How To Enable NEW JIT LOG On EKI-122x Series

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How To Enable The New JIT Log

- ## System > Modbus Settings

- In the Modbus Settings under System page, uncheck the option "Modbus Legacy Mode" to enable the new working model of Modbus Gateway for Server Mode or Client Mode.
  With the new working model, JIT log is also working in a new way.

- With the new working model, users no longer required to configure the Device Name to ENABLE_JIT_DIAG.
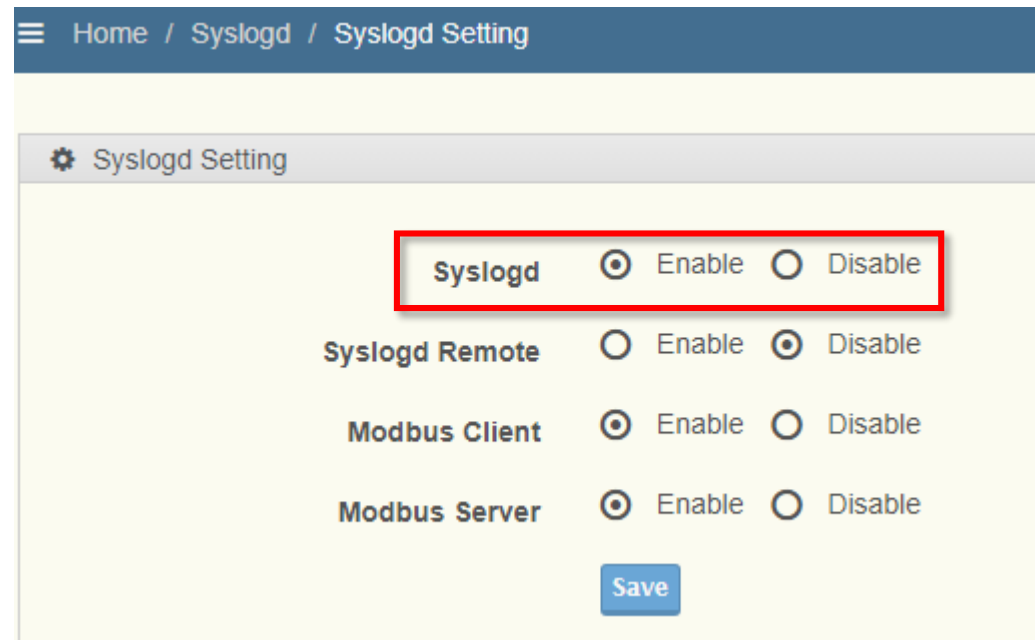 Just keep it as is.

To Show The New JIT Log

- **Syslogd > Syslogd Settings**

  Same as the JIT log before.

  To show the JIT Log In the Modbus Messages window under Syslogd, set Enable the option "Syslogd" to make it effective. Otherwise, the selected options for JIT will never be printed.
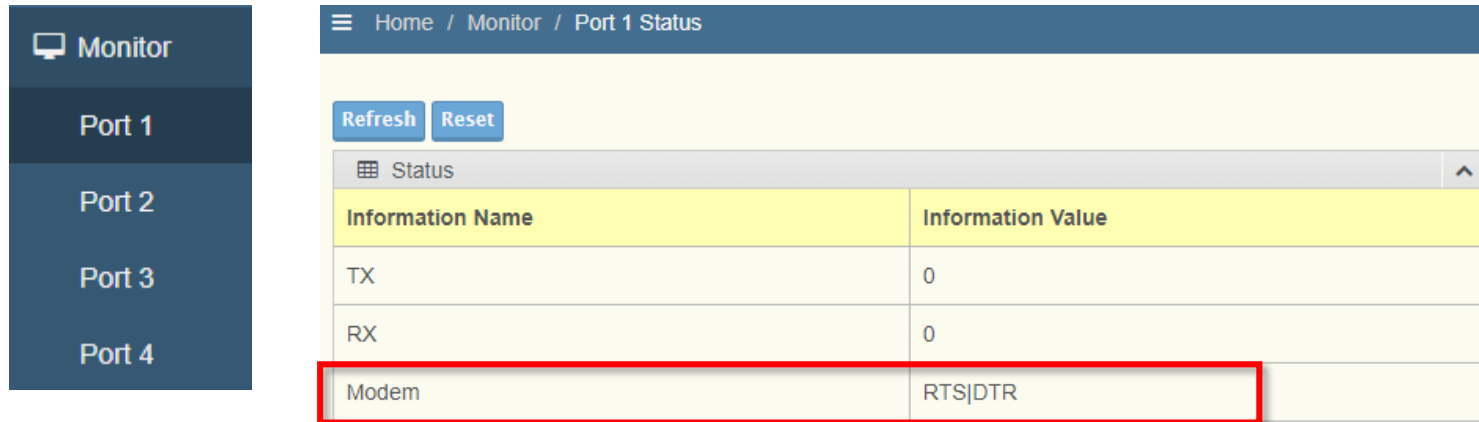
New Monitor & JIT Log – COM Port Server Mode (1/3)

- ## Monitor > Port N (Modbus Server Mode)

  In the Monitor page of the COM Port, the webpage has lots of differences compare with the legacy mode.

  - ### Modem Status

    The Modem Status can be seen here. Signal which is currently ON will be listed, like RTS/CTS/DTR/DSR.
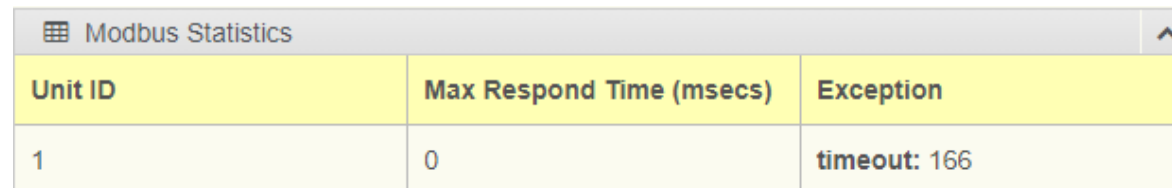
  - ### Modbus Statistics

    The max. response time measurement is moved from Syslog to Monitor. Users can check the actual **max. response time** of the Modbus Nodes, and adjust the timeout parameters accordingly.
    And, if there's a exception code found, the counter will also increased.

New Monitor & JIT Log – COM Port Server Mode (2/3)

- ## Monitor > Port N (Modbus Server Mode)

  The JIT options are more detailed in the new model.

  - ### Just-In-Time Diagnostic

    Select the required options to print them in the Syslodg Message page.
    serial are for raw bytes, and modbus are for parsed commands and responses

  - ### JIT Dump Length

    To define the length of the raw data to be printed in the **Syslogd Message** window.
    Default length is 12 bytes; if then content within the raw data is longer than that, oversized part will not be printed.

    - ■ If you don't know what option should be checked, select them all to show all the information.

Just-In-Time Diagnostic

serial	☐ JIT_SER_RX ☐ JIT_SER_TX ☐ JIT_SER_RXRAW
modbus	☐ JIT_MBUS_RESP ☐ JIT_MBUS_CMD

JIT Dump Length

TX	12	(1 - 1024)
RX	12	(1 - 1024)

The JIT options will take effect right after Save. Device reboot will clear the options.

Home / Syslogd / Syslogd Message

Syslogd Message

Filter [ ] Apply ☑ Scroll Down

Aug 23 08:21:26 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_MBUS_CMD")client31:cmd.uid(1).read_holding_registers.addr(1).len(2)
Aug 23 08:21:26 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_TX")client31:tx(8/8)bytes:01 03 00 01 00 02 95 cb
Aug 23 08:21:27 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_RXRAW")client31:rx 9 bytes:01 03 04 3c e5 3c e4 f6 df
Aug 23 08:21:27 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_RX")client31:rx 9 bytes:01 03 04 3c e5 3c e4 f6 df
Aug 23 08:21:27 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_MBUS_RESP")client31:resp.uid(1).read_holding_registers.byte_cnt(4)
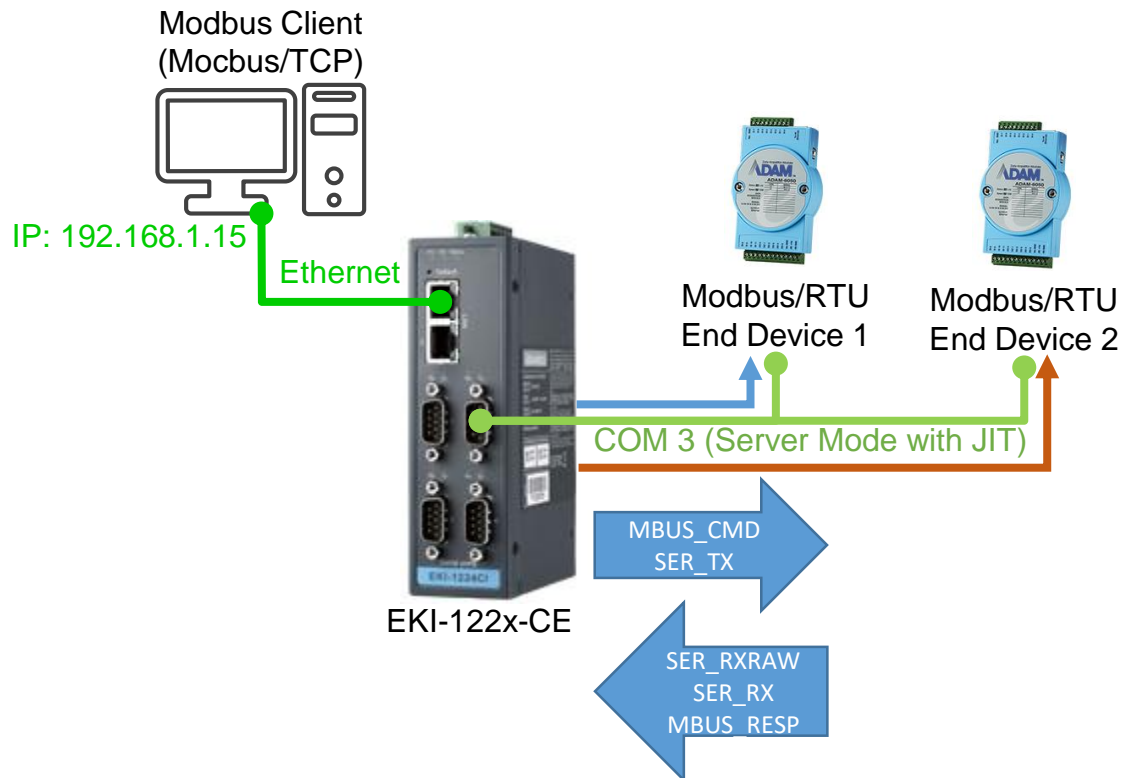
If the raw data here exceed the Dump Length, only first N Bytes will be printed.

New Monitor & JIT Log – COM Port Server Mode (3/3)

- ## Monitor > Port N (Modbus Server Mode)

  In the Monitor pages, the JIT options are for this specific COM Port, no matter where the commands come from. Note that the Logs here actually contains no Ethernet side information.

  Ex. Modbus/TCP Client to 2 Modbus/RTU End Devices on COM Port 3, with JIT enabled on COM 3.

Modbus Client
(Mocbus/TCP)

IP: 192.168.1.15

Ethernet

Modbus/RTU
End Device 1

Modbus/RTU
End Device 2

COM 3 (Server Mode with JIT)

EKI-122x-CE

MBUS_CMD
SER_TX

SER_RXRAW
SER_RX
MBUS_RESP

Log will show information between:
- ✓ Modbus Client ←→ End Device 1 (COM 3)
- ✓ Modbus Client ←→ End Device 2 (COM 3)

```
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_CMD")client31:cmd.uid(1).read_holding_registers.addr(0).len(10)
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_TX")client31:tx(8/8)bytes:01 03 00 00 00 0a c5 cd
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RXRAW")client31:rx 25 bytes:01 03 14 51 17 00 00 00 00 00 00 00 00
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RX")client31:rx 25 bytes:01 03 14 51 17 00 00 00 00 00 00 00 00
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_RESP")client31:resp.uid(1).read_holding_registers.byte_cnt(20)
```

```
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_CMD")client31:cmd.uid(2).read_holding_registers.addr(0).len(10)
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_TX")client31:tx(8/8)bytes:02 03 00 00 00 0a c5 fe
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RXRAW")client31:rx 25 bytes:02 03 14 00 00 00 00 00 00 00 00 00 00
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RX")client31:rx 25 bytes:02 03 14 00 00 00 00 00 00 00 00 00 00
Sep 12 08:32:56 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_RESP")client31:resp.uid(2).read_holding_registers.byte_cnt(20)
```

*With all JIT options on Monitor page selected

New Monitor & JIT Log – COM Port Client Mode (1/2)

- ## Monitor > Port N (Modbus Client Mode)

  Similar to the format seen when the COM Port is set to Server Mode, with few more options in the Client Mode.

  - ### Just-In-Time Diagnostic

    Select the required options to print them in the Syslodg Message page. Available options includes the serial, tcp and modbus categories. Options for tcp are mainly for the data sent by the COM Port.

  - ### JIT Dump Length

    To define the length of the raw data to be printed in the **Syslogd Message** window.
    Default length is 16 bytes; if then content within the raw data is longer than that, oversized part will not be printed.

    - If you don't know what option should be checked, select them all to show all the information.

Just-In-Time Diagnostic

serial	☐ JIT_SER_RX ☐ JIT_SER_TX
tcp	☐ JIT_TCP_XMIT ☐ JIT_TCP_RECV ☐ JIT_TCP_CONN
modbus	☐ JIT_MBUS_RESP ☐ JIT_MBUS_CMD ☐ JIT_MBUS_ROUTE ☐ JIT_MBUS_EXCP

JIT Dump Length

TX [16] (1 - 1024)
RX [16] (1 - 1024)

Save

The JIT options will take effect right after Save. Device reboot will clear the options.

Home / Syslogd / Syslogd Message

Syslogd Message

Filter [   ] Apply ☑ Scroll Down

Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_RX"):rx 8 bytes 02 03 00 00 00 0a c5 fe
Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_CMD"):read cmd(uid2, fid3) will use tid 175
Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_ROUTE"):ucast(tid175,uid2,fid3),client1 sent 12
Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_TCP_XMIT"):client 0:xmit_data(12/12)bytes:00 af 00 00 00 06 02 03 00 00 00 0a
Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_RESP"):client1 respond tid175,uid2,fid3(ontime)
Aug 24 08:38:39 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_TX"): 192.168.1.15 502 tx(25/25)bytes:02 03 14 41 c5 00 00 00 00 00 00 00 00 00 00 00

If the raw data here exceed the Dump Length, only first N Bytes will be printed.

New Monitor & JIT Log – COM Port Client Mode (2/2)

- ## Monitor > Port N (Modbus Client Mode)

  In the Monitor pages, the JIT options are for this specific COM Port, no matter where the command goes.
  Modbus/TCP related options are also available; Modbus/TCP commands sent from this COM Port will shown when selected.
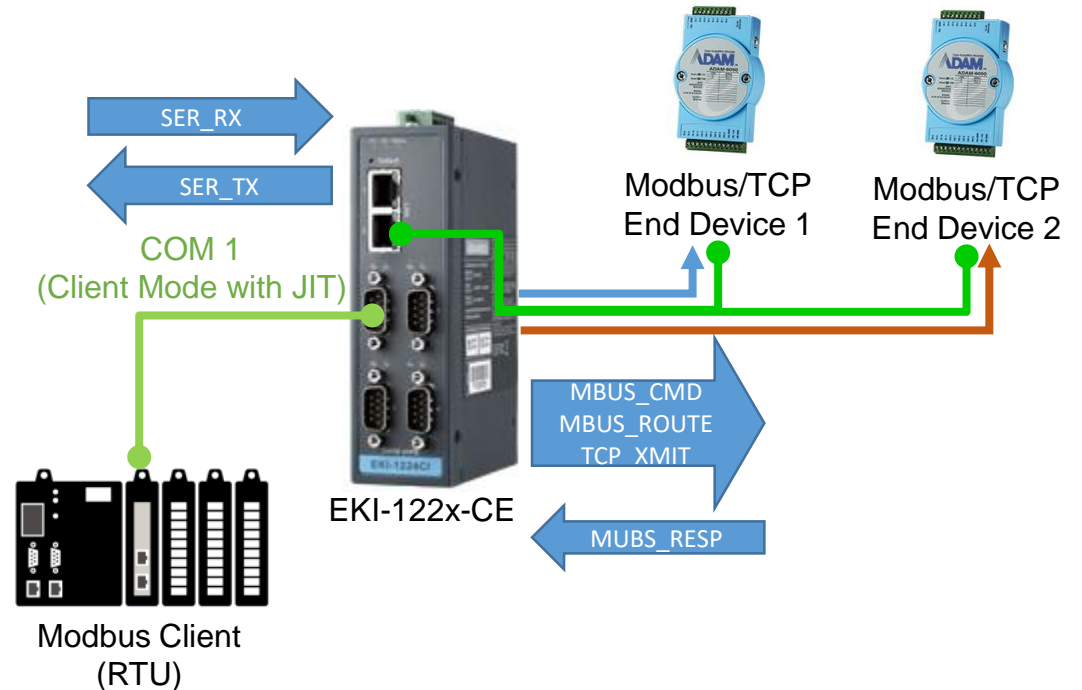
  Ex. Modbus/RTU Client on COM 1 to 2 Modbus/RTU End Devices on COM 3, with JIT enabled on COM 1.

Log will show information between:
- ✓ Modbus Client (COM 1) ←→ End Device 1
- ✓ Modbus Client (COM 1) ←→ End Device 2

```
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_RX"):rx 8 bytes 01 03 00 00 00 0a c5 cd
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_CMD"):read cmd(uid1, fid3) will use tid 215
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_ROUTE"):ucast(tid215,uid1,fid3),client0 sent 12
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_TCP_XMIT"):client 0:xmit_data(12/12)bytes:00 d7 00 00 00 06 01 03 00 00 00 0a
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_RESP"):client0 respond tid215,uid1,fid3(ontime)
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_TX"): 192.168.1.15 502 tx(25/25)bytes:01 03 14 6c ec 00 00 00 00 00 00 00 00
```

```
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_RX"):rx 8 bytes 02 03 00 00 00 0a c5 fe
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_CMD"):read cmd(uid2, fid3) will use tid 216
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_ROUTE"):ucast(tid216,uid2,fid3),client0 sent 12
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_TCP_XMIT"):client 0:xmit_data(12/12)bytes:00 d8 00 00 00 06 02 03 00 00 00 0a
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_MBUS_RESP"):client0 respond tid216,uid2,fid3(ontime)
Sep 12 09:19:08 EKI-1224-CE user.notice mb_client: Serial(1|"JIT_SER_TX"): 192.168.1.15 502 tx(25/25)bytes:02 03 14 00 00 00 00 00 00 00 00 00 00
```

*With all JIT options on Monitor page selected

SER_RX

SER_TX

COM 1
(Client Mode with JIT)

Modbus/TCP
End Device 1

Modbus/TCP
End Device 2

MBUS_CMD
MBUS_ROUTE
TCP_XMIT

MUBS_RESP

EKI-122x-CE

Modbus Client
(RTU)

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New Monitor & JIT Log – By TCP Session (1/2)

- ## Syslogd > Modbus Server

  JIT options here are selected by TCP session. Only connections still alive are available; disconnected sessions will be removed.

  Different Source IP/Port & Destination IO/Port combination will be considered as different TCP session.

  *As how it is named, only TCP Sessions which are connecting to Peers on COM Ports set in Server Mode will be recorded. TCP Peers connected by the Client mode will not be recorded here.

New Monitor & JIT Log – By TCP Session (2/2)

- ## Syslogd > Modbus Server

  New JIT Log viewed in the aspect of TCP Session allows the user to inspect the Modbus Data related to specific Client, no matter which COM Port it ended up goes to.

  Ex. Modbus/TCP Client to 2 Modbus/RTU End Devices on COM Port 3 and 4, respectively, with JIT enabled on TCP session from the Modbus/TCP Client.
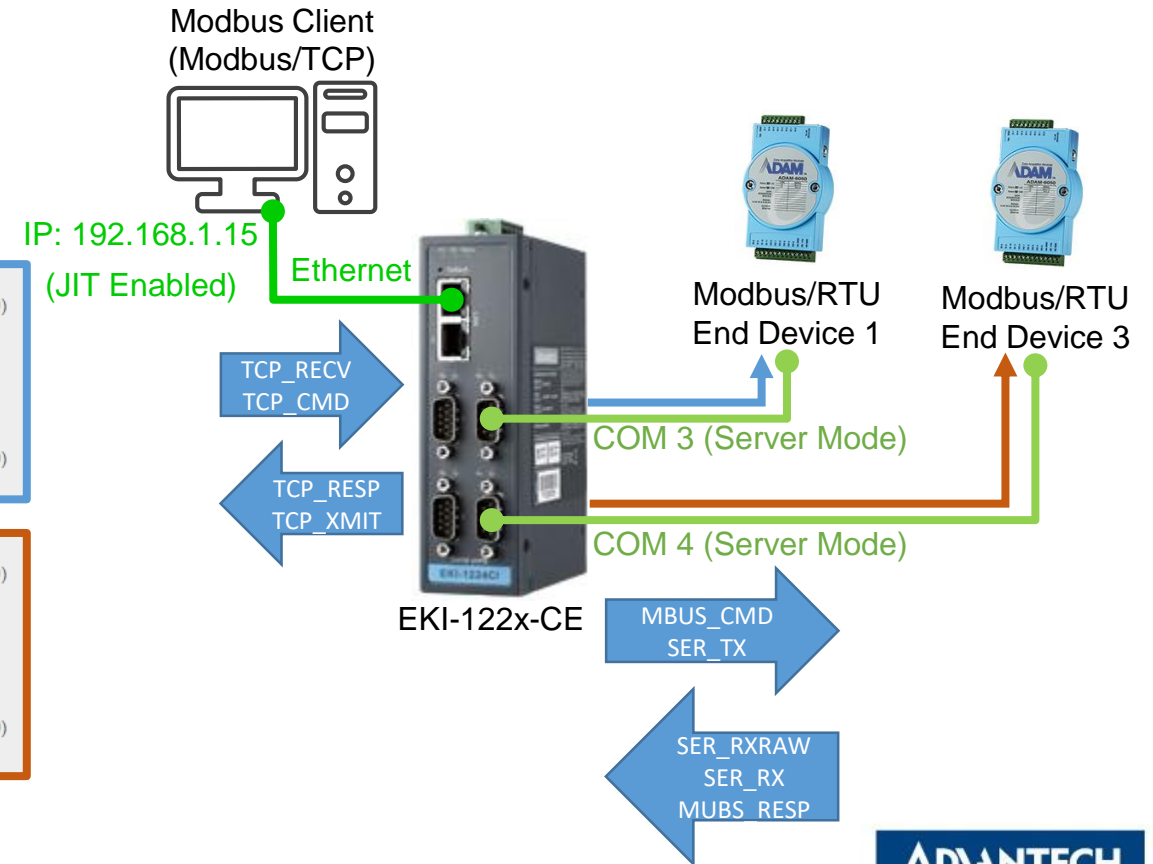
Log will show information between:
- ✓ Modbus Client ←→ End Device 1 (COM 3)
- ✓ Modbus Client ←→ End Device 2 (COM 4)

```
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RECV"):recv(12)bytes:bc 00 00 00 00 06 01 03 00 00 00 0a
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_CMD"):cmd.tid(48128).pid(0).msglen(6).uid(1).read_holding_registers.addr(0).len(10)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_CMD")client31:cmd.uid(1).read_holding_registers.addr(0).len(10)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_TX")client31:tx(8/8)bytes:01 03 00 00 00 0a c5 cd
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RXRAW")client31:rx 25 bytes:01 03 14 26 61 00 00 00 00 00 00 00
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_SER_RX")client31:rx 25 bytes:01 03 14 26 61 00 00 00 00 00 00 00
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(2|"JIT_MBUS_RESP")client31:resp.uid(1).read_holding_registers.byte_cnt(20)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RESP"):resp.tid(48128).pid(0).msglen(23).uid(1).read_holding_registers.byte_cnt(20)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_XMIT"):xmit (29/29)bytes:bc 00 00 00 00 17 01 03 14 26 61 00 00 00 00 00
```

```
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RECV"):recv(12)bytes:bd 00 00 00 00 06 03 03 00 00 00 0a
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_CMD"):cmd.tid(48384).pid(0).msglen(6).uid(3).read_holding_registers.addr(0).len(10)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(3|"JIT_MBUS_CMD")client31:cmd.uid(3).read_holding_registers.addr(0).len(10)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(3|"JIT_SER_TX")client31:tx(8/8)bytes:03 03 00 00 00 0a c4 2f
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(3|"JIT_SER_RXRAW")client31:rx 25 bytes:03 03 14 00 00 12 1f 00 00 00 00 00
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(3|"JIT_SER_RX")client31:rx 25 bytes:03 03 14 00 00 12 1f 00 00 00 00 00
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Serial(3|"JIT_MBUS_RESP")client31:resp.uid(3).read_holding_registers.byte_cnt(20)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RESP"):resp.tid(48384).pid(0).msglen(23).uid(3).read_holding_registers.byte_cnt(20)
Sep 13 09:52:48 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_XMIT"):xmit (29/29)bytes:bd 00 00 00 00 17 03 03 14 00 00 12 1f 00 00 00
```

*With all JIT options on Modbus Server page selected

Modbus Client
(Modbus/TCP)

IP: 192.168.1.15
(JIT Enabled)

Ethernet

Modbus/RTU End Device 1

Modbus/RTU End Device 3

TCP_RECV
TCP_CMD

COM 3 (Server Mode)

TCP_RESP
TCP_XMIT

COM 4 (Server Mode)

EKI-122x-CE

MBUS_CMD
SER_TX

SER_RXRAW
SER_RX
MUBS_RESP

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JIT Log Enabled With All Option On

- ## Syslogd > Syslogd Message

  Here shows the JIT Log according to the options selected, either the options were selected in the Monitor page or Modbus Server page.

  If same options are selected both for COM Port and TCP Session, only one entry for each event will be actually shown, since they are basically the same thing.

  For example, option JIT_SER_RX exist on both pages. Selecting them at the same time will show only one entry when COM Port received data.

```
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RECV"):recv(12)bytes:01 00 00 00 00 06 03 03 00 00 00 05
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_CMD"):cmd.tid(256).pid(0).msglen(6).uid(3).read_holding_registers.addr(0).len(5)
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_MBUS_CMD")client31:cmd.uid(1).read_holding_registers.addr(0).len(5)
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_TX")client31:tx(8/8)bytes:01 03 00 00 00 05 85 c9
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_RXRAW")client31:rx 15 bytes:01 03 0a 00 01 00 02 00 03 00 04 00
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_SER_RX")client31:rx 15 bytes:01 03 0a 00 01 00 02 00 03 00 04 00
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Serial(1|"JIT_MBUS_RESP")client31:resp.uid(1).read_holding_registers.byte_cnt(10)
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_RESP"):resp.tid(256).pid(0).msglen(13).uid(3).read_holding_registers.byte_cnt(10)
Sep  1 08:15:43 EKI-1224-CE user.notice mbus_gw_server: Client(31|"JIT_TCP_XMIT"):xmit (19/19)bytes:01 00 00 00 00 0d 03 03 0a 00 01 00 02 00 03 00
```

- If you don't know what option should be checked, select them all to show all the information.

```
serial: ☑ JIT_SER_RX  ☑ JIT_SER_TX  ☑ JIT_SER_RXRAW
modbus: ☑ JIT_MBUS_RESP  ☑ JIT_MBUS_CMD
tcp: ☑ JIT_TCP_XMIT  ☑ JIT_TCP_RECV  ☑ JIT_TCP_CMD
     ☑ JIT_TCP_RESP  ☑ JIT_TCP_TIMEOUT  ☑ JIT_TCP_NO_ROUTE
     ☑ JIT_TCP_REDT
```

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