SPC Connect and FlexC Communication support document

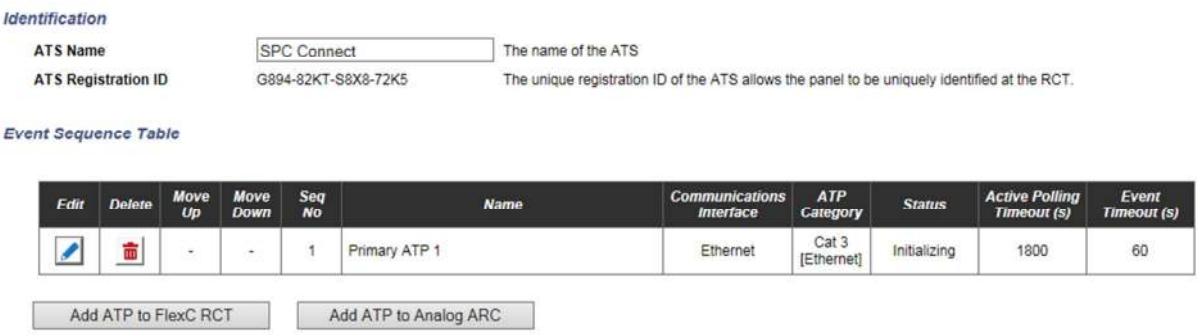
This document provides the information and practical processes required to assist the TCC support operatives in resolving communication issue with respect to SPC Connect and the SPC panel via FlexC.

The initial communication is set up using the “Add SPC Connect” button in the FlexC communications section.

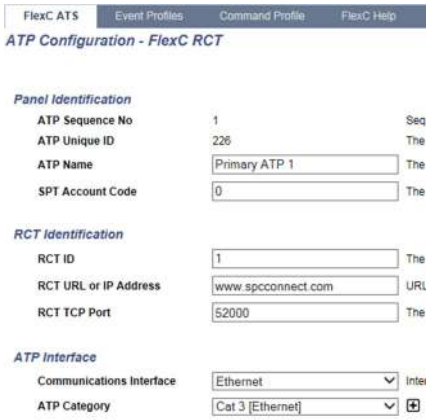
The complete set up is done in the one action. The correct URL for SPC Connect is entered automatically along with the correct port number and RCT ID. The installer has no setting to add for initial comms.

SPC Connect is added to ATP 1 and the registration Id is generated. This ID is critical as it’s the identifier for the communication to the SPC Connect portal. From the picture below you can see in the status column that it is now saying “Initializing”. The communication is waiting to connect to the portal and the encryption keys to negotiate. After this process which should only take no longer than 10 seconds, the status should change to OK. If it does not change to OK there are steps we can take to first find out what the reason for this is and secondly how to resolve it.

Please note that the Ok status could change to Fault for any reason. The same fault finding processes will also apply in these cases.

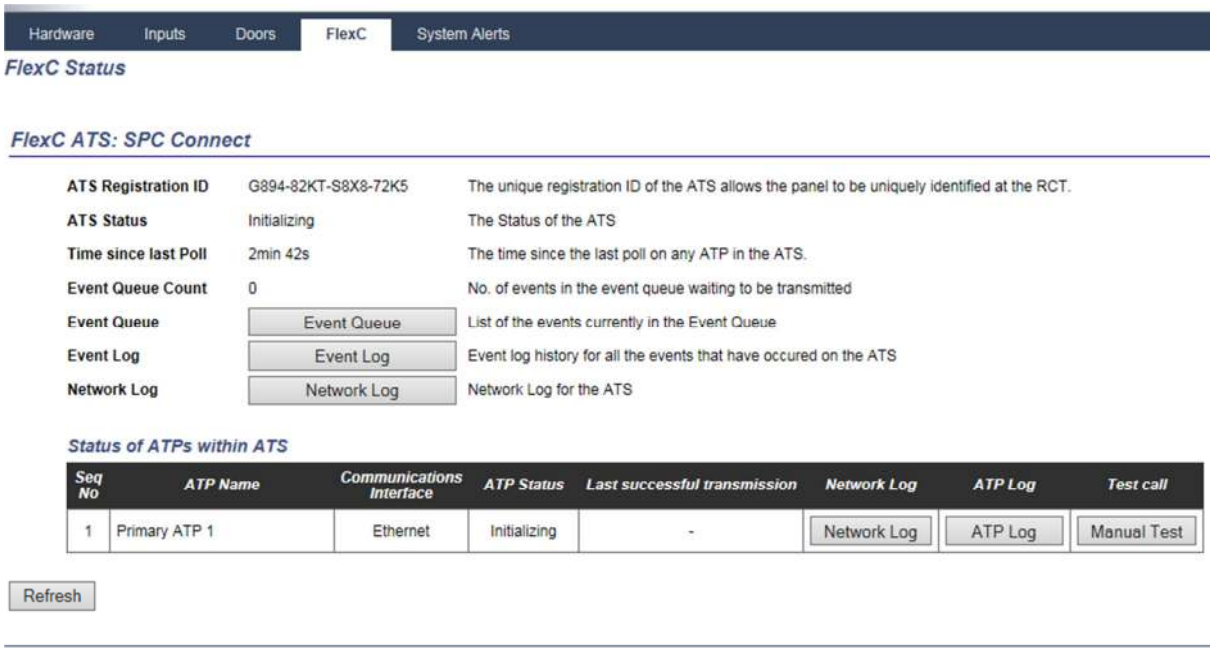


Another way to verify a valid connection to SPC Connect is to view the “SPT account Code”. (See below). If this value is at 0 this means that this ATP cannot connect to the SPC Connect server. For this reason we need to go through a systematic fault finding process.



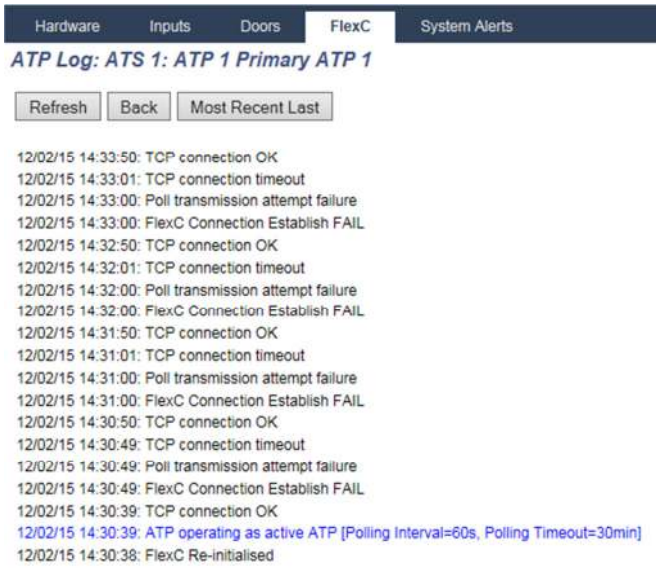
The first step is to view the APT log for the ATS connection. This can be found in the system status page under the FlexC tab. Click on the ATP log button on the bottom right.

=

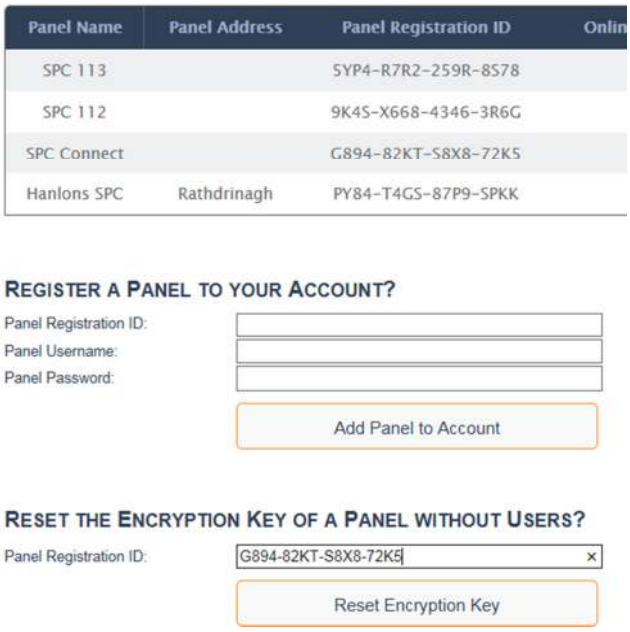


Viewing the ATP log will give you a good pointer to the issue. Please review the log below. You can see from this that the ATP is the active connection but when it tries to make a connection it gets a timeout error. It will continue to retry the connection until it does get a response.

The main reason for this type of log being generated is due to the panel and portal encryption keys not matching. This type of log can also be generated if the SPC controller loses connection with SPC Connect portal. For example bad connection to a switch or the switch port is set to 100 Mbit link while the SPC panel only supports 10 Mbits.

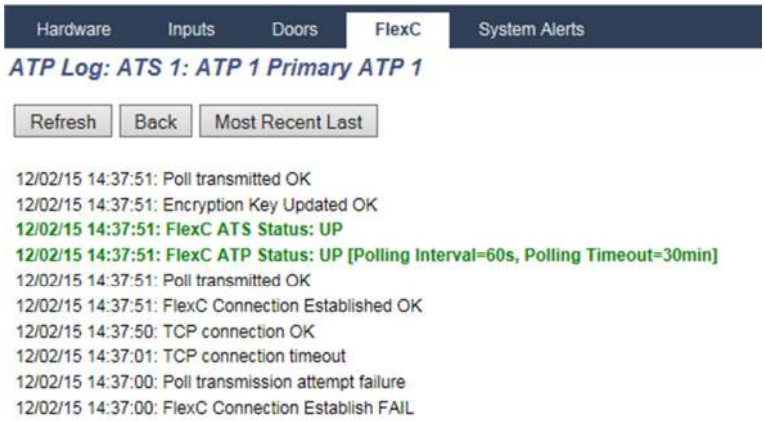


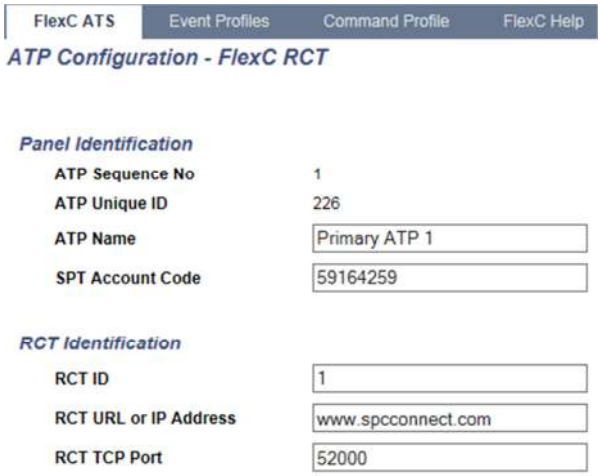
To resolve the Encryption issue, check your account on the SPC Connect server and verify that the registration ID is available. Put the Registration ID into the box shown below and click on the “Reset Encryption Key” button. If you cannot see the Registration key in your account try the same process.



Again check the ATP log on the panel to verify if resetting the key on the SPC Connect server fixed the problem. If it does not resolve it then reset the encryption key on the SPC panel side. Each ATP has its own dedicated encryption key so make sure you select the correct ATP for the SPC Connect portal. Go into advanced setting for the ATP and click on the Reset encryption button. Again if this does not work then the problem is the connection between the panel and the SPC Connect portal is broken. Check the cable link from the SPC controller to the switch and router. This can easily be dome by a simple ping command to the router gateway address. If you get a good reply then the connection is intact. If you do not, then check all physical links.

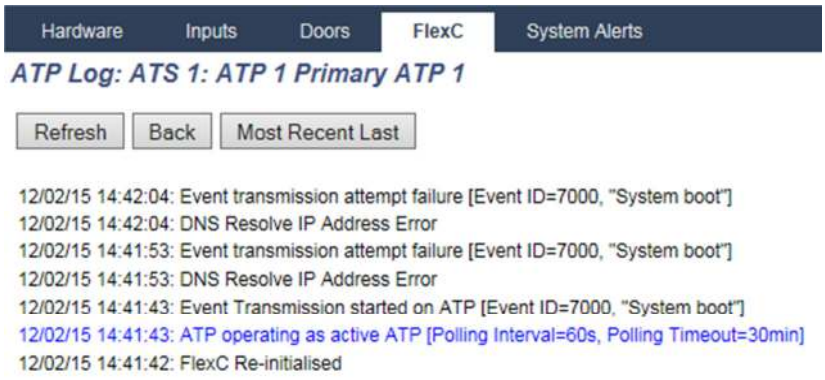
If this process does fix the issue then you should see the ATP log highlight the fact. You will receive a Poll transmitted OK and the ATP account code will change from 0 to an eight digit account code.

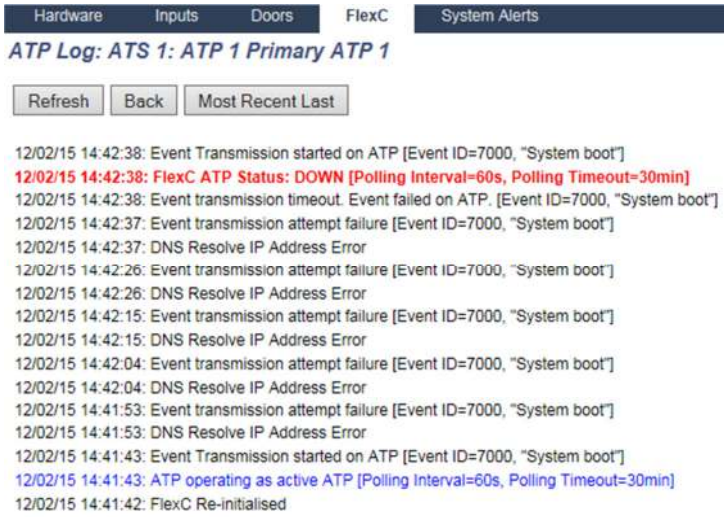




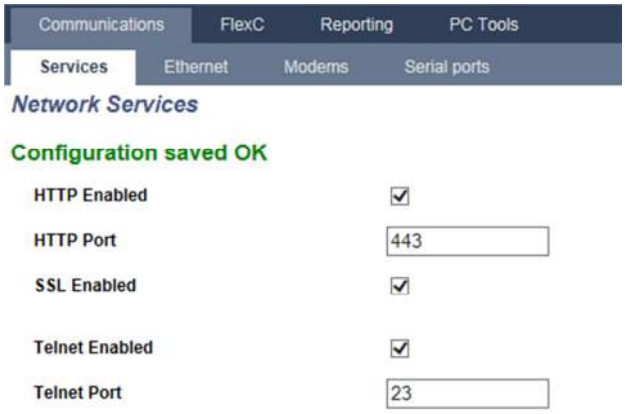
Finally the ATP status will change to “OK” as shown in the Status column below.

Another common reason for communication failure is incorrect DNS settings. The SPC connect URL is added to the ATP by default and if there is no DNS or an incorrect DNS added in the SPC Ethernet setting then the connection to the SPC Connect server will fail. By checking the SPC Connect ATP log you will discover this type of issue right away. Please view the log below. An event “System Boot” is trying to be transmitted to the SPC Connect portal but is failing every time due to an incorrect DNS IP address.

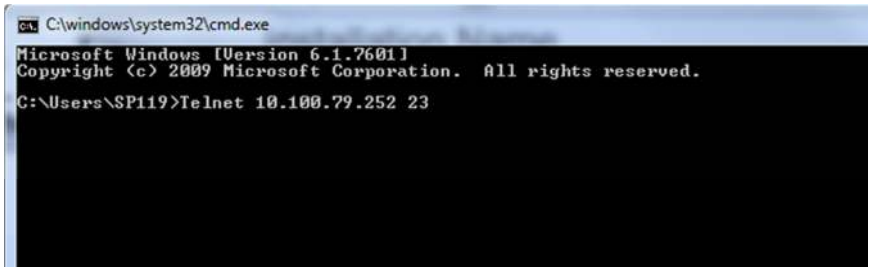


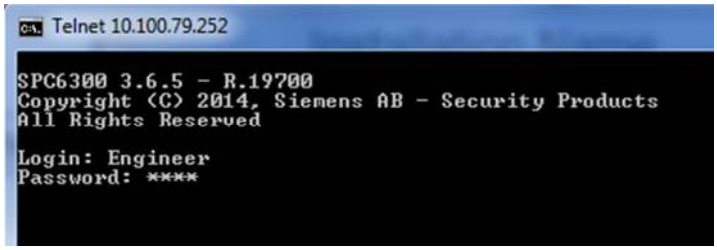


The SPC controller may have DHCP enabled so there is no way to view the IP settings through the browser itself. In this case the best way to analysis this issue is through the command window using the Telnet facility on the panel. In the services option, enable Telnet. The default telnet port is 23 but this can be changed if required. Please see settings below.



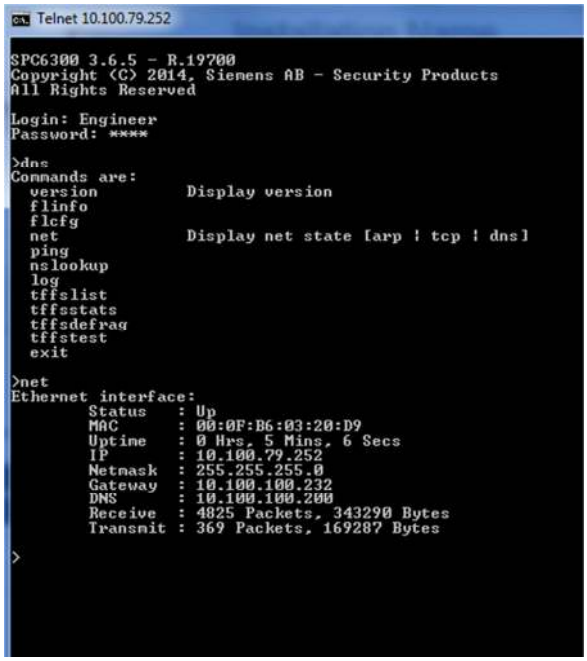
Open the command window and type Telnet followed by the IP address of the SPC controller. When comms is established you will be asked to enter the Engineer code and the Engineer password.





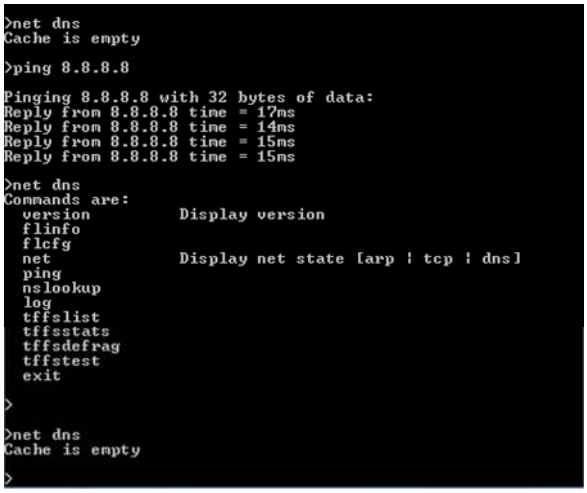
There are two commands we will use to first discover the SPC IP settings and finally to verify if the panel can see the SPC Connect portal. We first type in the “net” command.

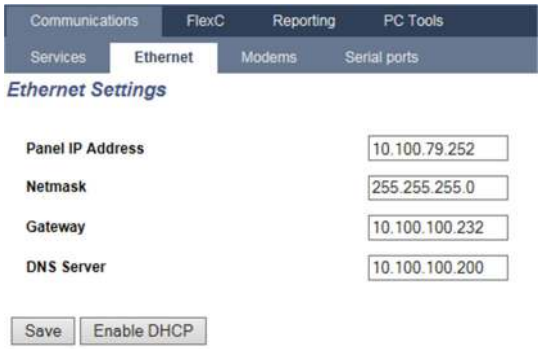
This will tell us that the communication to the router is up. It will also display the IP address, the gateway, the netmask, mac address and finally the DNS address.



The next command to use is the “net dns” command.

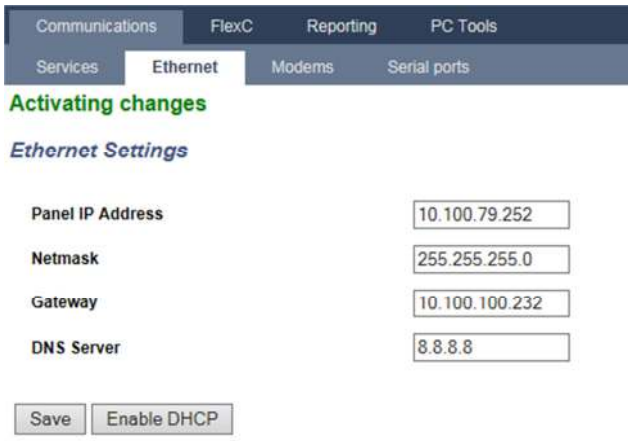
There are two responses you should receive. If there is an invalid DNS enter into the SPC Ethernet settings then you will get the response “Cache is empty”. You can also ping from the command window to verify that the DNS address is indeed invalid. You could at this stage try a known DNS for example google.com is 8.8.8.8. This will verify that you have a good outbound connection. If you get a reply from the google server then you now know that the connection is good and the most likely problem is an invalid DNS address.

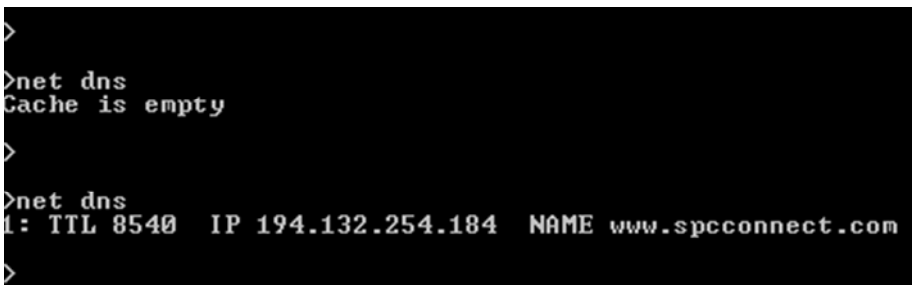




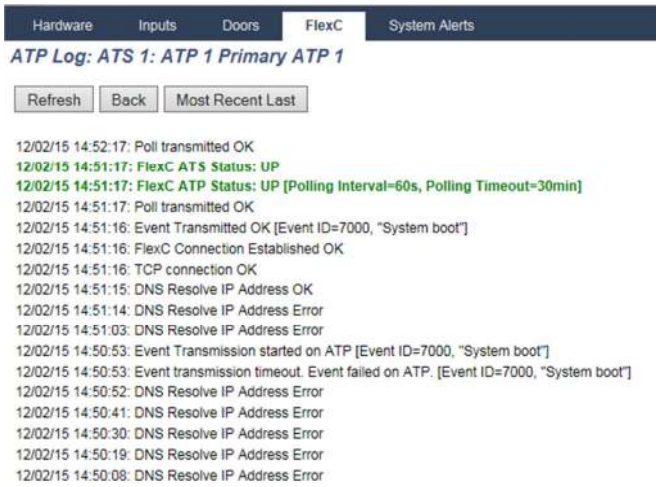
To verify the connection at this stage you could replace the invalid DNS address with the valid google address 8.8.8.8 (for test purposes only).

Go to Ethernet settings and replace the current DNS address with 8.8.8.8 as shown in the picture below. Click on the save button. I also recommend that you reset the panel at this stage. Go back to the command window and type in the command “net dns”. The SPC will now display the spcconnect.com URL. This means you now have a valid connect to the SPC Connect server.

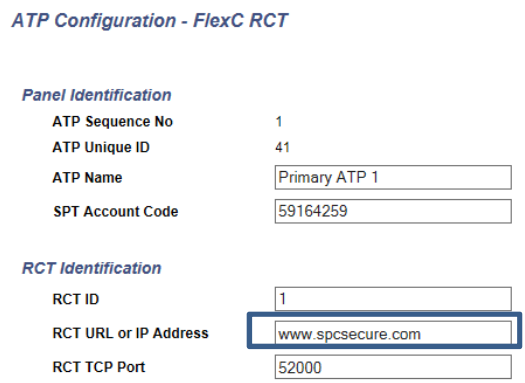




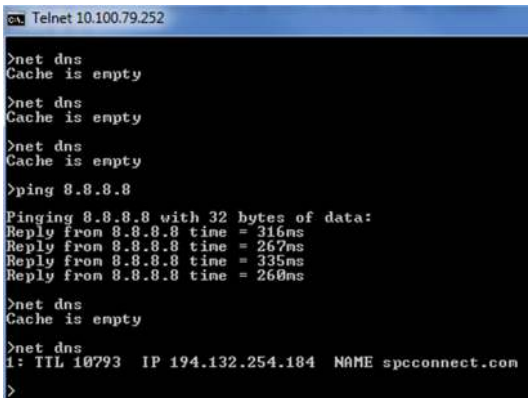
Return to the ATP log and verify the connection. The connection status should now read OK and the log will look like the list below.



Another reason for the ATP log to show a “DNS Resolve IP Address Error” could be due to an incorrect URL or IP address entered into the ATP settings.



The same procedure would be used to firstly pinpoint the issue. If you confirm the DNS IP address is correct or you use the google.com address 8.8.8.8 and the issue still persists then check the ATP settings and make sure you have the correct URL entered. After finding the issue and entering the correct URL you should then get the correct DNS reply and the comms should initialize as shown in the two pictures below.



All the procedure shown will help in 99% of all cases. There may be other settings related to firewalls and corporate network security that may cause the connection to fail. In these cases please consult with the local IT administrators and request that outbound ports are left open. SPC Connect uses port 52000 as its inbound port. This value cannot be altered at the SPC ATP settings.