

PLANTSCAPE SERVER OPTIONS STATUS MONITORING

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SESSION OBJECTIVES

At the end of this section of the course the student will be able to:

- Display and interpret the Server Redundancy Status Summary
- Display and interpret Distributed Servers Status Summary
- Display and interpret Hybrid Controller Diagnostic Points

REFERENCES

Knowledge Builder: Server Configuration Guide

Knowledge Builder: Operator's Guide

Monitoring System Status

What Information is Available?

Station provides a number of pages which display the operating status of various components within the Plantscape Server.

These are:

- Channel Status Summary
- Controller Status Summary
- Station Status Summary
- Printer Status Summary
- Server Redundancy Status
- Distributed Servers Status (if optioned)
- Hardware Connections Summary
- Hybrid Controller Processor Status (PlantScape Process only)
- Hybrid Controller I/O Modules Status (PlantScape Process only)

Hardware item alarms may also be displayed in the Alarm Summary, the Alarm Line, and the Status Line.

Only cover Options here

The status of Channels, Controllers, Stations, and Printers, plus the Hardware Connections Summary have already been covered in earlier sections of this course.

In this section we will only cover the status of the options:

- Server Redundancy
- Distributed Server Architecture
- Hybrid Controller

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Redundant PlantScape Servers

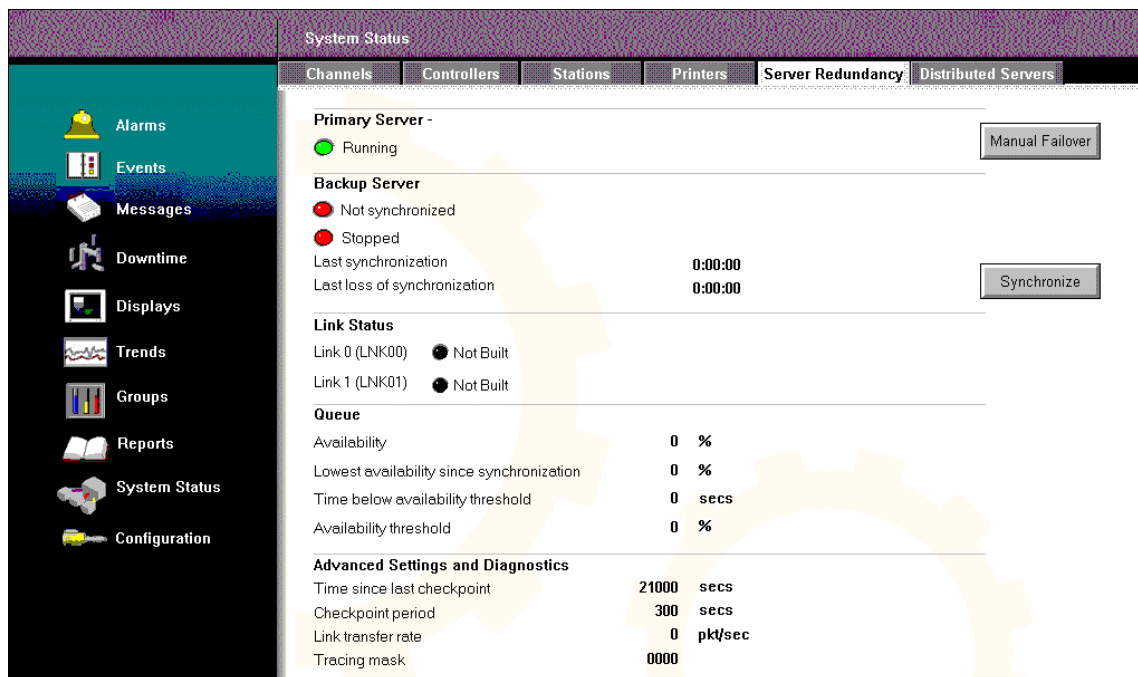
Server Redundancy Status

If the Server Redundancy option is being used its Status is displayed by choosing:

System Menu→System Status→Server Redundancy tab

or

View→System Status→Server Redundancy



Interpretation of Status Indications		
LED Colour	Status Text	Description
Green	Running Synchronised Link Available	Servers and Links OK
Red	Failed Not Synchronised Link Unavailable	Backup Server failed or not synchronised


Redundancy is covered in detail in the course
PlantScape Server Implementation - 2

Distributed PlantScape Servers

Distributed Servers Status

If the Distributed Server option is being used its Status is displayed by choosing:

System Menu→System Status→Distributed Servers tab

System Status			
Channels	Controllers	Stations	Printers
Server Redundancy			
Distributed Servers			
	Server Alias	Status	Type
1	server1a	<i>This Server</i>	
2	server2a	OK	 Single Server Single Network
3	-		
4	-		

Click on a remote Server's Alias:

Distributed Server 2 server2a			
Status	Configuration	Tuning	
Link Status			
Link		Status	
server2a		OK	
Connection Status			
Type	Status	Link Used	Last Reconnect
Data	OK	server2a	21-Oct-99 14:25:36
Notifications	OK	server2a	21-Oct-99 11:39:01
Statistics			
			Last Reset 07-Oct-99 8:32:17 Reset
Type	Total Reconnects	Total Received	Received per Second Avg Max
Data	19	7518	0.0 9.2
Notifications	18	1299	0.0 9.6
			Subscription Details
			0 (params)
			9 (areas)

There can be up to four Link Status indications depending on whether there are single or dual links to the remote Server, and whether the remote Server is a Redundant pair.

The Connection Status indicates which of the four possible Links are being used for Data and Notifications traffic, using the host file specifications to indicate the Link names.

Hybrid Controller

Overview

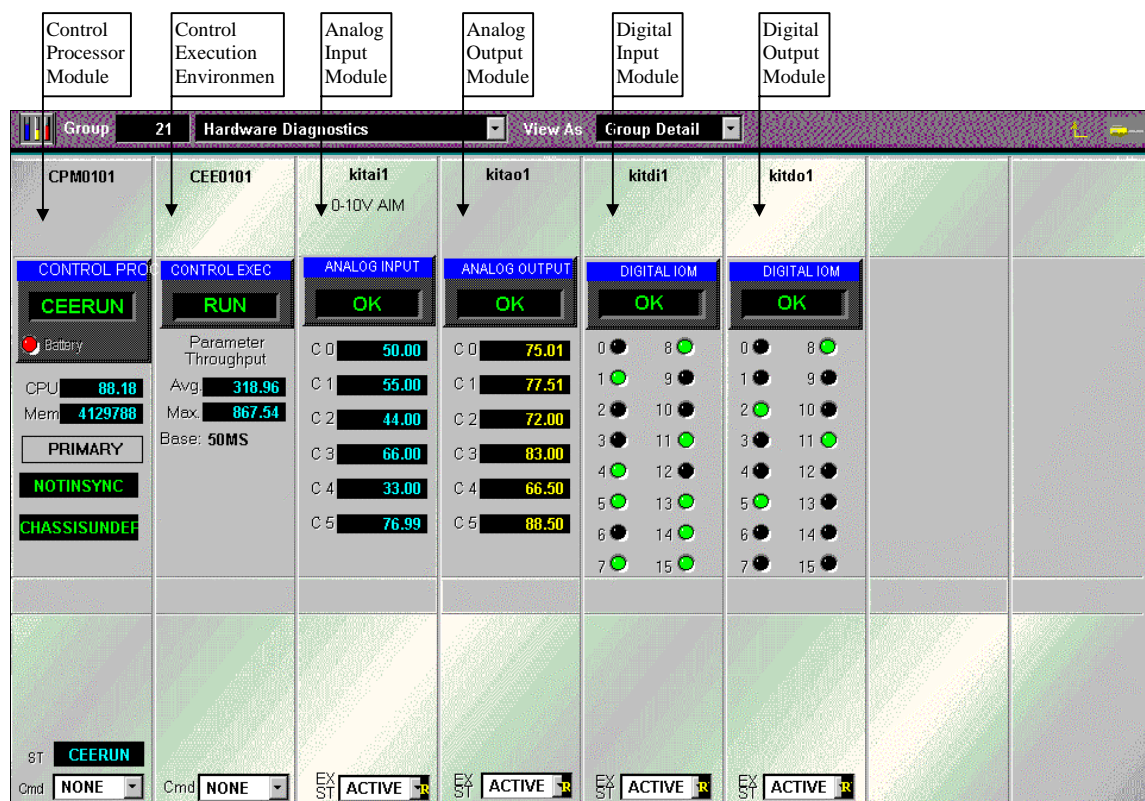
During the configuration of a Hybrid Controller certain points are created in the server that enable monitoring of the controller:

- there is a point to define the location of each Hybrid Controller connected to server through the Supervisory ControlNet
- there is a point to monitor the control software execution within each Hybrid Controller
- there is a point for each I/O Module within each Hybrid Controller and their Remote I/O racks.

Although each of these points can be monitored there is no specific page available. Instead the points can be viewed through the Group and Point Detail pages.

Preformatted Group and Point Detail display files are provided so that Group Details can be created as required. The Detail page for each point can be viewed using the standard methods.

A typical Group of these points is shown here:



Group Detail showing Hybrid Controller Hardware Points

continued on next page

Hybrid Controller.....continued

Control Processor Module Diagnostics

Control Processor Detail

Area CP

Main

CPM0101

CEERUN

Battery

PRIMARY

SYNC STATE

NOTINSYNC

Alarm

Execution & Control

CPM State CEERUN

CPM Command NONE

CEE State RUN

CEE Command NONE

Control Level 200

Control Confirmation

Memory & CPU

Percent CPU Free 84.35

Minimum CPU Free 48.83

Reset Statistics (Minimum CPU Free)

Total Memory 4421984

Current Memory Used 547892

Current Memory Free 3874092

Largest Free Memory Block Size 3874092

Alarm Information

Alarm Enable State Enabled

Redundancy

Hardware Redundancy Capability On

Chassis ID CHASSISUNDEF

Redundancy Sync State NOTINSYNC

Redundancy Delay (%) 0.00

Max Redundancy Delay (%) 0.00

Redundancy Traffic (Bytes/Sec) 0.00

Max Red. Traffic (Bytes/Sec) 0.00

Display Information

Point Detail Display sysDtlCPMA.dsp

Group Detail Display sysGrpCPMA.dsp

Associated Display

Control Processor Module Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→CPM

State

RUN	Processor running OK
CEEIDLE	CPM Database is loaded but CEE is not running.
Command	SHUTDOWN
	Halts CPM and deletes database. <div>Attention CPM cannot be restarted from this condition from Station</div>
Memory and CPU	% CPU Free
	Average CPU load available
	Current Memory Free
	Memory available for additional Control Modules and Sequence Control Modules to be loaded from Control Builder

Continued on next page

Hybrid Controller.....continued

Control Execution Environment Diagnostics

Control Execution Env. Detail Area CE

CEE0101

RUN

Base Period: 50MS

Main CPU Loading CPU Overruns

Execution & Control

CEE State **RUN**

CEE Command **NONE**

Control Level **200**

☐ Control Confirmation

Display Information

Point Detail Display **sysDtlCEEA.dsp**

Group Detail Display **sysGrpCEEA.dsp**

Associated Display **-----**

CPU Availability Summary

Average CPU Free (%) **88.1764**

Minimum CPU Free (%) **52.6163**

CPU Overrun Summary

Total CPU Overruns This Hour **0**

Total CPU Overruns Last Hour **0**

CEE-To-Server Communication

Average Param. Throughput/Sec. **337.93**

Max Param. Throughput/Sec. **867.54**

Peer-To-Peer Communication

Peer Comm. Update Period **500MS**

Peer Data Requests/Second **0.00**

Average Peer SCM Outputs / Sec. **0.00**

Max Peer SCM Outputs / Second **0.00**

Alarm Information

Alarm Enable State **Enabled**

Control Execution Environment Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→CEE

State

RUN	All Controller tasks running OK
IDLE	CPM Database is loaded but CEE is not running.

Command

RUN	Commands the CEE State from Idle to Run.
IDLE	Commands the CEE State from Run to Idle.

Communication

Avg Parameter Throughput	Average number of parameters per second being passed to the server
--------------------------	--

CPU Availability

Avg CPU Free	Average CPU load available (total)
Current Memory Free	Memory available for additional Control Modules to be loaded from Control Builder

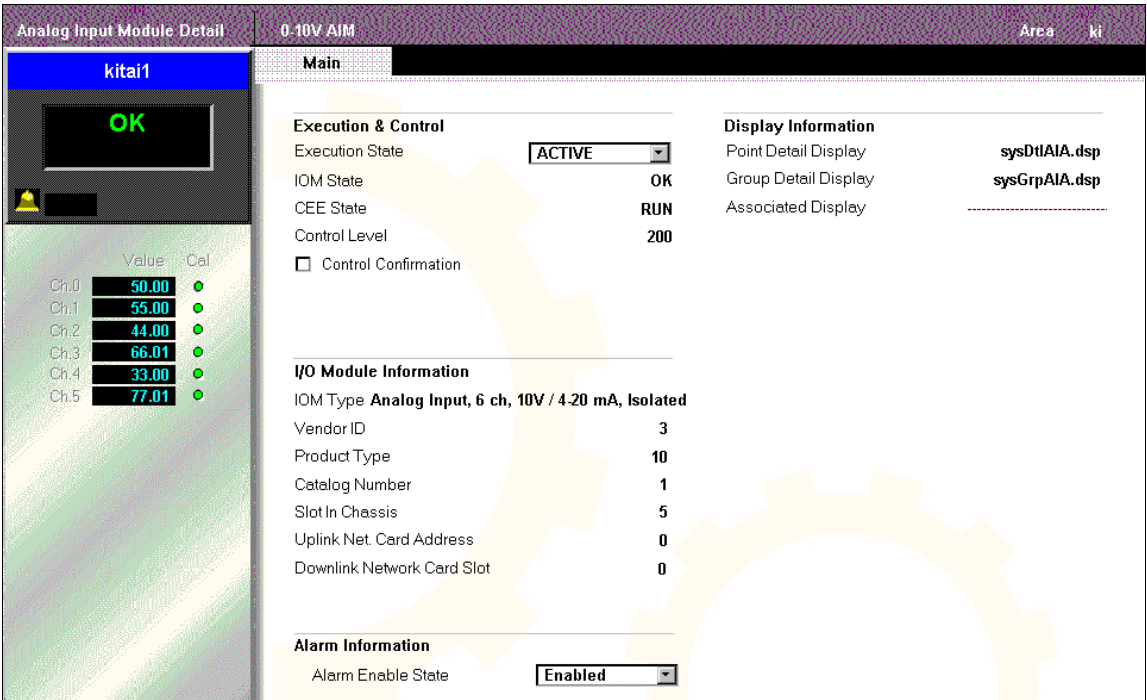
CPU Loading

CPU loading per phase

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Hybrid Controller.....continued

Analog Input Module Diagnostics



Analog Input Module Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→IOM

State

OK	Module scanning inputs OK
INACTIVE	Module not scanning its inputs.
ACTIVE	Commands the Module to ACTIVE state.
INACTIVE	Commands the Module to INACTIVE state.
Raw Input Values	Raw input value on each channel

continued on next page

Hybrid Controller.....continued

Analog Output Module Diagnostics

Analog Output Module Detail

Area ki

kitao1

OK

	Value	Cal
Ch.0	75.01	●
Ch.1	77.51	●
Ch.2	72.00	●
Ch.3	83.00	●
Ch.4	66.50	●
Ch.5	88.50	●

Main

Execution & Control

Execution State

ACTIVE

IOM State

OK

CEE State

RUN

Control Level

200

☐ Control Confirmation

Display Information

Point Detail Display

sysDtlAOA.dsp

Group Detail Display

sysGrpAOA.dsp

Associated Display

I/O Module Information

IOM Type

Analog Output, 6 ch, 10V, Isolated

Vendor ID

3

Product Type

10

Catalog Number

3

Slot In Chassis

9

Uplink Net. Card Address

0

Downlink Network Card Slot

0

Alarm Information

Alarm Enable State

Enabled

Analog Output Module Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→IOM

State

OK	Module updating outputs OK
INACTIVE	Module not updating its outputs.

Command

ACTIVE	Commands the Module to ACTIVE state.
INACTIVE	Commands the Module to INACTIVE state.

Output Values

Value being presented to the DAC on each channel
--

Continued on next page

Hybrid Controller.....continued

Digital Input Module Diagnostics

Digital Input Module Detail

kitdi1

OK

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Main

Channels

Execution & Control

Execution State

ACTIVE

IOM State

OK

CEE State

RUN

Control Level

200

☐ Control Confirmation

Display Information

Point Detail Display

sysDtIDIA.dsp

Group Detail Display

sysGrpDXA.dsp

Associated Display

I/O Module Information

IOM Type

Digital Input, 16 ch, 24V DC, Isolated

Vendor ID

3

Product Type

7

Catalog Number

6

Slot In Chassis

2

Uplink Net. Card Address

3

Downlink Network Card Slot

3

Alarm Information

Alarm Enable State

Enabled

Digital Input Module Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→IOM

State

OK	Module scanning inputs OK
----	---------------------------

INACTIVE	Module not scanning its inputs.
----------	---------------------------------

Command

ACTIVE	Commands the Module to ACTIVE state.
--------	--------------------------------------

INACTIVE	Commands the Module to INACTIVE state.
----------	--

Current Values

Status indication of each input channel

continued on next page

Hybrid Controller.....continued

Digital Output Module Diagnostics

Digital Output Module Detail

kitdo1

OK

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

MainChannels

Execution & Control

Execution State

ACTIVE

IOM State

OK

CEE State

RUN

Control Level

200

☐ Control Confirmation

I/O Module Information

IOM Type

Digital Output, 16 ch, 24V DC, Isolated

Vendor ID

3

Product Type

7

Catalog Number

7

Slot In Chassis

6

Uplink Net. Card Address

3

Downlink Network Card Slot

3

Alarm Information

Alarm Enable State

Enabled

Display Information

Point Detail Display

sysDtlDOA.dsp

Group Detail Display

sysGrpDXA.dsp

Associated Display

Digital Output Module Diagnostics

Summary of Information

For more detailed information refer to
Knowledge Builder: Function Blocks→IOM

State

OK	Module updating outputs OK
----	----------------------------

INACTIVE	Module not updating its outputs.
----------	----------------------------------

Command

ACTIVE	Commands the Module to ACTIVE state.
--------	--------------------------------------

INACTIVE	Commands the Module to INACTIVE state.
----------	--

Current Values

Status indication of each output channel
--

Lab Exercise - Hardware Monitoring

Hybrid Controller

This exercise will demonstrate the use of Group and Point Detail displays to check the operation of a Hybrid Controller

Step	Action
1	<p>Display Group 9.</p> <p>This has been configured to include the main Hybrid Controller processor monitoring points, CPM0101 and CEE0101.</p> <p>Check the statistics that these points provide.</p>
2	<p>In addition Group 9 includes a point for each of the analog I/O modules that are mounted in the processor rack.</p> <p>Check the statistics that these points provide.</p>
3	<p>Display Group 10 which includes a point for each of the digital I/O modules that are mounted in the remote I/O rack.</p> <p>Check the statistics that these points provide.</p>