing 'Connection preferences' and 'General connection settings'. Under 'General connection settings', there are two checked options: 'Connect to remote end only when local virtual port is open' and 'On error retry to establish connection every 1000 msec'. The 'Network protocol settings' section has two radio buttons: 'Use raw data transmission protocol' (unselected) and 'Use Telnet protocol (RFC 2217)' (selected). At the bottom, there is a 'Default port settings' section.

##### Remote servers:

For Client COM20 use:	Remote host name: 192.168.5.20	Port 23
For Client COM21 use:	Remote host name: 192.168.5.21	Port 23
For Client COM22 use:	Remote host name: 192.168.5.22	Port 23

##### Advanced settings:

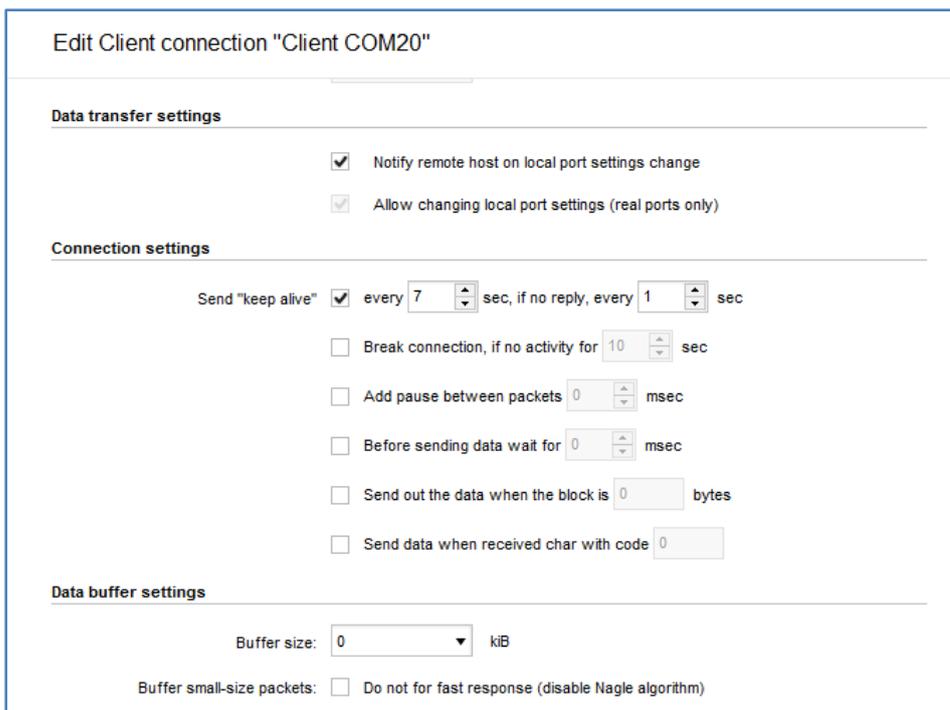
Enable: Connect to remote end only when local virtual port is open  
Enable: On error retry to establish connection every 1000 msec

##### Network protocol settings:

Enable: Use Telnet protocol (RFC2217)

**Data Transfer settings:**

Enable: "Notify remote host on local port settings change"



**Connection settings:**

Send "keep alive" every 7 sec, if no reply every 1 sec

**Data Buffer settings:**

Buffer size: 0 kB



**Signal Lines:** Default settings

**Proxy/ Security settings:** Default settings

In the Eltima final setup notice that connections are listed as disconnected as the setup is not complete and the local COM ports are not opened.

## 3.2. Configure the Serial Ports

We now configure the serial port on each of the 3 EasyLog Clients. The settings are found in the SiteManager menu **System -> Serial**

Make sure the SiteManager is connected to the serial device using an appropriate serial cable

Ensure that Protocol is set to **Telnet (RFC2217)** and Interface is set to **Any**.

In this setup, we are using the standard port for Telnet which is **23**

Make sure that the serial port settings match the connected modem.

In this case, we use settings 9600, 8, 1, N

**SETUP** • System GateManager VPN Routing Maintenance Status Log • **HELP**  
System Info • General Time • DEV1 • UPLINK UPLINK2 • Serial I/O

### Networked Serial Port

Protocol:	<input type="text" value="Telnet (RFC2217)"/>
Serial Driver:	<input type="text" value="Standard"/>
Serial Driver Frame Size:	<input type="text" value="0"/> bytes
Serial Driver Frame Timeout:	<input type="text" value="0"/> milli-secs
Add Latency:	<input type="text" value="0"/> milli-secs
Send Break on Connect:	<input type="text" value="0"/> milli-secs
Send Break on Disconnect:	<input type="text" value="0"/> milli-secs
Port Number:	<input type="text" value="23"/>
Interface:	<input type="text" value="Any"/>
Inactivity Timeout:	<input type="text" value="0"/> seconds
Baud Rate:	<input type="text" value="9600"/>
Parity:	<input type="text" value="None"/>
Data Bits:	<input type="text" value="8"/>
Stop Bits:	<input type="text" value="1"/>
Flow Control:	<input type="text" value="None"/>
Escape Character:	<input type="text" value="^K"/>
Monitor Buffer Size:	<input type="text" value="0"/> Kbytes
AT Command{Response}:	<input type="text"/>

### 3.3. Create the EasyLog Client Agents on the Client SiteManagers

Notice that the EasyLog client has been created with the name "Building1" and that the IP address is identical to the loopback address, so its pointing to the SiteManager itself meaning also the local serial port.

The screenshot shows the SiteManager web interface. The top navigation bar includes 'SETUP', 'System', 'GateManager', 'VPN', 'Routing', 'Maintenance', 'Status', 'Log', and 'HELP'. Below this is a sub-menu with 'About' and 'Troubleshoot'. The main heading is 'GateManager Agents - Setup Assistant'. The page contains several paragraphs of instructions and two buttons: 'Help' and 'Continue Setup >>'. Below the instructions, it says 'Using 1 of 2 agents'. A table with columns 'Status', 'Disable', 'S/N', 'Device Name', 'Device Type', 'Device IP & Parameters', 'EasyLog', and 'Comment' is shown. The table has one row with the following data: Status: N/C, Disable: , S/N: #00, Device Name: Building1, Device Type: GENERIC (dropdown), Device IP & Parameters: 127.0.0.1, EasyLog: , Comment: . Below the table are buttons for 'Refresh', 'Save', 'New', 'Search', and 'SNMP >>'. There are also icons for a printer and a trash can next to the EasyLog checkbox.

This completes the setup of the EasyLog Client on a SiteManager.

Notice that the Client has the Fault Status **N/C**, meaning the device is up, but the EasyLog Client is *Not Connected* to an EasyLog Master yet.

This is expected as we still need to configure and associate the client to the EasyLog Master on the GateManager.

After replicating the setup on the two other clients proceed to the next step

### 3.4. Configure the EasyLog Master Pull Agent on the Master SiteManager

Create a EasyLog Master (Pull) agent.

The screenshot shows the SiteManager web interface. The top navigation bar includes 'SETUP', 'System', 'GateManager', 'VPN', 'Routing', 'Maintenance', 'Status', 'Log', and 'HELP'. Below this is a sub-menu with 'GateManager Info', 'General', 'Agents', 'Alerts', 'Device Relays', 'Server Relays', 'Web Proxy', and 'Status'. The main heading is 'GateManager Agents'. The page contains the text 'Using 1 of 25 agents'. A table with columns 'Status', 'Disable', 'S/N', 'Device Name', 'Device Type', 'Device IP & Parameters', 'EasyLog', and 'Comment' is shown. The table has one row with the following data: Status: ERROR, Disable: , S/N: #00, Device Name: <ERR, Device Type: GENERIC (dropdown), Device IP & Parameters: EasyLog Master (Pull) (dropdown), EasyLog: , Comment: . Below the table are buttons for 'Refresh', 'Save', 'New', 'Search', and 'SNMP >>'. There is also a 'Parameter Details' button on the right side of the table.

Select the Parameter details icon and you will be brought to the next page

As **Log Server Address** enter the IP address of the central server connected to the same network as the Master SiteManager.

Enter the IP addresses (aka address pool) to be assigned to the EasyLog clients and the port range or ports you want to open to the clients. Since the EasyLogging supports all different types of agents it has been left open over a larger port range than the three addresses we need.

If you only want to implement telnet you should restrict it to port 23 only as shown below.

Notice that the address range is set to be exposed on the DEV1 interface and are thereby protected from the outside world (WAN/Uplink) by the SiteManagers firewall function.

**SiteManager**  
sec<sup>o</sup>meda

SETUP • System GateManager VPN Routing Maintenance Status Log • HELP  
GateManager Info • General • Agents • Alerts • Device Relays • Server Relays • Web Proxy • Status

### New "" - EasyLog Master (Pull) Agent

An *EasyLog Master (Pull)* agent enables a central log server (typically a SCADA system) with the specified *Log Server Address* to actively collect (pull) data from remote devices controlled by EasyLog Client agents or normal agents with the "EasyLog" option selected.

To reach a device, the log server will connect to an *EasyLog Device Address* that is an IP alias for the device enabled on the SiteManager by the EasyLog Master agent.

Note: Linking of EasyLog Device Addresses with corresponding Device Addresses is done exclusively in the GateManager portal.

**WARNING:** IP address conflicts can have highly unpredictable effects on the entire network, so ensure that the addresses you specify as EasyLog Device Address range do not conflict with existing equipment in the local network of the SiteManager (the SiteManager itself does not issue any conflict warnings). If in doubt contact your network administrator.

Device Name: \* Building Master

Log Server Address: \* 192.168.5.12

Always On:

EasyLog Device Address range: \* 192.168.5.20-30

Forwarded TCP ports: \* 23

Forwarded UDP ports: \* 23

Interface: DEV1 ▼

Idle Timeout:

Custom Settings:

Save Back Ping

\* = Mandatory field

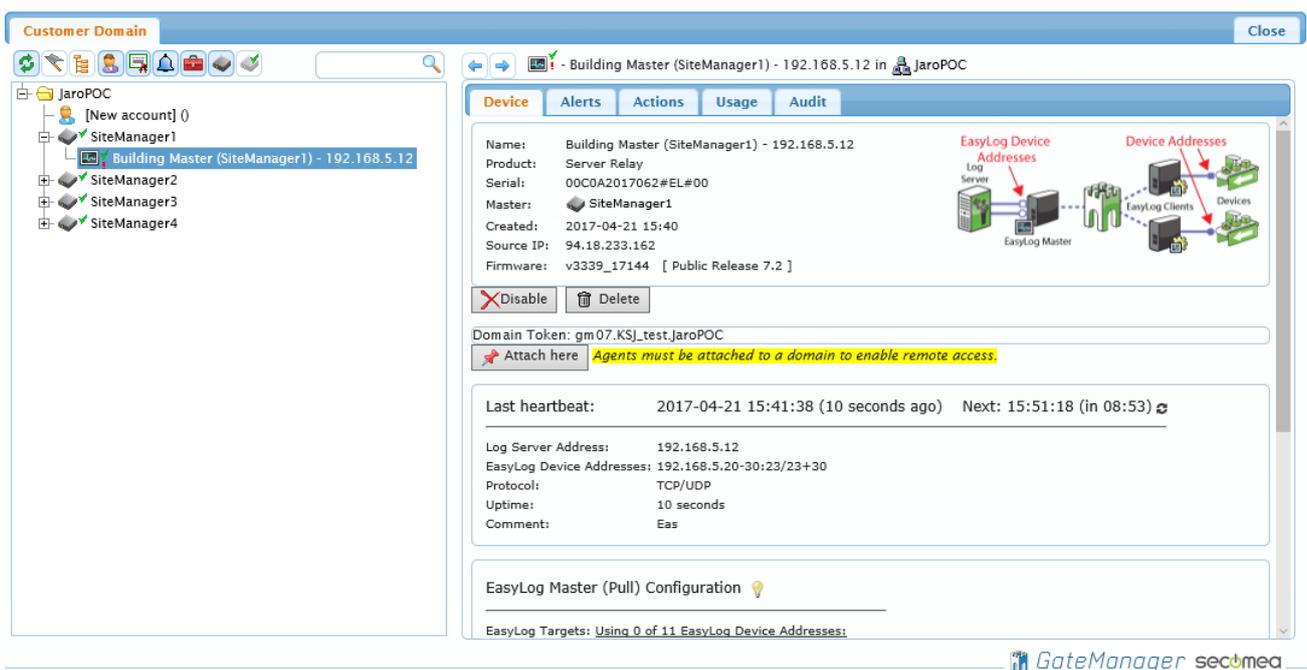
For testing, there is a ping button you can use to verify that the Log server is reachable.

If you are using this functionality notice that the Windows firewall may block responses to incoming ping request

Also, make sure you can pass traffic on port 23 also

### 3.5. Configure the EasyLog Master (Pull) Agent on the GateManager

Attach the EasyLog master to the domain by clicking "Attach here"



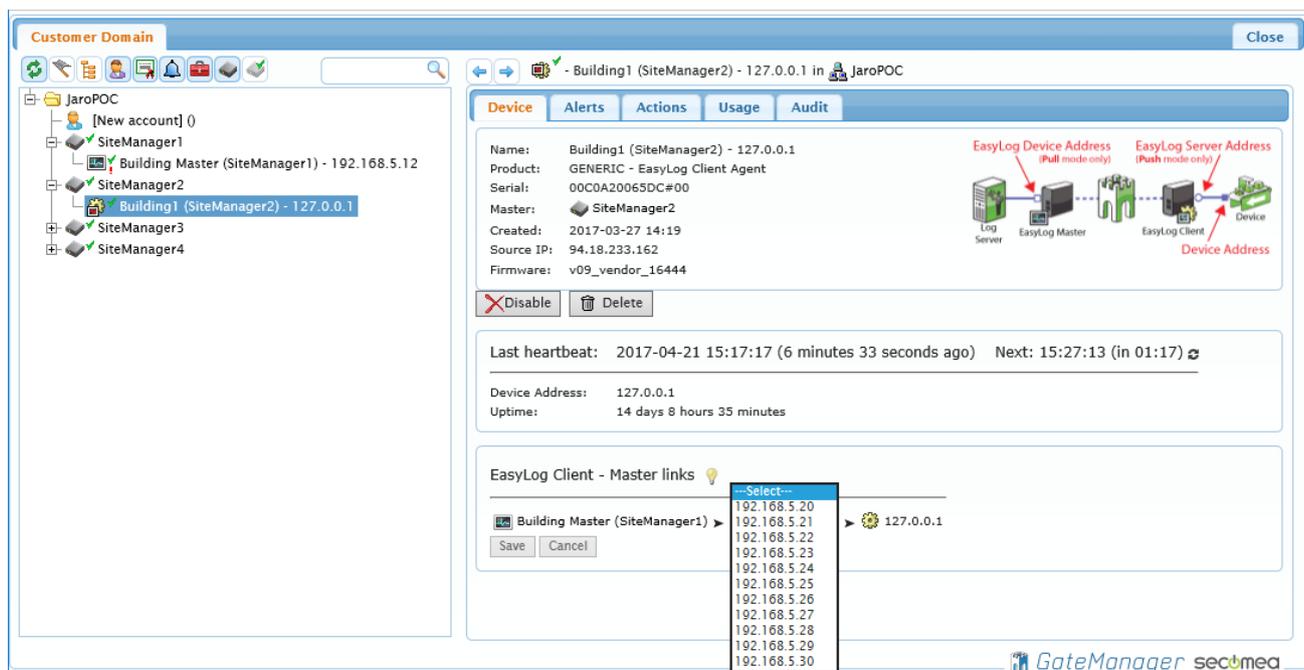
Next the EasyLog Clients needs to be assigned to the master with the correct IP address

### 3.6. Configure the EasyLogging Client Agents on the GateManager

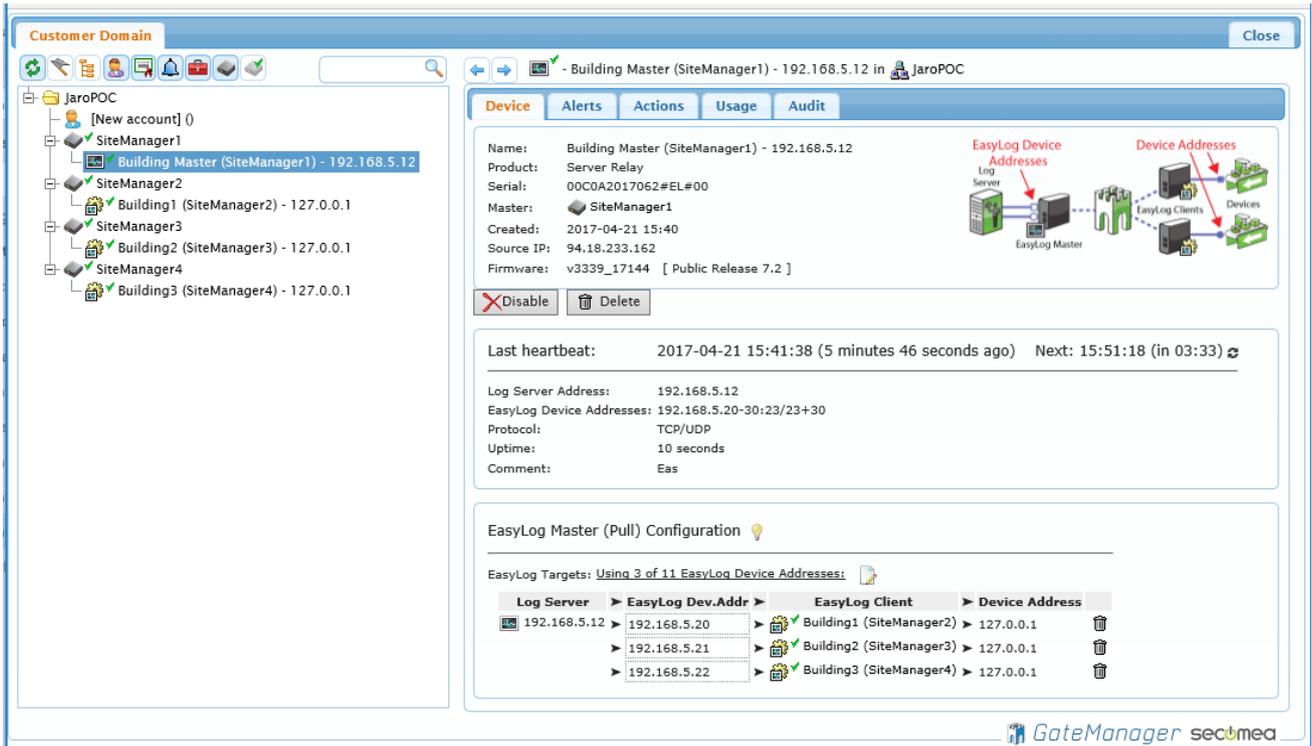
Select the EasyLog Client in the GateManager choose which EasyLog Master you want to connect to and

Select the IP address you want to associate with each remote device

Use :     Building1        192.168.5.20  
          Building2        192.168.5.21  
          Building3        192.168.5.22



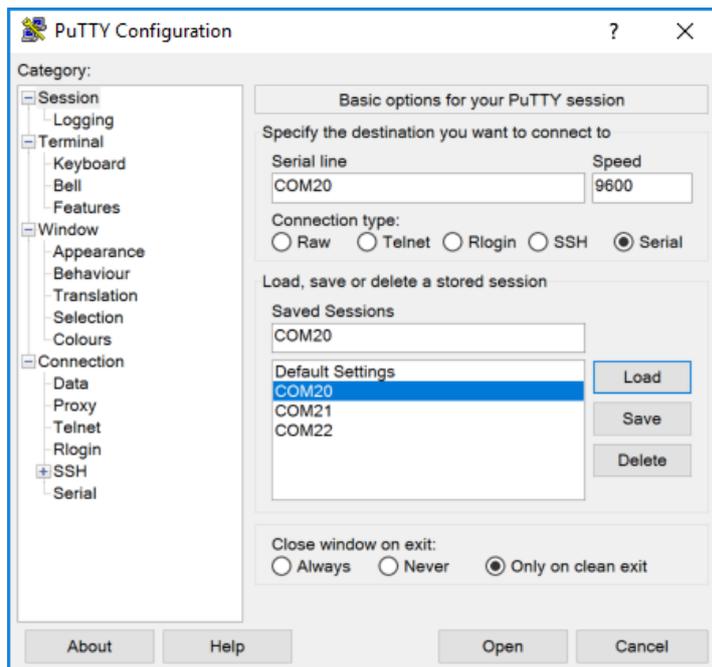
Press Save and after having configured all the clients the configuration should look like this:



Notice all agents has a green status indicating the laptop used in this setup is connected as a log server to the DEV1 port on the EasyLogging master SiteManager with IP address 192.168.5.12.

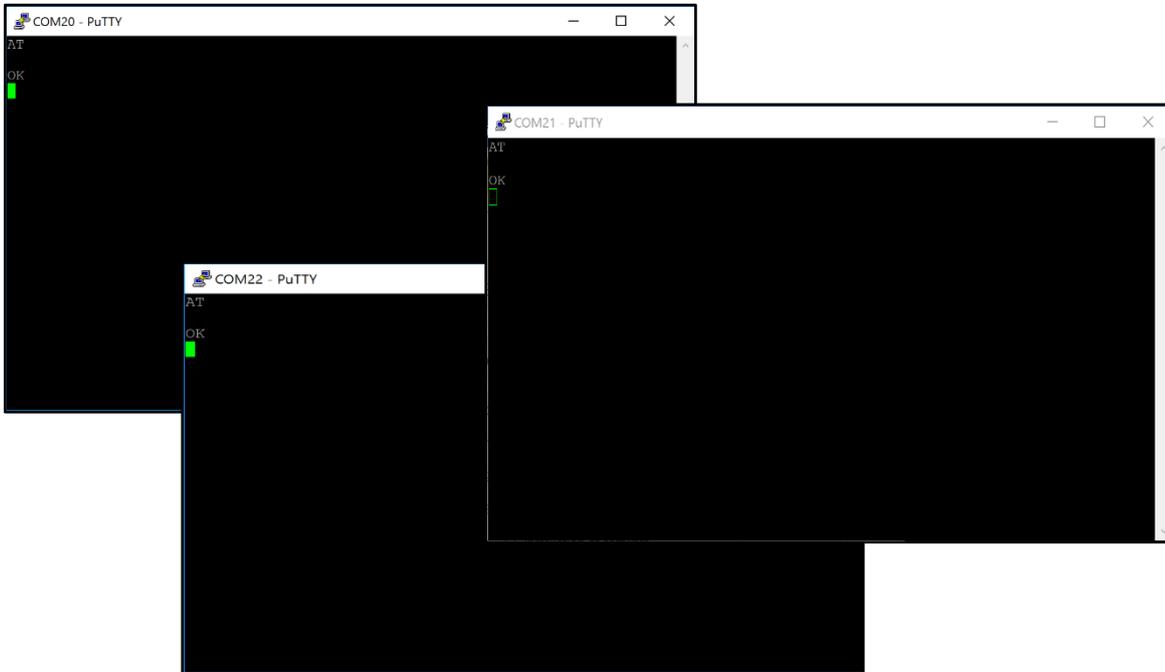
#### 4. Testing the configuration

Connect the PC where you have defined the IP address 192.168.5.12 on an Ethernet port that can reach the DEV1 port of the master SiteManager.



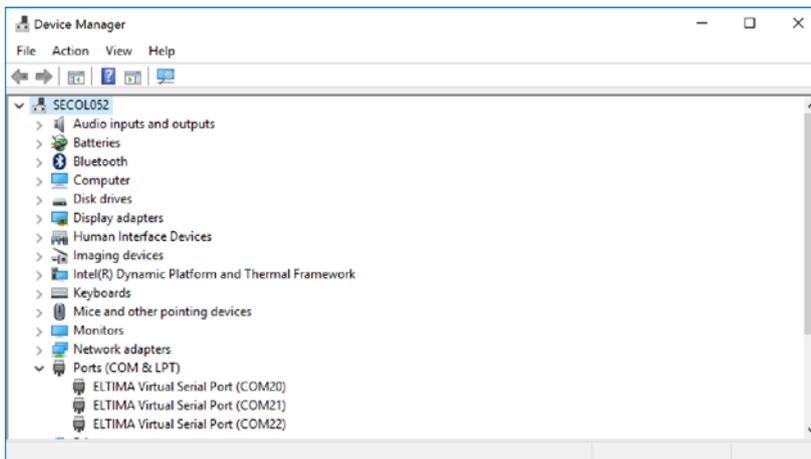
Use Putty or similar terminal software to connect to Com20, Com21 and Com22 for testing the serial devices (in this case analog modems) are connected to the Serial port of the EasyLogging client SiteManagers

And the verification is done using the AT command which returns an OK from the modem. If you do not have a valid target for testing, you can connect to another SiteManager Serial Port and set this targets serial port to SMS Modem



Above images shows the completed testing of Building 1, 2 and 3 Modem

Below the virtual comports listed in the Windows Device Manager.



Notice the amount of Comport you can activate is limited to the systems available resources.

For more information regarding EasyLogging please see the EasyLogging Deployment Guides

[https://support.secomea.com/dp\\_gm-sm-0117-easylogging\\_deployment\\_guide](https://support.secomea.com/dp_gm-sm-0117-easylogging_deployment_guide)

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