PacsAnalyzer

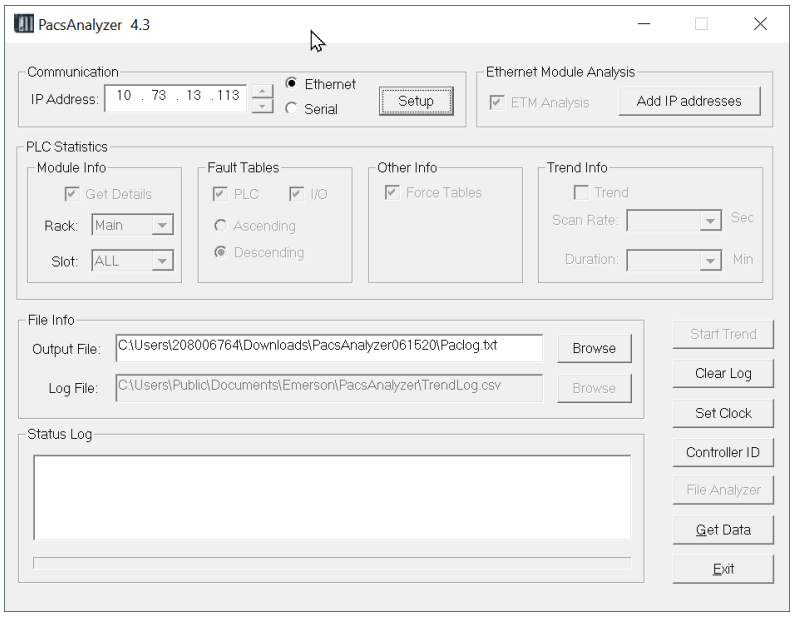
Date: July 2020

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

PacsAnalyzer is compatible with following CPUs:

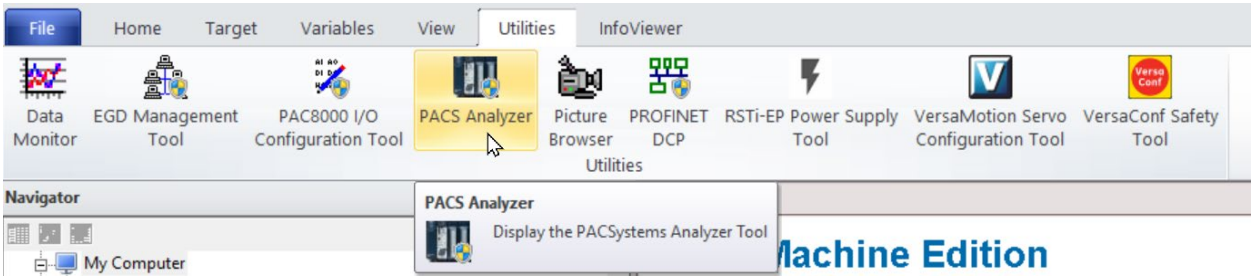
- All PACs CPUs (RX3i and RX7i) and RX3i ENIU.
- RXi controller (ICRXICTL000)
- RSTi-EP Controller (EPSCPE100/115)
- Series 90-70 CPU's
- Series 90-30, including CPU374/372
- VersaMax modular PLC and Nano/Micro (Ethernet data collection not supported)

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 is available as a standalone tool and can be downloaded here: https://emerson-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.

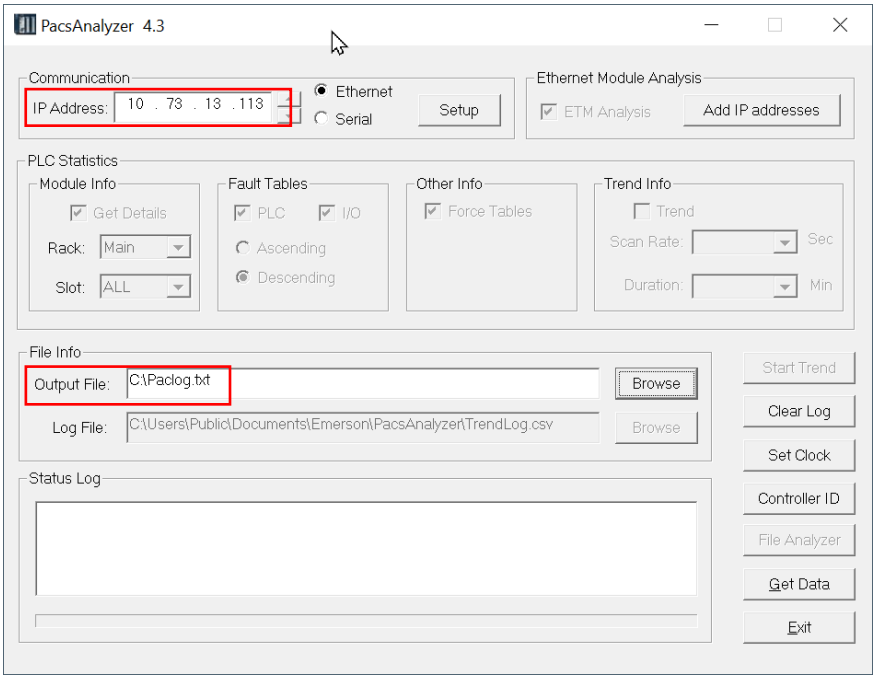


Note: PME will be updated to include version 4.3 starting with 9.50 SIM 22, 9.70 SIM 4, and 9.80 SIM 4

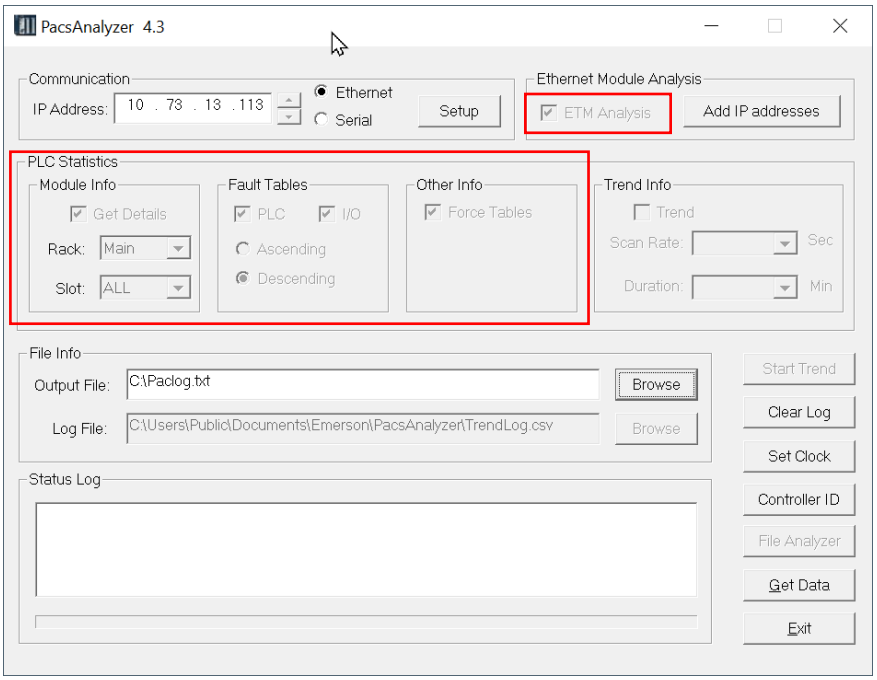
Standard Diagnostic Collection

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

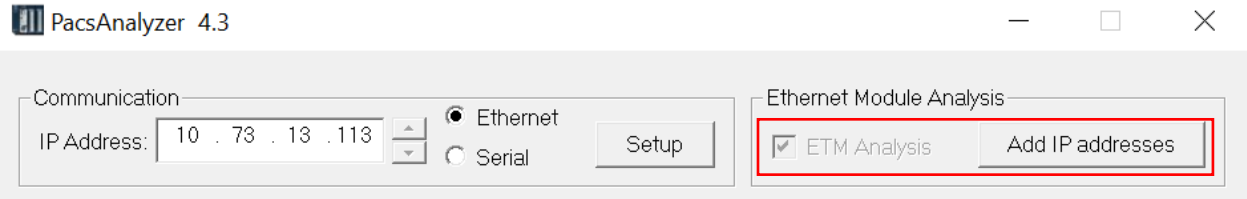
1. Launch PacsAnalyzer, enter in direct IP address and define output path filename.
    - **For PACSystems redundancy systems, if redundant IP is enabled, DO NOT enter in the redundant IP address.**



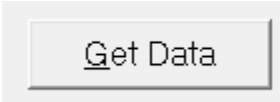
2. By default, all options are selected (excluding Trend) and greyed out. Do not change these options.



3. 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.

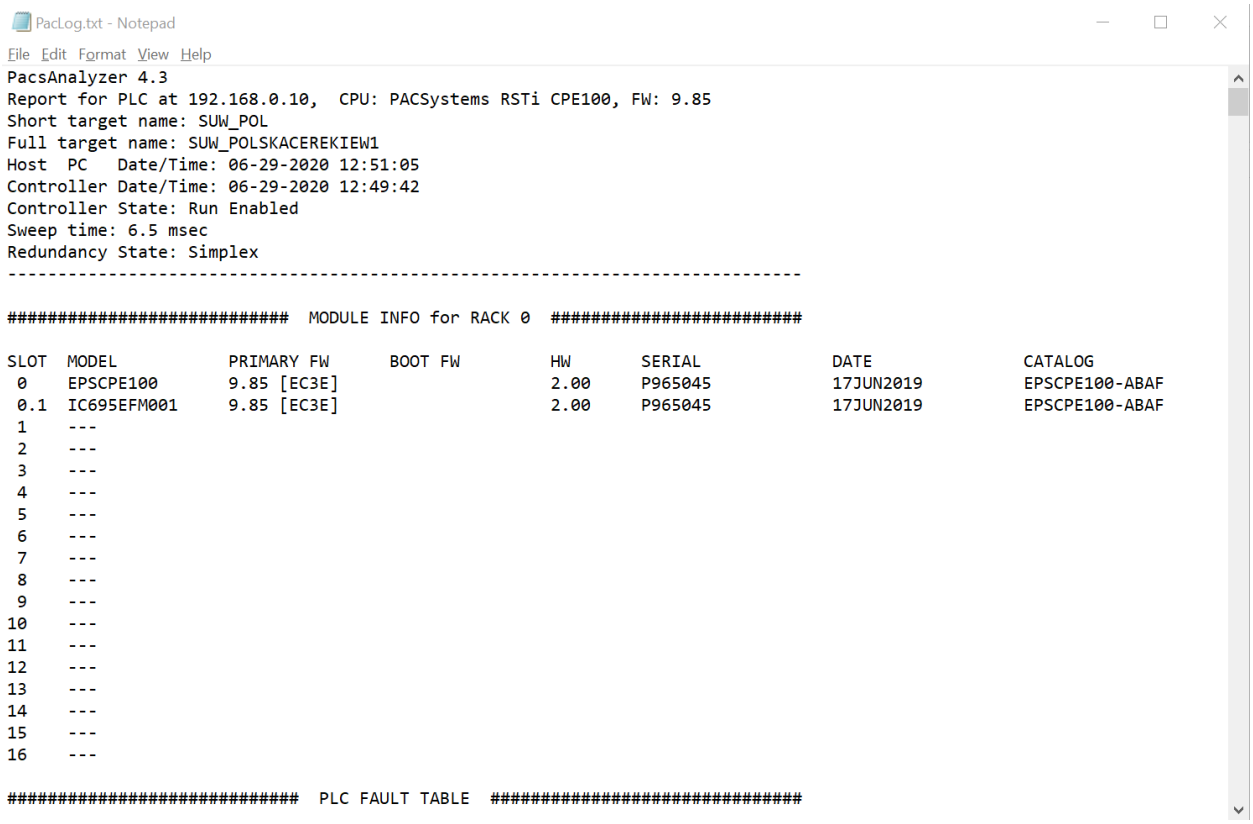


4. Click “Get Data” to begin data collection



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:



PacLog.txt - Notepad

File Edit Format View Help

```
PacsAnalyzer 4.3
Report for PLC at 192.168.0.10,  CPU: PACSystems RSTi CPE100, FW: 9.85
Short target name: SUW_POL
Full target name: SUW_POLSKACEREKIEW1
Host  PC   Date/Time: 06-29-2020 12:51:05
Controller Date/Time: 06-29-2020 12:49:42
Controller State: Run Enabled
Sweep time: 6.5 msec
Redundancy State: Simplex
--------------------------------------------------------------------------------

############################  MODULE INFO for RACK 0  ########################

SLOT  MODEL           PRIMARY FW      BOOT FW         HW       SERIAL            DATE              CATALOG
 0    EPSCPE100       9.85 [EC3E]                     2.00     P965045           17JUN2019         EPSCPE100-ABAF
 0.1  IC695EFM001     9.85 [EC3E]                     2.00     P965045           17JUN2019         EPSCPE100-ABAF
 1    ---
 2    ---
 3    ---
 4    ---
 5    ---
 6    ---
 7    ---
 8    ---
 9    ---
10    ---
11    ---
12    ---
13    ---
14    ---
15    ---
16    ---

############################  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,MaxFreeBlkSize,AllocBytesInPart,AllocBlksInPart,SystemHeapSize,SysHeapTotalBlks,SharedHeapAvail,SharedHeapLargeAlloc,SharedHeapUse,SrtpConn,MbusConn,LAN1MbufFree,LAN1MbufUse,LAN2MbufFree,LAN2MbufUse,EthP1Off,EthP2Off,EthP3Off,EthP4Off,pktRate[LAN1],max_pkt_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,CPE115,10.05,00X1,2561420,90,1052624,164835780,18706,167397200,18796,2091008,1048576,6144,0,0,255,793,255,131,2,0,0,0,8,58,16-JUN-2020 09:39:26.0,0,0,0,01-JAN-1970 00:00:00.0

PacsAnalyzer 4.3 will generate a CSV file with this data.

	A	B	C	D	E	F	G	H	I	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.

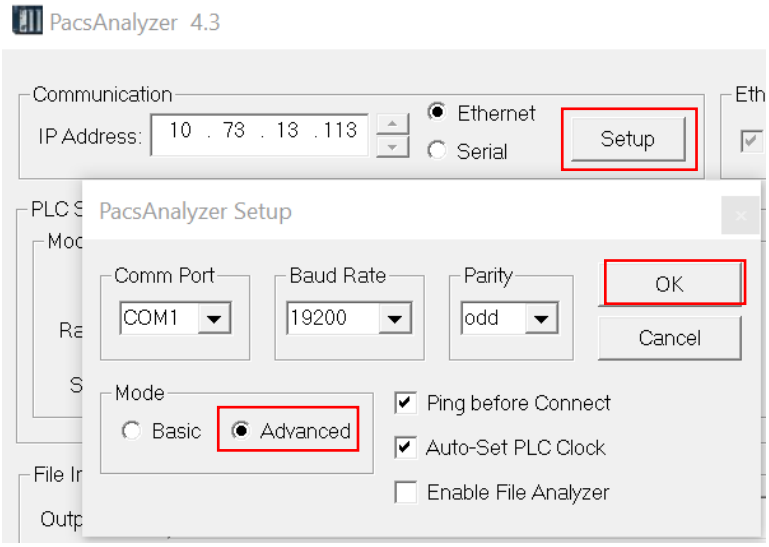
- Monitoring of allocated bytes, blocks, maximum free size in memory partition
- Monitoring of System Heap
- Number of SRTP and Modbus connections to the system
- Monitoring of LAN1, LAN2, and memory buffers
- Monitoring of Link Up/down parameters
- Monitoring of maximum packet rate at each ethernet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



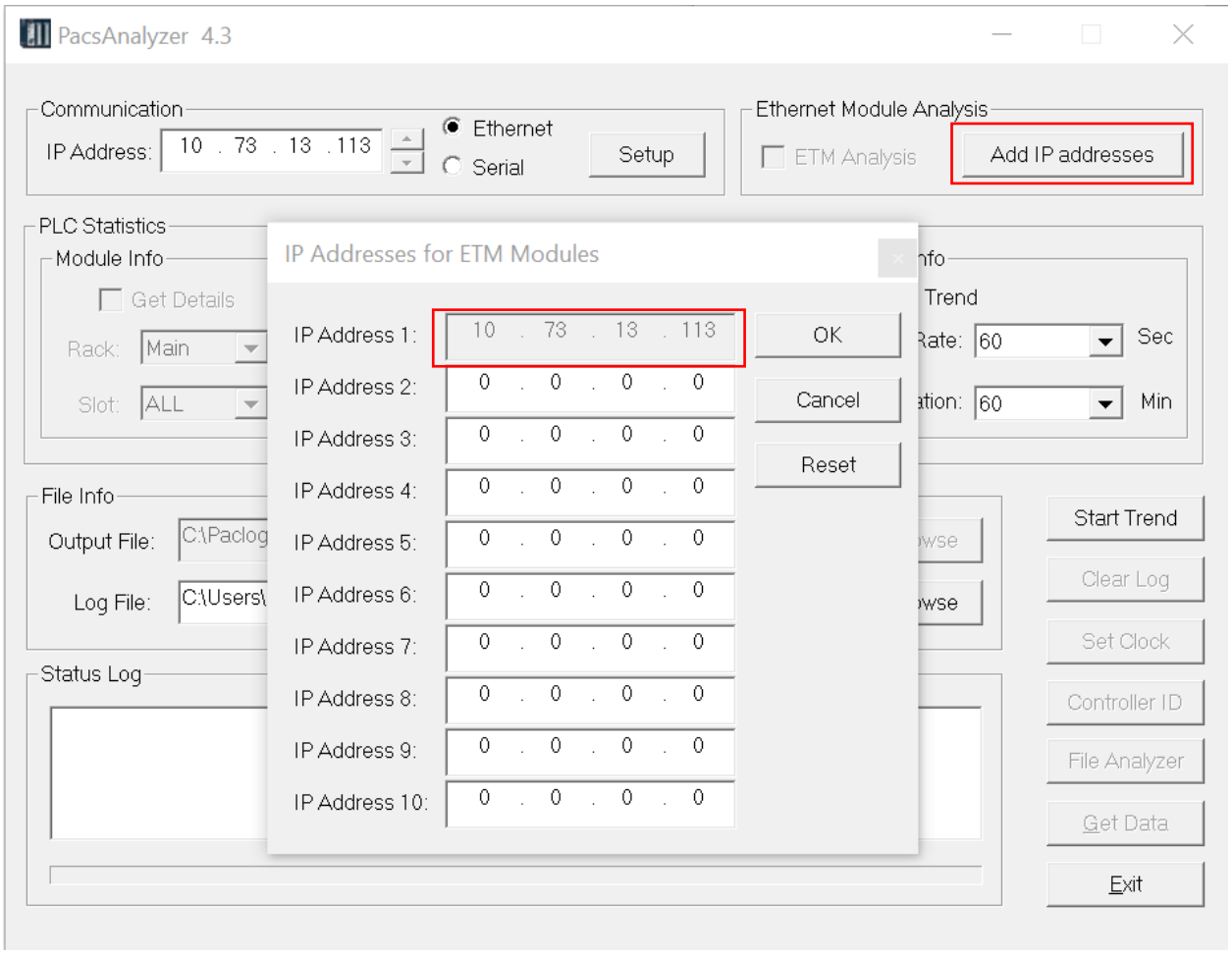
- Set the log file location and CSV name
- Check the Trend option
- Set the Scan Rate (frequency of data collection)
- Set the Duration (total time to collect data)
- Click Start Trend

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.



If you need assistance, one of our experienced support engineers can help.

Contact Info: https://emerson-mas.force.com/communities/CC_Contact