

KEPServerEX V6 与三菱 PLC 以太网连接指导

本指导只针对以太网 Ethernet 驱动连接 Q 系列 PLC,其余系列 PLC 可以参考帮助文档,此外 KEPServerEX 还提供串口 Serial 驱动连接三菱 PLC;

使用以太网 Ethernet 驱动,需要 PLC 端具备相应的以太网通讯功能,如 Q 系列配套的 QJ71E71 以太网通讯 板卡;

PLC 端需要在 GX Developer 或 GX Works 中做相应的设置。

1. 打开 KEPServerEX Configuration

左侧为 KEPServerEX 各个功能模块展示,右边是具体详情 底部为 EventLog 事件记录区域

| KEPServerEX 6 Configuration | [Connected to Runtime] | S manhate manhater - | | | | | OX_ |
|---|------------------------|----------------------|------------|---------|-----------------|--------------------|---------------------------|
| File Edit View Tools Runti | me Help | | | | | | |
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| Concetivity Concetivi | tion | / Driver | Connection | Sharing | Virtual Network | Description | |
| Date / Tr | me Source | Event | | | | | |
| neauy | | | | | | Detault User Clier | is: 0 Active tags: 0 of 0 |

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2. 接下来 添加 Channel 通道,选择连接设备所对应的驱动 比如这里的 Mitsubishi Ethernet Driver

| Add Channel Wizard | | |
|---------------------------------------|------|--|
| | | |
| Select the type of channel to be crea | ted: | |
| Mitsubishi Ethernet | • | |
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3. 接下来 自定义此 Channel 的名称,此处使用默认设置 Channel1

| Specify the identity of this object. | |
|--------------------------------------|--|
| Name: | |
| Channell | |
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4. 接下来选择驱动具体使用的通讯网卡,选择 Default 则交由 OS 系统选择默认网卡



| Specify the name | |
|------------------|---|
| Network Adapter: | of a network adapter to bind or allow the OS to select the default. |
| Default | |
| burdan | |
| vailable Network | Adapters |
| Wallable Network | Adapters |
| Binding | Adapter Name |
| | Default |
| 10.192.3.176 | Intel(R) Ethernet Connection I217-LM |
| 192.168.153.1 | VMware Virtual Ethernet Adapter for VMnet8 |
| 192.168.187.1 | VMware Virtual Ethernet Adapter for VMnet1 |
| | |
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5. 接下来 选择驱动执行写入操作的模式,建议使用默认设置

| timization Method: | |
|--|-----------------------|
| | |
| rite Only Latest Value for All Tags | • |
| | |
| ecify the ratio of write operations to read operations, t niourable number of writes. | based on one read per |
| ty Cycle: | |
| · · · · · · · · · · · · · · · · · · · | |
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6. 接下来 选择驱动对非标浮点数据的表达方式,建议使用默认设置



| | X |
|--|-------------|
| Add Channel Wizard | |
| | |
| Choose how to send invalid floating-point numbers to | the client. |
| Floating-Point Values: | |
| Replace with Zero 👻 🧐 | |
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| | Next Cancel |
| | |

7. 接下来 查看驱动当前设置情况

| | Identification | AL. |
|---|--------------------------|--------------------------------------|
| | Name | Channel1 |
| | Description | |
| | Driver | Mitsubishi Ethernet |
| | Diagnostics | |
| | Diagnostics Capture | Disable |
| | Ethernet Settings | |
| | Network Adapter | Default |
| - | Write Optimizations | |
| | Optimization Method | Write Only Latest Value for All Tags |
| | Duty Cycle | 10 |
| - | Non-Normalized Float Han | dling |
| | Floating-Point Values | Replace with Zero |
| | | |

8. 接下来 添加 Device 设备,可自定义设备名称,此处使用默认设置 Device1



| | 2 |
|--------------------------------------|---|
| Add Device Wizard | |
| Specify the identity of this object. | |
| Name: | |
| Device1 | 0 |
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9. 接下来 选择具体的设备型号,如这里要连接的 Q 系列 PLC

| Select the spe | cific type of device as | ssociated with this II | D. Options depend on the t | type of |
|------------------------|-------------------------|------------------------|----------------------------|---------|
| communicatio Model: | ns in use. | | | |
| Q Series | • 💿 | | | |
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10. 接下来 输入 PLC 设备的 IP 地址,后缀 255 表示从本机进行与本地网络 PLC 的连接



| Add Device Wizard | |
|--|------------|
| Specify the device's driver-specific station | n or node. |
| 10.10.110.55:255 | |
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11. 接下来 选择设备的数据扫描模式,建议使用默认设置,KEPServerEX 根据客户端的扫描设置对设备进行 数据扫描

| Specify the method for determining how oft | ten tags in the device are scanned. |
|--|--|
| Scan Mode: | Nate 2010 💆 Transversa kala se |
| Respect Client-Specified Scan Rate | • |
| Disable 🔻 🖉 | |

12. 接下来 设置设备连接参数,建议使用默认设置



| | maximum amount of time, in seconds, allowed to establish a connection to a |
|----------------------|---|
| remote de device. | vice. Connection time is often longer than communication request time for a |
| Connect T | imeout (s): |
| 3 | |
| 250 | |
| 250 | |
| | |
| Indicate h | ow many times the driver sends a communications request before considering |
| the reques | st to have failed and the device to be in error. |
| CONTRACTOR OF THE | |
| Retry Atte | mpts: |

13. 接下来 选择设备通讯故障的处理机制,建议使用默认设置

| ſ | | X |
|---|--|--------|
| | Add Device Wizard | |
| | Automatically remove the device from the scan due to communication failures. | |
| | Demote on Failure: | |
| | Disable 🔻 🙆 | |
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| - | | |
| | Next | Cancel |
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14. 接下来 选择字节顺序表达模式,建议使用默认设置



| Add Device | e Wizard | | | |
|----------------------|-----------------------------|------------------------|--------------|--------|
| Specify if the drive | r should assume that the fi | rst word is low for 32 | -bit values. | |
| First Word Low: | 0 | | | |
| | | | | |
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| | | | | |
| | | | | |
| | | | Next | Cancel |

15. 接下来 设置 PLC 端使用的协议及端口,默认为 UDP+5000, 需酌情修改 CPU 信息可以酌情修改

| Indicate the o | correct protocol to use when communicating with the device. |
|----------------|--|
| UDP | ~ |
| | |
| Specify the p | ort number to use when communicating with the device. |
| Port Number | |
| 5000 | |
| Salact the ta | raat CDU (contral processing unit). For a single CDU, choose Local CDU |
| CPU: | get Cro (tentral processing unit). For a single Cro, choose Local Cro. |
| Local CPU | ▼ (0) |
| | |
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16. 接下来 选择 KEPServerEX 与 PLC 的时间同步方式,建议使用默认设置



| Select how the | time and date are reconciled between | n the host system and the device. |
|----------------|--------------------------------------|-----------------------------------|
| Time Sync Me | nod: | |
| Disabled | ▼ Ø | |
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17. 接下来 查看设备当前设置情况

| Identifie | cation | | | | |
|------------|-------------------|------------------------------------|---|--|--|
| Name | | Device1 | | | |
| Descript | ion | | | | |
| Channel | Assignment | Channel1 | : | | |
| Driver | | Mitsubishi Ethernet | | | |
| Model | | Q Series | | | |
| ID | | 10.10.110.55:255 | | | |
| 🗆 Operati | ing Mode | | | | |
| Data Co | llection | Enable | | | |
| Simulate | ed | No | | | |
| 🗏 Scan M | Scan Mode | | | | |
| Scan Mo | ode | Respect Client-Specified Scan Rate | | | |
| Initial Up | dates from Cache | Disable | | | |
| E Commu | nication Timeouts | | | | |

18. 接下来 添加 Tag 标签,可自定义标签名称



| Property Groups | Identification | |
|-----------------|--------------------------------------|------------|
| General | Name | Tag1 |
| Scaling | Description | |
| | Data Properties | |
| | Address | |
| | Data Type | Default |
| | Client Access | Read/Write |
| | Scan Rate (ms) | 100 |
| | Name | |
| | Specify the identity of this object. | |

19. 接下来 设置有效的标签地址 Address,可参考 Hints 了解驱动所支持的地址 可使用默认设置或者酌情修改数据类型 Data Type、用户端读写权限 Client Access

| Property Groups | Identifica | Identification | | | | | | | |
|-----------------|------------|--|----------------|--|--|--|--|--|--|
| General | Name | | Tag1 | | | | | | |
| Scaling | Descriptio | n | | | | | | | |
| 5 | 🖃 Data Pro | operties | | | | | | | |
| | Address | | | | | | | | |
| | Data Type | e | Default | | | | | | |
| | Client Acc | ess | Read/Write | | | | | | |
| | Scan Rate | e (ms) | 100 | | | | | | |
| | Address | B000-BEA40 (Hex) Long B000-BEA50 (Hex) BCD B000-BEA50 (Hex) Word B000-BEA50 (Hex) Word B000-BEA50 (Hex) Boolean CC0-CC31968 DWord CC0-CC31968 LBCD CC0-CC31968 LBCD CC0-CC31984 BCD CC0-CC31984 Short | Cancel Help | | | | | | |

20. 接下来 打开 Quick Client 验证设备的连接状况, 如图, Channel1.Device1.Tag1 和 Tag2 的 Value、Timestamp、Quality 表达正确,显示当前设备连接成功。 可返回上一步,对当前设备继续添加其余标签。



| Edit View Tools Runtime He | elp | | | | | | | | |
|-------------------------------|-----------------------|-------------|-------|--------------|---------|--------------|--|--|--|
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| Project | Tag Name | / Address | | Dat | а Туре | Scan Rate | | | |
| Connectivity | Mag1 | B0000 | | Boo | olean | 100 100 | | | |
| 😑 🛄 Channel1 | Canada Taga | D0000001 | 0 | Sho | rt | | | | |
| Tevice1 | | | | | | | | | |
| ⇒ Aliases | | | | | | | | | |
| OPC Quick Client - Untitled * | | | | | | | | | |
| File Edit View Tools Help | | | | | | | | | |
| D 🛎 🔒 🛫 💣 💕 🕌 🖡 🖻 🛙 | 8 × | | | | | | | | |
| ⊡-:∎ Kepware.KEPServerEX.V6 | Item ID | / Data Type | Value | Timestamp | Quality | Update Count | | | |
| Channel1.Device1 | Channel1.Device1.Tag1 | Boolean | 0 | 10:46:52.780 | Good | 1 | | | |
| | Channel1.Device1.Tag2 | Short | 0 | 10:47:02.371 | Good | 2 | | | |
| | | | | | | | | | |
| | | | | | | | | | |

如果在 Quick Client 中标签无 Value 显示或 Quality 为 BAD,则说明与设备的通讯未成功建立。 先确认 IP 地址、协议和端口信息是否正确,如图为 QJ71E71 里的设置。

| Binary code ASCII code | Do not wait for OPEN (0 impossible at STOP time Always wait for OPEN (0 possible at STOP time) | Communications) Communication |
|------------------------|--|--|
| IP address | | Send frame setting • Ethernet(V2.0) |
| Paddress 10 | 10 110 55 | C IEEE802.3 |

| | Proto | col | Open system | Fixed buffe | 34 | Fixed buffer communication | Pairing | , | Existence | Local station Port No. | Destination IP address | Dest. Port No. |
|---|-------|-----|-------------|-------------|----|----------------------------|---------------------------|---|--------------|---------------------------|---------------------------|-------------------|
| 1 | UDP | • | + | Receive . | - | Procedure exist 💌 | No pairs | • | No confirm 💌 | 1388 | No Settinos | FFFF |
| 2 | | * | | | - | * | Contraction of the second | • | | analises and a set | 1 | 1 |
| 3 | | - | | 1 | - | * | | • | | | | |
| 4 | | - | - | | - | * | | ٠ | | | | |
| 5 | | * | - | 6 | • | | - | - | | S | | |
| 6 | | * | | | - | | | | | 1 | | |

 接下来,如需添加其余的 PLC 设备,建议重复前面的步骤, 选择新建 Channel 通道,添加 Device 设备,添加 Tag 标签, 优化 KEPServerEX 通讯。



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|---------------------------------|--------------|---------------------|------------|---------|-----------------|
|] 🔄 🖻 🛤 🐯 💷 💊 🤺 🖓 | | | | | |
| Project | Channel Name | / Driver | Connection | Sharing | Virtual Network |
| 🖨 🕼 Connectivity | Channel1 | Mitsubishi Ethernet | Ethernet | N/A | N/A |
| 🖨 🔚 Channel1 | Channel2 | Mitsubishi Ethernet | Ethernet | N/A | N/A |
| - E Device1 | Channel3 | Mitsubishi Ethernet | Ethernet | N/A | N/A |
| 🖨 🛄 Channel2 | | | | | |
| - E Device2 | | | | | |
| 🖨 🔚 Channel3 | | | | | |
| - E Device3 | | | | | |
| n Aliases | | | | | |
| Advanced Tags | | | | | |
| 🖨 🖀 Alarms & Events | | | | | |
| Add Area | | | | | |
| 🖨 🛢 Data Logger | | | | | |
| -51 Add Log Group | | | | | |
| B S IDF for Splunk | | | | | |
| Add Splunk Connection | | | | | |
| 🖮 🚓 IoT Gateway | | | | | |
| Add Agent | | | | | |
| 🖶 🕙 Local Historian | | | | | |
| | | | | | |
| 🖻 🗰 Scheduler | | | | | |
| Add Schedule | | | | | |



** 关于 Mitsubishi Ethernet 驱动配置的具体含义 或者 如何配置 A、Q&A、FX3U 系列 PLC,可以参考 Help | Mitsubishi Ethernet

