

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.

Configured ATS

Edit	Delete	Export ATS	ID	ATS Name	ATS Registration ID	ATP Count	Event / Command Profiles	ATS Polling Timeout	ATS Event Timeout	Generate FTC
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Add SPC Connect

Add an ATS to the SPC Connect Server

Add SPC Connect

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.

ATS Configuration

Configuration saved OK

Configured ATS

Edit	Delete	Export ATS	ID	ATS Name	ATS Registration ID	ATP Count	Event / Command Profiles	ATS Polling Timeout	ATS Event Timeout	Generate FTC
			1	SPC Connect	G894-82KT-S8X8-72K5	1	- Default Events [SPC Connect] - Default Commands [SPC Connect]	1800	1800	No

Add SPC Connect

Add an ATS to the SPC Connect Server

Add SPC Connect

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.

Identification

ATS Name The name of the ATS
 ATS Registration ID The unique registration ID of the ATS allows the panel to be uniquely identified at the RCT.

Event Sequence Table

Edit	Delete	Move Up	Move Down	Seq No	Name	Communications Interface	ATP Category	Status	Active Polling Timeout (s)	Event Timeout (s)
		-	-	1	Primary ATP 1	Ethernet	Cat 3 [Ethernet]	Initializing	1800	60

Add ATP to FlexC RCT

Add ATP to Analog ARC

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.

FlexC ATS Event Profiles Command Profile FlexC Help

ATP Configuration - FlexC RCT

Panel Identification

ATP Sequence No 1 Seq
 ATP Unique ID 226 The
 ATP Name Primary ATP 1 The
 SPT Account Code 0 The

RCT Identification

RCT ID 1 The
 RCT URL or IP Address www.spcconnect.com URL
 RCT TCP Port 52000 The

ATP Interface

Communications Interface Ethernet Inter
 ATP Category Cat 3 [Ethernet] +

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.

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Hardware Inputs Doors FlexC System Alerts

FlexC Status

FlexC ATS: SPC Connect

ATP Registration ID G894-82KT-S8X8-72K5 The unique registration ID of the ATS allows the panel to be uniquely identified at the RCT.
 ATS Status Initializing The Status of the ATS
 Time since last Poll 2min 42s The time since the last poll on any ATP in the ATS.
 Event Queue Count 0 No. of events in the event queue waiting to be transmitted
 Event Queue Event Queue List of the events currently in the Event Queue
 Event Log Event Log Event log history for all the events that have occurred on the ATS
 Network Log Network Log Network Log for the ATS

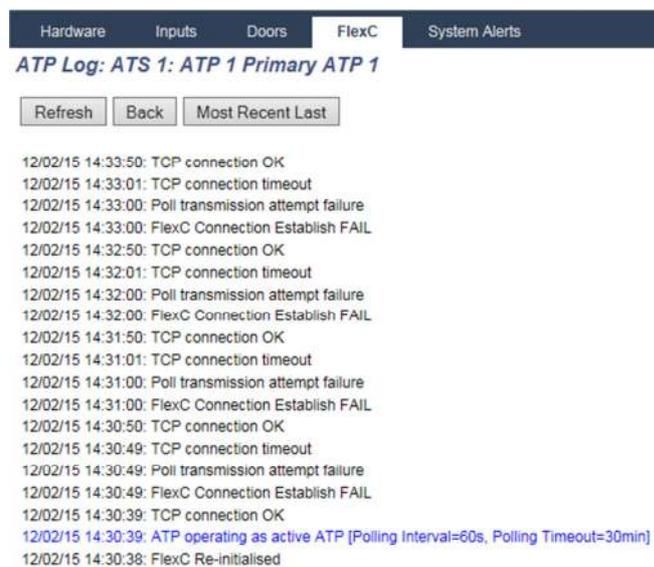
Status of ATPs within ATS

Seq No	ATP Name	Communications Interface	ATP Status	Last successful transmission	Network Log	ATP Log	Test call
1	Primary ATP 1	Ethernet	Initializing	-	Network Log	ATP Log	Manual Test

Refresh

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.



The screenshot shows a web interface with a dark blue header containing navigation tabs: Hardware, Inputs, Doors, FlexC (selected), and System Alerts. Below the header, the title is "ATP Log: ATS 1: ATP 1 Primary ATP 1". There are three buttons: Refresh, Back, and Most Recent Last. The log content consists of a series of timestamped messages:

```
12/02/15 14:33:50: TCP connection OK
12/02/15 14:33:01: TCP connection timeout
12/02/15 14:33:00: Poll transmission attempt failure
12/02/15 14:33:00: FlexC Connection Establish FAIL
12/02/15 14:32:50: TCP connection OK
12/02/15 14:32:01: TCP connection timeout
12/02/15 14:32:00: Poll transmission attempt failure
12/02/15 14:32:00: FlexC Connection Establish FAIL
12/02/15 14:31:50: TCP connection OK
12/02/15 14:31:01: TCP connection timeout
12/02/15 14:31:00: Poll transmission attempt failure
12/02/15 14:31:00: FlexC Connection Establish FAIL
12/02/15 14:30:50: TCP connection OK
12/02/15 14:30:49: TCP connection timeout
12/02/15 14:30:49: Poll transmission attempt failure
12/02/15 14:30:49: FlexC Connection Establish FAIL
12/02/15 14:30:39: TCP connection OK
12/02/15 14:30:39: ATP operating as active ATP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:30:38: FlexC Re-initialised
```

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.

Panel Name	Panel Address	Panel Registration ID	Online
SPC 113		5YP4-R7R2-259R-8578	
SPC 112		9K45-X668-4346-3R6G	
SPC Connect		G894-82KT-S8X8-72K5	
Hanlons SPC	Rathdrinagh	PY84-T4G5-87P9-SPKK	



REGISTER A PANEL TO YOUR ACCOUNT?

Panel Registration ID:

Panel Username:

Panel Password:



RESET THE ENCRYPTION KEY OF A PANEL WITHOUT USERS?

Panel Registration ID:

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 done 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.

FlexC ATS | Event Profiles | Command Profile | FlexC Help

ATP Configuration - Advanced Settings

ATP Connections

Active ATP Connection:

Non-Active ATP Connection:

Test Calls

Test call Mode (Non Active ATP):

Test call Mode (Active ATP):

Encryption (256-bit AES with CBC)

Encryption Key Mode:

Encryption Password:

Reset Encryption:

ATP Profiles

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.

ATP Log: ATS 1: ATP 1 Primary ATP 1

Refresh Back Most Recent Last

12/02/15 14:37:51: Poll transmitted OK
 12/02/15 14:37:51: Encryption Key Updated OK
12/02/15 14:37:51: FlexC ATS Status: UP
12/02/15 14:37:51: FlexC ATP Status: UP [Polling Interval=60s, Polling Timeout=30min]
 12/02/15 14:37:51: Poll transmitted OK
 12/02/15 14:37:51: FlexC Connection Established OK
 12/02/15 14:37:50: TCP connection OK
 12/02/15 14:37:01: TCP connection timeout
 12/02/15 14:37:00: Poll transmission attempt failure
 12/02/15 14:37:00: FlexC Connection Establish FAIL

ATP Configuration - FlexC RCT

Panel Identification

ATP Sequence No 1
 ATP Unique ID 226
 ATP Name
 SPT Account Code

RCT Identification

RCT ID
 RCT URL or IP Address
 RCT TCP Port

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

ATS Configuration [ATS 1]

Identification

ATS Name The name of the ATS
 ATS Registration ID G894-82KT-S8X8-72K5 The unique registration ID of the ATS allows the panel to be uniquely identified

Event Sequence Table

Edit	Delete	Move Up	Move Down	Seq No	Name	Communications Interface	ATP Category	Status
		-	-	1	Primary ATP 1	Ethernet	Cat 3 [Ethernet]	OK

Add ATP to FlexC RCT Add ATP to Analog ARC

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.

Hardware Inputs Doors **FlexC** System Alerts

ATP Log: ATS 1: ATP 1 Primary ATP 1

Refresh Back Most Recent Last

12/02/15 14:42:04: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:42:04: DNS Resolve IP Address Error
12/02/15 14:41:53: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:41:53: DNS Resolve IP Address Error
12/02/15 14:41:43: Event Transmission started on ATP [Event ID=7000, "System boot"]
12/02/15 14:41:43: ATP operating as active ATP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:41:42: FlexC Re-initialised

Hardware Inputs Doors FlexC **System Alerts**

ATP Log: ATS 1: ATP 1 Primary ATP 1

Refresh Back Most Recent Last

12/02/15 14:42:38: Event Transmission started on ATP [Event ID=7000, "System boot"]
12/02/15 14:42:38: FlexC ATP Status: DOWN [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:42:38: Event transmission timeout. Event failed on ATP. [Event ID=7000, "System boot"]
12/02/15 14:42:37: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:42:37: DNS Resolve IP Address Error
12/02/15 14:42:26: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:42:26: DNS Resolve IP Address Error
12/02/15 14:42:15: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:42:15: DNS Resolve IP Address Error
12/02/15 14:42:04: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:42:04: DNS Resolve IP Address Error
12/02/15 14:41:53: Event transmission attempt failure [Event ID=7000, "System boot"]
12/02/15 14:41:53: DNS Resolve IP Address Error
12/02/15 14:41:43: Event Transmission started on ATP [Event ID=7000, "System boot"]
12/02/15 14:41:43: ATP operating as active ATP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:41:42: FlexC Re-initialised

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.

Communications	FlexC	Reporting	PC Tools
Services	Ethernet	Modems	Serial ports

Network Services

Configuration saved OK

HTTP Enabled	<input checked="" type="checkbox"/>
HTTP Port	<input type="text" value="443"/>
SSL Enabled	<input checked="" type="checkbox"/>
Telnet Enabled	<input checked="" type="checkbox"/>
Telnet Port	<input type="text" value="23"/>

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.

```
C:\windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Users\SP119>Telnet 10.100.79.252 23
```

```
C:\Telnet 10.100.79.252
SPC6300 3.6.5 - R.19700
Copyright (C) 2014, Siemens AB - Security Products
All Rights Reserved
Login: 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.

```
ca Telnet 10.100.79.252
SPC6300 3.6.5 - R.19700
Copyright (C) 2014, Siemens AB - Security Products
All Rights Reserved

Login: Engineer
Password: ****

>dns
Commands are:
  version          Display version
  flinfo
  flcfg
  net              Display net state [arp | tcp | dns]
  ping
  nslookup
  log
  tffslist
  tffsstats
  tffsdefrag
  tffstest
  exit

>net
Ethernet interface:
  Status      : Up
  MAC         : 00:0F:B6:03:20:D9
  Uptime      : 0 Hrs, 5 Mins, 6 Secs
  IP          : 10.100.79.252
  Netmask     : 255.255.255.0
  Gateway     : 10.100.100.232
  DNS         : 10.100.100.200
  Receive     : 4825 Packets, 343290 Bytes
  Transmit    : 369 Packets, 169287 Bytes

>
```

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.

```
>net dns
Cache is empty

>ping 8.8.8.8
Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8 time = 17ms
Reply from 8.8.8.8 time = 14ms
Reply from 8.8.8.8 time = 15ms
Reply from 8.8.8.8 time = 15ms

>net dns
Commands are:
  version          Display version
  flinfo
  flcfg
  net              Display net state [arp | tcp | dns]
  ping
  nslookup
  log
  tffslist
  tffsstats
  tffsdefrag
  tffstest
  exit

>

>net dns
Cache is empty

>
```

Communications	FlexC	Reporting	PC Tools
Services	Ethernet	Modems	Serial ports

Ethernet Settings

Panel IP Address	<input type="text" value="10.100.79.252"/>
Netmask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="10.100.100.232"/>
DNS Server	<input type="text" value="10.100.100.200"/>

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.

Communications	FlexC	Reporting	PC Tools
Services	Ethernet	Modems	Serial ports

Activating changes

Ethernet Settings

Panel IP Address	<input type="text" value="10.100.79.252"/>
Netmask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="10.100.100.232"/>
DNS Server	<input type="text" value="8.8.8.8"/>

```
>
>net dns
Cache is empty
>
>net dns
1: TTL 8540 IP 194.132.254.184 NAME www.spcconnect.com
>
```

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.

The screenshot shows a web interface with a dark blue header containing tabs for Hardware, Inputs, Doors, FlexC, and System Alerts. The 'FlexC' tab is selected. Below the header, the title is 'ATP Log: ATS 1: ATP 1 Primary ATP 1'. There are three buttons: 'Refresh', 'Back', and 'Most Recent Last'. The log entries are as follows:

```
12/02/15 14:52:17: Poll transmitted OK
12/02/15 14:51:17: FlexC ATS Status: UP
12/02/15 14:51:17: FlexC ATP Status: UP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:51:17: Poll transmitted OK
12/02/15 14:51:16: Event Transmitted OK [Event ID=7000, "System boot"]
12/02/15 14:51:16: FlexC Connection Established OK
12/02/15 14:51:16: TCP connection OK
12/02/15 14:51:15: DNS Resolve IP Address OK
12/02/15 14:51:14: DNS Resolve IP Address Error
12/02/15 14:51:03: DNS Resolve IP Address Error
12/02/15 14:50:53: Event Transmission started on ATP [Event ID=7000, "System boot"]
12/02/15 14:50:53: Event transmission timeout. Event failed on ATP. [Event ID=7000, "System boot"]
12/02/15 14:50:52: DNS Resolve IP Address Error
12/02/15 14:50:41: DNS Resolve IP Address Error
12/02/15 14:50:30: DNS Resolve IP Address Error
12/02/15 14:50:19: DNS Resolve IP Address Error
12/02/15 14:50:08: DNS Resolve IP Address Error
```

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 screenshot shows a web interface with a dark blue header containing tabs for Hardware, Inputs, Doors, FlexC, and System Alerts. The 'FlexC' tab is selected. Below the header, the title is 'ATP Log: ATS 2: ATP 1 Primary ATP 1'. There are three buttons: 'Refresh', 'Back', and 'Most Recent Last'. The log entries are as follows:

```
12/02/15 14:56:44: Poll transmission attempt failure
12/02/15 14:56:44: DNS Resolve IP Address Error
12/02/15 14:55:44: Poll transmission attempt failure
12/02/15 14:55:44: DNS Resolve IP Address Error
12/02/15 14:55:43: Poll transmission attempt failure
12/02/15 14:55:43: DNS Resolve IP Address Error
12/02/15 14:55:43: ATP operating as active ATP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 14:55:43: FlexC Re-initialised
```

ATP Configuration - FlexC RCT

Panel Identification

ATP Sequence No	1
ATP Unique ID	41
ATP Name	<input type="text" value="Primary ATP 1"/>
SPT Account Code	<input type="text" value="59164259"/>

RCT Identification

RCT ID	<input type="text" value="1"/>
RCT URL or IP Address	<input type="text" value="www.spcsecure.com"/>
RCT TCP Port	<input type="text" value="52000"/>

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.

```
ca Telnet 10.100.79.252
>net dns
Cache is empty
>net dns
Cache is empty
>net dns
Cache is empty
>ping 8.8.8.8
Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: time=316ms
Reply from 8.8.8.8: time=267ms
Reply from 8.8.8.8: time=335ms
Reply from 8.8.8.8: time=268ms
>net dns
Cache is empty
>net dns
1: TTL 10793 IP 194.132.254.184 NAME spcconnect.com
>
```

Hardware Inputs Doors FlexC System Alerts

ATP Log: ATS 2: ATP 1 Primary ATP 1

Refresh Back Most Recent Last

12/02/15 15:02:11: Poll transmitted OK
12/02/15 15:02:11: Encryption Key Updated OK
12/02/15 15:02:11: Poll transmitted OK
12/02/15 15:02:11: FlexC ATS Status: UP
12/02/15 15:02:11: FlexC ATP Status: UP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 15:02:11: Poll transmitted OK
12/02/15 15:02:11: FlexC Connection Established OK
12/02/15 15:02:10: TCP connection OK
12/02/15 15:02:10: DNS Resolve IP Address OK
12/02/15 15:02:09: ATP operating as active ATP [Polling Interval=60s, Polling Timeout=30min]
12/02/15 15:02:09: FlexC Re-initialised

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.

