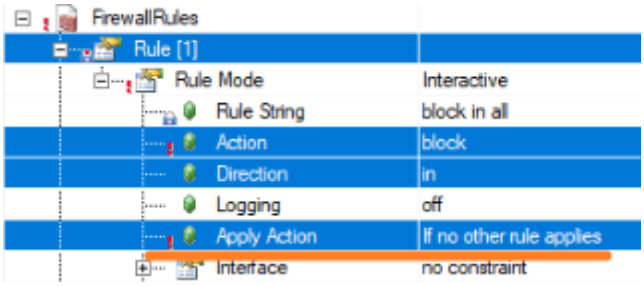
背景知识

- 023贝加莱操作系统支持防火墙功能吗
- 024如何在Automation Studio中配置防火墙

配置基本规则

- 添加 Firewall rule 时需要注意:
  - 对于同一规则
    - 如果先放行，那么后续再添加的阻挡策略就不会生效;
    - 反之，如果先阻挡，那么后续的放行就不会生效。
  - 如果希望对同一规则下增加例外
    - Apply Action 设置为 If no other rule applies
    - 

- 防火墙功能在仿真模式下，相关功能会存在异常，因此建议在硬件 PLC 上测试。

检查 PLC 上开放端口方式

- 端口扫描工具
  - https://www.advanced-port-scanner.com/cn/
- 默认情况下开启 ModbusTCP Slave 功能的 PLC 开放的端口
  - 10.86.13.250

状态: 确定
操作系统:
IP: 10.86.13.250
MAC: 00:60:65:5F:38:52
制造商: BERNECKER RAINER INDUSTRIE-ELEKTRONIC GmbH
NetBIOS:
用户:
类型:
日期: 2094-01-31 10:56:59 UTC±00:00
备注:

服务	详情
Port **80** (TCP)	
Port **111** (TCP)	rpcbind
Port **502** (TCP)	

案例一：只允许指定 IP 访问 PLC

配置方式

- 只允许 IP 为 10.86.13.249 的设备访问
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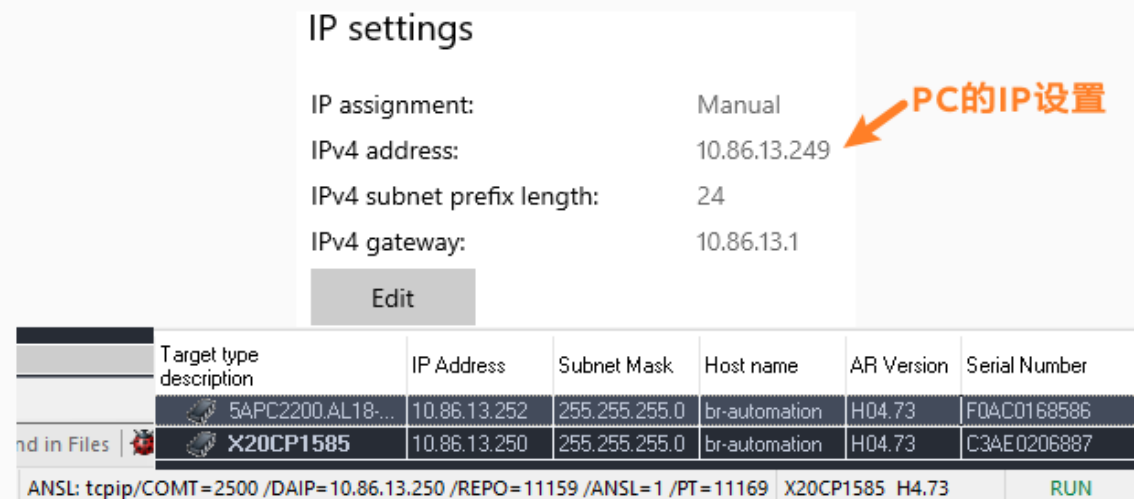
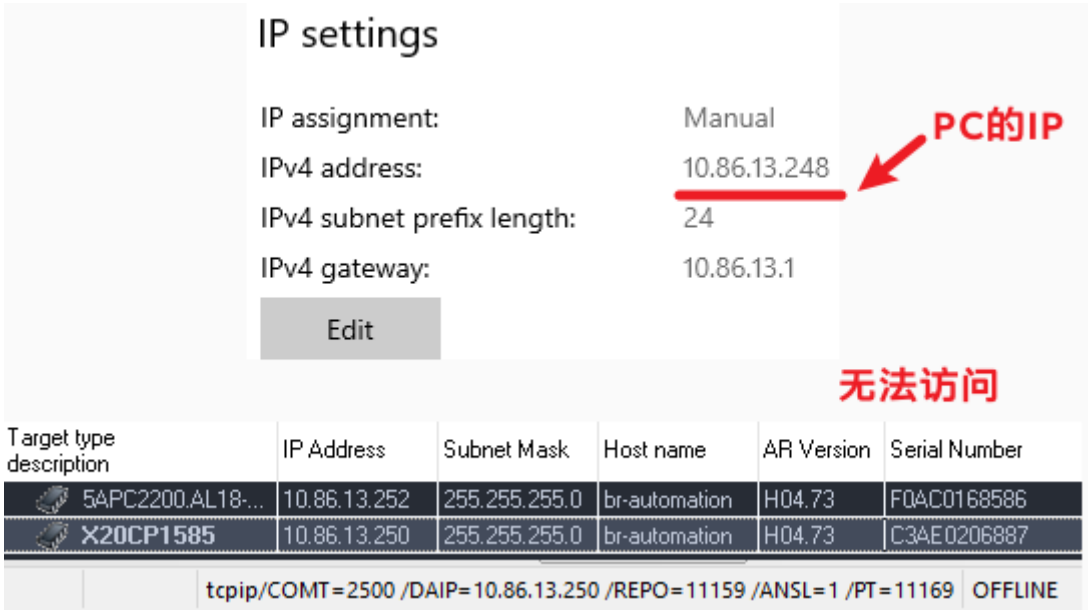
FirewallRules	
Rule [1]	
Rule Mode	Interactive
Rule String	block in all
Action	block
Direction	in
Logging	off
Apply Action	If no other rule applies
Interface	no constraint
Internet Protocol	no constraint
Response	off
Source Address	no constraint
Destination Address	no constraint
Group	none
Rule [2]	
Rule Mode	Interactive
Rule String	block out all
Action	block
Direction	out
Logging	off
Apply Action	If no other rule applies
Interface	no constraint
Internet Protocol	no constraint
Response	off
Source Address	no constraint
Destination Address	no constraint
Group	none
Rule [3]	
Rule Mode	Interactive
Rule String	pass in quick from 10.86.13.249/32 to me
Action	pass
Direction	in
Logging	off
Apply Action	Immediately
Interface	no constraint
Internet Protocol	no constraint
Response	off
Source Address	must match
IP Address	10.86.13.249
Netmask (CIDR)	32
Destination Address	me
Group	none
Rule [4]	
Rule Mode	Interactive
Rule String	pass out quick from me to 10.86.13.249/32
Action	pass
Direction	out
Logging	off
Apply Action	Immediately
Interface	no constraint
Internet Protocol	no constraint
Response	off
Source Address	me
Destination Address	must match
IP Address	10.86.13.249
Netmask (CIDR)	32
Group	none

实现效果

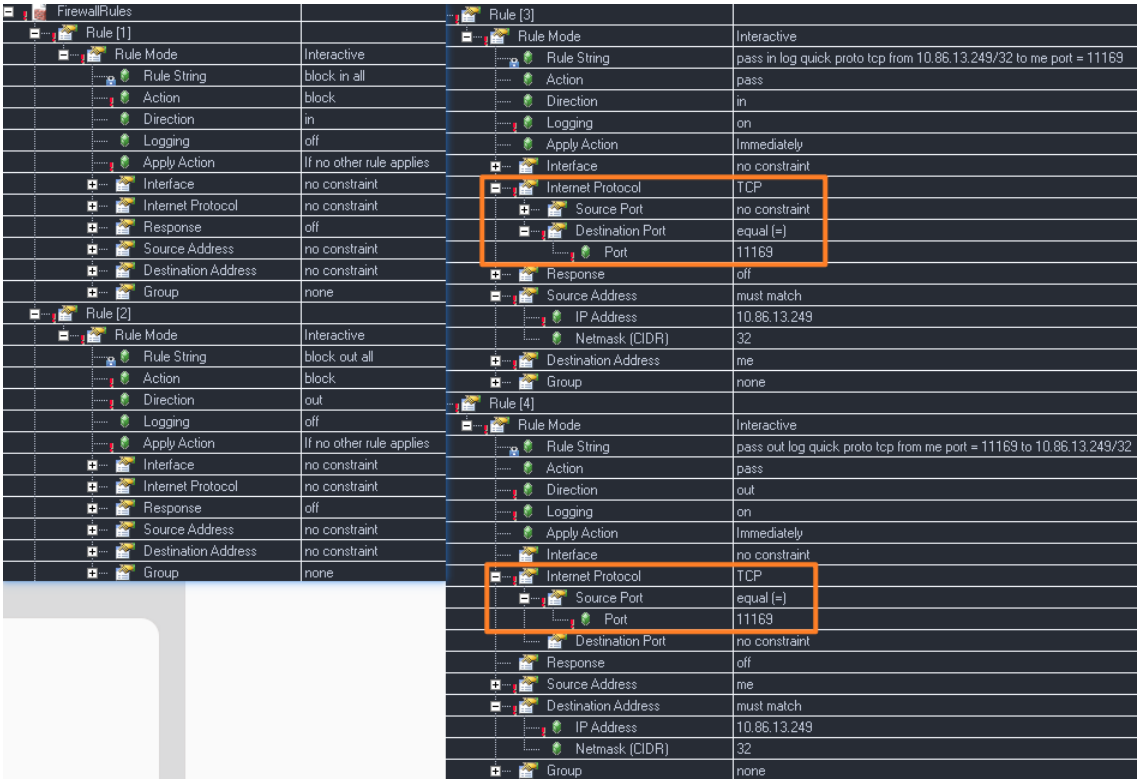
- PC 的 IP 地址为 10.86.13.249 可以访问
- 

- PC 的 IP 地址为 10.86.13.248 不可以访问

- 

案例二: PLC 只开放指定 IP 与指定端口号提供访问

配置方式

- 只允许 IP 为 10.86.13.249 的 PC 设备访问
- 

实现效果

- 端口扫描工具无法扫到其他端口

- 10.86.13.250

  状态: 确定
  操作系统:
  IP: 10.86.13.250
  MAC: 00:60:65:5F:38:52
  制造商: BERNECKER RAINER INDUSTRIE-ELEKTRONIC GmbH
  NetBIOS:
  用户:
  类型:
  日期:
  备注:

  服务 详情

- 通过 AS 软件能够连接此 PLC
  - ANSL: tcpip/COMT=2500 /DAIP=10.86.13.250 /REPO=11159 /ANSL=1 /PT=11169 | X20CP1585 H4.73 | RUN
- PLC 的 ModbusTCP Slave 与 Web 服务例如 SDM 均无法访问

案例三：关闭指定端口

配置方式

- 关闭 PLC 上开启的 111 端口
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FirewallRules			
Rule [1]		Rule [2]	
Rule Mode	Interactive	Rule Mode	Interactive
Rule String	block in proto tcp from any to any port = 111	Rule String	block out proto tcp from any port = 111 to any
Action	block	Action	block
Direction	in	Direction	out
Logging	off	Logging	off
Apply Action	If no other rule applies	Apply Action	If no other rule applies
Interface	no constraint	Interface	no constraint
Internet Protocol	TCP	Internet Protocol	TCP
Source Port	no constraint	Source Port	equal (=)
Destination Port	equal (=)	Port	111
Port	111	Destination Port	no constraint
Response	off	Response	off
Source Address	no constraint	Source Address	no constraint
Destination Address	no constraint	Destination Address	no constraint
Group	none	Group	none

实现效果

- 可见原先默认开放的 111 端口已被关闭

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10.86.13.250

状态: 确定
操作系统:
IP: 10.86.13.250
MAC: 00:60:65:5F:38:52
制造商: BERNECKER RAINER INDUSTRIE-ELEKTRONIC GmbH
NetBIOS:
用户:
类型:
日期: 2000-01-01 00:53:26 UTC±00:00
备注:

服务	详情
Port **80** (TCP)	
Port **502** (TCP)	