Technical Bulletin
Monitoring Synchronous Constellation equipment in TNCS using the Hercules Proxy

Overview

This addendum applies to Scientific-Atlanta customers who use TNCS to monitor Synchronous Constellation via the Hercules proxy.

Introduction

This addendum is a supplement of the TNCS Software User's Guide. (P/N 730201)
This addendum provides TNCS administrators with the following information:

1. Requirements to monitor Synchronous Constellation via the Hercules proxy.
2. How to connect to the Hercules and the Synchronous Constellation chassis.
3. How to add the Synchronous Constellation Chassis and Hercules proxy devtypes to the TNCS devlist.
4. TNCS graphics with the Synchronous Constellation Chassis and Hercules Proxy.

Requirements:

1. TNCS Version 1.6.1 Service Pack 5 or greater with SNMP Manager License
2. IP connectivity to the Hercules Proxy hardware.
3. RS485 connectivity between the Hercules Proxy hardware and the Synchronous Constellation Chassis.

Setup of Hercules Proxy and Synchronous Constellation Chassis

1. Obtain the IP address, Subnet mask and the Gateway for each Hercules Proxy to be monitored. The address programmed in the Hercules Proxy can be obtained by connecting a monitor and keyboard to the Hercules. (The connections for the monitor and keyboard are located on the back of the chassis.) When the Hercules is powered on, a screen will appear on the monitor and the IP address will be visible on the bottom of the screen. If the IP address needs to be changed, the synagent.ini file in the Hercules will need to be edited. To change the Hercules address, do the following:
   - **a.** Use the F3 key to exit the agent application.
   - **b.** Use the following command at the DOS C: prompt. "edit synagent.ini"
   - **c.** Scroll down to where the IP address, Subnet Mask and Gateway are listed and type in the new IP information required. Other information in the synagent.ini may require changing. **Refer to documentation supplied with the Hercules or Contact Motorola if additional information on setting up the Hercules is required.**
   - **d.** Save the changes.
   - **e.** Restart the Hercules Proxy hardware.

   The Hercules software will automatically start on power up and you can verify the IP address has changed.

2. Connect the Hercules' Ethernet port to the IP network with a cat5 cable and confirm that the TNCS server can ping the Hercules chassis.

3. Connect the Hercules to the Synchronous Constellation Chassis. The Connection on the Synchronous Constellation Chassis is a female DB9 connector labeled RS485. The connection on the Hercules is a RJ11 connector labeled RS485 input. (Depending on the Hercules model, there could be between 1 and 8 RS485 inputs on the Hercules.) The Pin-out of the cable RJ11 to DB9 Male connector required is in the table below.

DB9 Male	RJ11
1	
2	1
3	2
4	3
5	4
6	5
7	
8	6
9	

4. Note the RJ11 Port that is used connected to each Synchronous Constellation chassis. The RJ11 port number on the Synchronous Constellation chassis will be used in creating the devlist in TNCS. (see below) **Note: Each Synchronous Constellation must be connected to a different RJ11 RS485 port on the Hercules.**

Setup of TNCS
Monitoring of the Constellation via Hercules devices in TNCS can only be set up by editing the Devlist; On-Line Add / Delete will not work correctly.

A. Editing the Devlist

1. Open the TNCS file devlist.txt with a text editor. It is recommended that a backup copy of the devlist.txt file be made anytime changes are being made to the file. **Note: The devlist.txt file is normally found in the following directory: C:\Program Files\TNCS 1.6.1**
2. Enter the groups and devices into the devlist.txt file. Below is a sample devlist for Synchronous Constellation and Hercules devtypes**.**

```
Group RackSync graphic="rack 40" desc=sync address=1000
 Group HercSync port=none address=1001 racverpos=20
  hercules herc1 port=ethernet address=172.18.184.173
 Group ConstChassis graphic=”chassis constellation’’ address=1002 racverpos=22 /
desc=”ConstChassis”
  constellation cha1 port=ethernet address=172.18.184.173 snmind=2
  const_ps ps1 port=ethernet address=172.18.184.173 snmind=19
  const_sirius1 Sirius1 port=ethernet address=172.18.184.173 snmind=11
  const_antares Antares3 port=ethernet address=172.18.184.173 snmind=13
  const_quasar quasar1 port=ethernet address=172.18.184.173 snmind=14
```

Line 1 is a standard entry for an equipment rack.
Line 2 is a standard entry for a Group. This is used to represent the Hercules as a 2 RU chassis positioned 20 RUs from the bottom of the rack.

> **Note: There is not a chassis graphic available in TNCS for Hercules; therefore, it is recommended to use the default chassis view. Using a group with a “rack vertical position” (racverpos) without specifying a chassis graphic will create a display of a rack with a 2 RU chassis positioned the number of rack units specified from the bottom of the rack**

Line 3 Describes the Hercules devtype entry.
“Hercules” is the devtype for the Hercules chassis. The other fields required are:
Unique Name - “herc1” is the name used in this example.
Address – This will be the IP of the Hercules chassis.
Port – Use “Ethernet” for the Hercules chassis.
Line 4 Describes the Group used for a Constellation chassis. There is a TNCS custom graphic to display the chassis and modules that are contained within the chassis. Other entries in this line are

> Unique name – “ConstChassis” is the name used in this example
> Graphic - “chassis constellation” is the name of the custom chassis graphic
> Address – “1002” is the address used in this example
> Racverpos – Positions the bottom of the constellation chassis 22 RUs above the bottom of the rack
> / - indicates that this line of the devlist continues on the next line
> desc - ConstChassis is the name used to describe the chassis

Line 5 Describes the chassis interface

> Constellation – is the devtype for the chassis interface
> Unique Name – In this example cha1 is used
> Port - “Ethernet” is used for all Constellation modules
> Address – The IP address of the Hercules is required
> Snmind – this is the SNMP index of the module. In this example it is 2 which means the chassis is connected to the Hercules RS485 port number 2. (See SNMIND below for specific details.)

Line 6 Describes the Power Supply for the constellation chassis. Power supplies will always be in the “9s and 10s” slots.

Const_ps - is the devtype for the power supply
Unique Name – in this example ps1 is used.
Port - "Ethernet" is used for all Constellation modules
Address – The IP address of the Hercules is required
Snmind – this is the SNMP index of the module. In this example it is 19. (See SNMIND below for specific details)

Lines 7-9 describe standard entries for Synchronous Constellation module devtypes.
The TNCS devtypes for the Synchronous Constellation are as follows.

const_altair
const_antares
const_orion
const_polaris
const_quasar
const_sirius1

For each module in the devlist, the following parameters are used:
Devtype – Select from the possible modules above
Unique Name – Give each module a name different from the other modules
Port – "Ethernet" is used for all Constellation modules
Address – The IP address of the Hercules is required
Snmind – this is the SNMP index of the module.

SNMIND

The snmind for each module is determined as follows:

1. The "constellation" devtype's snmind will be the port on the Hercules that the Chassis is plugged in. In the example devlist, the constellation's snmind=2 indicates the Synchronous Constellation chassis is plugged in the number "2" RS485 port on the Hercules. Basically the SNMP index is determined by the RS485 port being used by the Hercules. The table below will explain the snmind used for each module slot.

Typical View of Constellation Chassis

		CHASSIS (1 - 8)									
Hercules RS485 Port	Chassis	PS1	PS2	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8
1	1	9	10	1	2	3	4	5	6	7	8
2	2	19	20	11	12	13	14	15	16	17	18
3	3	29	30	21	22	23	24	25	26	27	28
4	4	39	40	31	32	33	35	35	36	37	38
5	5	49	50	41	42	43	44	45	46	38	48
6	6	59	60	51	52	53	45	55	56	39	58

7	7		69	70	61	62	63	64	65	66	67	69
8	8		79	80	71	72	73	74	75	76	77	78

The const_ps devtype is used only for the power supply modules which are located in the 2 left most slots in the chassis. All other devtypes are for modules located in slots 1-8 in the chassis.

2. To determine which snmind to use with modules wider than one slot, use the slot numbers associated with the connector on the back of the chassis. A double wide module will cover 2 slots but have only one connector. Example – If the double wide module covers slots 3 and 4, and the connector on the back of the module connects with slot 4, use the snmind for slot 4.

B. On line Add / Delete

The Hercules and Synchronous Constellation devtypes can not be added using the TNCS On-Line Add/Delete function

TNCS Graphics with SNMP devtypes

There is a custom graphic for the Synchronous Constellation chassis. It is described in the devlist example earlier in this bulletin. The Hercules does not have a Custom graphic, but it can still be displayed in an equipment rack view by first creating a “rack” group and then listing the Hercules as a device in that group. This is show in the example devlist also. If multiple Hercules devices need to be shown in a rack view, each Hercules will need to be listed in a separate group.