

PacsAnalyzer 4.3

Date: July 2020

PacsAnalyzer is the preferred tool used to collect PLC Module Information, Fault tables, and Station Manager Ethernet Data.

PacsAnalyzer is compatible with following CPUs:

- All PACs CPUs (RX3i and RX7i) and RX3i ENIU.
- RXi controller (ICRXICTL000)
- RSTi-EP Controller (EPSCPE100/115)
- Series 90-70 CPU's
- Series 90-30, including CPU374/372
- VersaMax modular PLC and Nano/Micro (Ethernet data collection not supported)

Ethernet and Serial connections are supported. The default connection to the PLC will be over Ethernet, but if user chooses to connect serially instead, ONLY module info/fault tables will be collected. The station manager Ethernet data collection (ETM Analysis) will not be collected when the tool is executed over serial connection to the PLC CPU that supports serial connections.

PacsAnalyzer 4.3 Communication	. 13 . 113	net Setup	thernet Module Analysis	d IP addresses
	L O Serial			
Module Info Get Details Rack: Main Slot: ALL	Fault Tables PLC C Ascending E Descending	- Other Info Force Tables	Trend Info	✓ Sec ✓ Min
	2080067641 Downloadet Pace	Analyzer0615200 Package to	t Descent	Start Trend
Log File: C:\Users	Public\Documents\Emerson\	PacsAnalyzer\TrendLog.cs	Browse	Clear Log
				Set Clock
Status Log				Controller I
				File Analyze
				<u>G</u> et Data

PacsAnalyzer is available as a standalone tool and can be downloaded here: <u>https://emerson-</u>mas.force.com/communities/en_US/Download/PacsAnalyzer-Utility

PacsAnalyzer is also included with PAC Machine Edition and can be found under the Utilities option.

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Note: PME will be updated to include version 4.3 starting with 9.50 SIM 22, 9.70 SIM 4, and 9.80 SIM 4

Standard Diagnostic Collection

We always recommend collecting diagnostic data using PacsAnalyzer. This is the preferred method for sharing fault information with our technical support team.

1. Launch PacsAnalyzer, enter in direct IP address and define output path filename.

• For PACSystems redundancy systems, if redundant IP is enabled, DO NOT enter in the redundant IP address.

PacsAnalyzer 4.3	Ν		_	
Communication IP Address: 10 . 73 .	13 . 113 G Ethernet	Setup F	nernet Module Analysis ETM Analysis Ad	d IP addresses
PLC Statistics Module Info Get Details Rack: Main v Slot: ALL v	Fault Tables PLC V I/O Ascending C Descending	-Other Info	Trend Info	✓ Sec✓ Min
File Info Output File: C\Paclog.b Log File: C\Users\Pu	t iblic\Documents\Emerson\Pad	csAnalyzer(TrendLog.csv	Browse	Start Trend Clear Log Set Clock
- Status Log				Controller ID File Analyzer
				<u>G</u> et Data <u>E</u> xit

2. By default, all options are selected (excluding Trend) and greyed out. Do not change these options.

PacsAnalyzer 4.3 -	
Communication IP Address: 10 - 73 - 13 - 113 C Serial Ethernet Ethernet Ethernet Ethernet Ethernet Ethernet Ethernet Ethernet Ethernet Etheret Ethernet Ethernet Ethernet Ethernet	Id IP addresses
PLC Statistics Fault Tables Other Info Trend Info If Get Details If PLC I/O Force Tables Trend Scan Rate: Rack: Main Image: Comparison of the comparison of	Sec
File Info Output File: C1/Paclog.txt Browse Log File: C1/Users\Public\Documents\Emerson\PacsAnalyzer(TrendLog.csv Browse	Start Trend Clear Log Set Clock
	Controller ID File Analyzer
	<u>G</u> et Data <u>E</u> xit

 If there are additional Ethernet modules in the same CPU rack and on the same network, choose "Add IP addresses", then enter in IP address of those modules. Select Setup > Advanced > OK to enable this option.

III PacsAnalyzer 4.3			—		\times
Communication IP Address: 10 . 73 . 13 . 113 A C Serial	Setup	Ethernet Module Anal	ysis Add If	² addresse:	5

4. Click "Get Data" to begin data collection



5. Wait for the tool to finish data collection. When the tool is finished collecting data an output txt file will then be displayed as per example below. Send back this file to technical support for analysis.

Sample (partial) Output File:

/ Pacl	_og.txt - Notepad							—	\times
File Edi PacsAr Report Short Full t Host Contro Sweep Reduce	t Format View Help nalyzer 4.3 t for PLC at 192 target name: SUU target name: SUW PC Date/Time: oller Date/Time: oller State: Run time: 6.5 msec dancy State: Sim	.168.0.10 W_POL _POLSKACE 06-29-20 06-29-20 Enabled plex	, CPU: PA REKIEW1 20 12:51:0 20 12:49:4	CSystems RSTi 5 2	. CPE100,	FW: 9.85			^
#####	*****	#######	MODULE INF	O for RACK Ø	#######	****			
SLOT 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	MODEL EPSCPE100 IC695EFM001 	PRIMARY 9.85 [EC: 9.85 [EC:	FW BO 3E] 3E]	DT FW	HW 2.00 2.00	SERIAL P965045 P965045	DATE 17JUN2019 17JUN2019	CATALOG EPSCPE100-ABAF EPSCPE100-ABAF	
#####	*****	########	PLC FAULT	TABLE #####	*****	*****			~

Network and Memory Performance Monitoring Tool

Using PacsAnalyzer 4.3, you can now actively monitor system memory usage and system network performance statistics. This feature will help optimize CPU model selection, reduce troubleshooting time for application commissioning, monitor network statistics, and memory performance during operation.

This feature is supported on the following products: EPSCPE100, EPSCPE115, IC695CPE302, IC695CPE305, IC695CPE310, IC695CPE330, IC695CPE400, IC695CPL410, IC695ETM001

Beginning with firmware version 10.05 or later on the CPUs, and 7.05 or later on the ETM, two new station manager commands are supported –

- Trend h (header information)
- Trend d (data)

The output of these commands is shown below in comma separated format.

□ trend h

PcTime,PlcTime,CatalogNum,SerialNum,FwVer,BuildId,FreeBytesInPart,FreeBlksInPart,MaxFr eeBlkSize,AllocBytesInPart,AllocBlksInPart,SystemHeapSize,SysHeapTotalBlks,SharedHeapAv ail,SharedHeapLargeAlloc,SharedHeapUse,SrtpConn,MbusConn,LAN1MbufFree,LAN1MbufUs e,LAN2MbufFree,LAN2MbufUse,EthP1Off,EthP2Off,EthP3Off,EthP4Off,pktRate[LAN1],max_pk t_rate[LAN1],pktRate[LAN2],max_pkt_rate[LAN2],

□ trend d

16-JUN-2020 09:39:28.0,16-JUN-2020 09:39:28.0,EPSCPE115-AAAA,CPE115,10.05,00X1,2561420,90,1052624,164835780,18706,167397200,18796,209100 8,1048576,6144,0,0,255,793,255,131,2,0,0,0,8,58,16-JUN-2020 09:39:26.0,0,0,01-JAN-1970 00:00:00.0

PacsAnalyzer 4.3 will generate a CSV file with this data.

	A	В	С	D	E	F	G	Н	1	J
1	PcTime	PlcTime	CatalogNum	SerialNum	FwVer	BuildId	FreeBytes	FreeBlksIn	MaxFreeB	AllocBytes
2	6/29/2020 14:01	6/29/2020 13:59	EPSCPE100-ABAE	P994173	10.05	EEDJ	3084356	87	1052624	1.78E+08
3	6/29/2020 14:02	6/29/2020 14:00	EPSCPE100-ABAE	P994173	10.05	EEDJ	3027920	84	1052624	1.78E+08

In summary – all comma separated parameters in trend h are the diagnostics available to the user. The data is collected using the trend d command.

- Monitoring of allocated bytes, blocks, maximum free size in memory partition
- Monitoring of System Heap
- Number of SRTP and Modbus connections to the system
- Monitoring of LAN1, LAN2, and memory buffers
- Monitoring of Link Up/down parameters
- Monitoring of maximum packet rate at each ethernet interface along with timestamp

PacsAnalyzer Version 4.3 is required to take advantage of this enhancement.

https://emerson-mas.force.com/communities/en_US/Download/PacsAnalyzer-Utility

To use the data collection Trend feature:

- Click Setup
- Select Advanced
- Click OK

PacsAnalyzer 4.3	
Communication IP Address: 10 . 73 . 13 . 113 C Serial	ith
PLCS PacsAnalyzer Setup	ł
Re Comm Port Baud Rate Parity OK 19200 ▼ OK Comm Comm Port Cancel	
S Mode	
File Ir Auto-Set PLC Clock	
,	_

- Set the log file location and CSV name
- Check the Trend option
- Set the Scan Rate (frequency of data collection)
- Set the Duration (total time to collect data)
- Click Start Trend

PLC Statistics				
Module Info	Fault Tables	Other Info	Trend Info	
🔲 Get Details	PLC I/O	Force Tables	Trend	
Rack: Main 💌	C Ascending		Scan Rate: 60	🖌 Sec
Slot: ALL	Descending		Duration: 60	➡ Min
File Info				Start Trond
Output File: C:\Paclog.tx	Browse	Start Hellu		
Log File: C:\Users\Pu	Browse	Clear Log		
				Set Clock

When the Duration expires, the CSV file is generated.

Note: you can also set the Duration to "CONTINUE" – data collection will continue until you click Stop Trend.

When using the Trend feature, only one (1) IP Address is permitted. If additional IP Addresses are entered in the tool, an error will appear in the CSV file.

This is only a limitation with the Trend feature. Multiple IP Addresses are permitted when using the "Get Data" function to gather module info, fault tables, and station manager data.

PacsAnalyzer 4.3				_	
Communication IP Address: 10 . 73	. 13 . 113	Ethernet Setup	Ethernet Module A	Analysis Add I	^D addresses
PLC Statistics				_	
Module Info	IP Addresses to	r ETM Modules	×	nfo	
🔲 Get Details	-			Trend	
Rack: Main 🔻	IP Address 1:	10 . 73 . 13 . 113	ОК	Rate: 60	✓ Sec
Slot: ALL	IP Address 2:	0.0.0.0	Cancel	tion: 60	✓ Min
	IP Address 3:	0.0.0.0		-	
File Info	IP Address 4:	0.0.0.0	Reset		Oto the True of
Output File: C:\Paclog	IP Address 5:	0.0.0.0)	wse	Start Frend
Log File: C:\Users\	IP Address 6:	0.0.0.0	,	wse	Clear Log
_Status Log	IP Address 7:	0.0.0.0			Set Clock
	IP Address 8:	0.0.0.0			Controller ID
	IP Address 9:	0.0.0.0			File Analyzer
	IP Address 10:	0.0.0.0			<u>G</u> et Data
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If you need assistance, one of our experienced support engineers can help. Contact Info: <u>https://emerson-mas.force.com/communities/CC_Contact</u>