CLXX-N NTP CLOCK MANUAL

Operating Manual

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ELECTRO-MED

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1 OPERATING PROCEDURE

1. Installation
   - Mount the NTP Clock in the desired location using the provided wall-mount brackets or stands.

2. Power On
   - Connect the clock to a 220V AC, 50Hz power source.
   - Switch on the device.
   - The display will light up, and the 7 segments will run a self-test.
   - The clock will then attempt to synchronize with the network.

3. Network Configuration
   - Ethernet: Connect an Ethernet cable to the RJ45 port on the clock. Ensure the network has internet access.
   - Verify the clock connects to the NTP server. The default server is typically pre-configured, but it can be updated in the settings.

4. Synchronization
   - Upon successful network connection, the clock will automatically synchronize time with the NTP server.
   - The display will show the synchronized time in HH:MM:SS format

5. Adjustments
   - Use the NTP Clock Manager to make any adjustments, like time correction, time-zone setting, NTP Server configuration.

2 TROUBLESHOOTING GUIDE

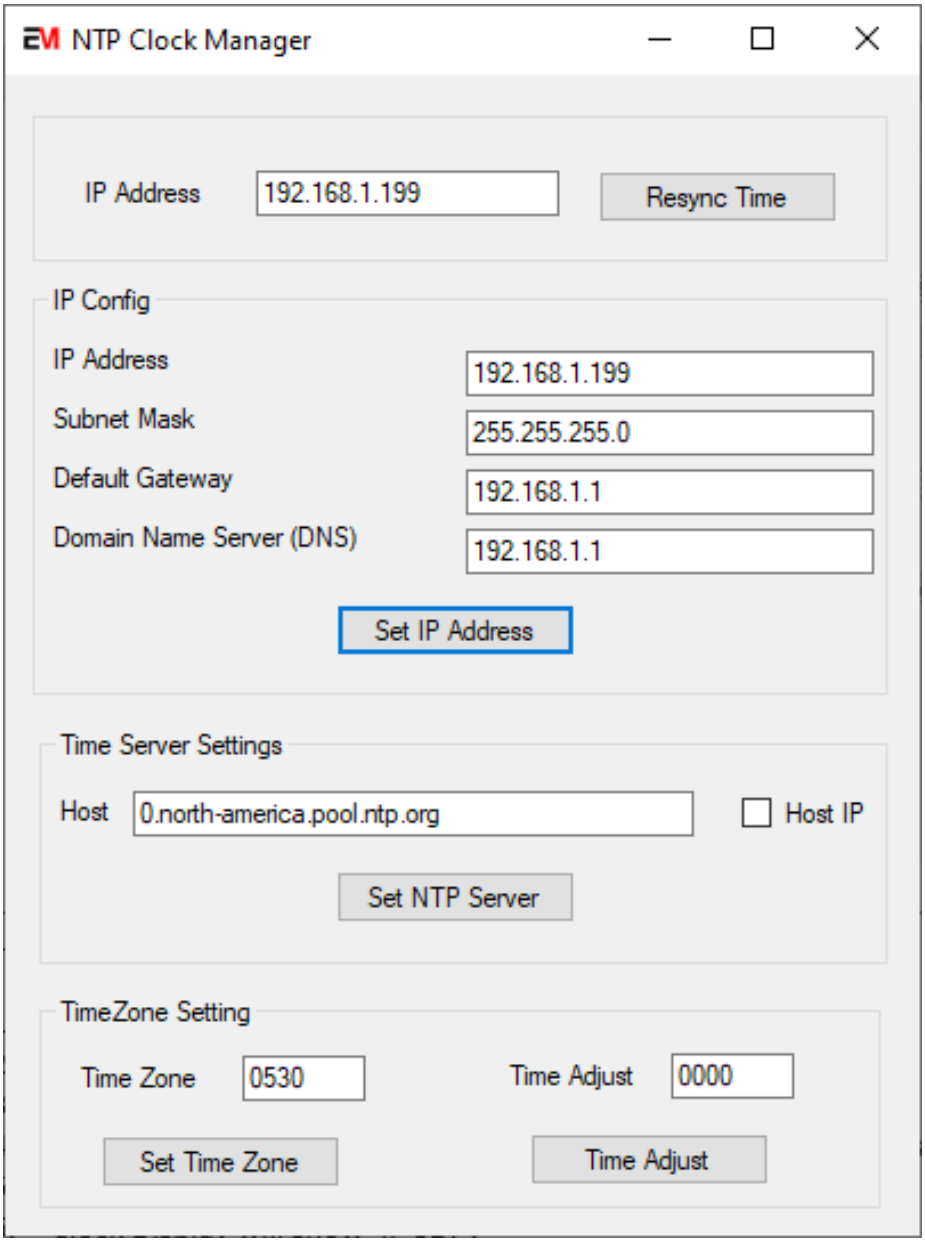
#	Issue	Possible Cause	Solution
1	No display or power	Power supply is not connected or faulty	Check and connect the power supply correctly.
2	Clock not synchronizing	Network connection issue	Verify Ethernet connection and server reachability. Check ping on the clock IP Address.
3	Display flickering	Loose power or network cable	Inspect and reconnect the input cables securely.
4	Intermittent display updates	Noise in the signal line	Ensure all cables are securely connected.
5	Device unresponsive	Software or hardware issue	Restart the device or contact customer support.

3 SOFTWARE

3.1 NTP CLOCK MANAGER

To configure the NTP Slave clocks you will need NTP Clock Manager Program.

You can download the program from https://electromed.co.in website or contact Electromed support.



3.1.1 IP ADDRESS SETTING

1. Power off the clock
2. Press and hold Reset Button
3. While holding the reset button, power on the clock, and keep holding the button for 10 seconds
4. Clock display will show 'RESET'
5. Set IP Address of PC to 192.168.0.123
6. Enter the IP Address, Subnet Mask, Default Gateway, Domain Name Server (DNS)
7. Click 'Set IP Address'
8. Clock Display will show 'IP SET'.
9. Power Off the Clock, and restart after 5 seconds

3.1.2 TIME SERVER SETTING

The default server address in NTP Clock Manager is for the Open Source Time server. You can set it to your local server via the following steps:

1. Enter the hostname of the time server
2. If IP Address is known:
    a. Enter the IP Address
    b. Tick 'Host IP'
3. Click 'Set NTP Server'
4. Power Off the Clock, and restart after 5 seconds

3.1.3 TIME ZONE SETTING

1. Enter the time zone difference in format ±####.
2. Example:
    a. For India: +0530
3. Click 'Set Time Zone'
4. Power Off the Clock, and restart after 5 seconds

3.1.4 TIME ADJUSTMENT

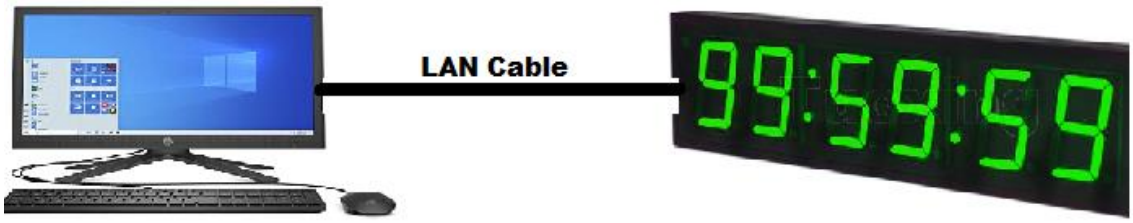
1. Enter time to be adjusted in milliseconds
2. Click 'Adjust'
3. Restart the clock

3.1.5 RESYNCHRONIZE TIME

1. Click 'Resynchronize Time'

3.2 INITIAL SETUP PROCEUDRE

1. Power off display
2. Press and hold Reset Button
3. While holding the reset button pressed, power on the Clock.
4. Keep reset button pressed for 10 seconds
5. Make a one-to-one connection between clock and laptop/PC using a cross LAN cable



6. Check ping on 192.168.0.199. Ensure that IP address of the PC is also of 192.168.0.*** series.
7. Open NTP Clock Manager
8. Set IP Address
9. Set Server Address
10. Set Time Zone
11. Restart
12. Check IP Address
13. Connect to network
14. Check Ping
15. Wait for the clock to synchronize
16. If adjustment is required, click 'Adjust'
17. Restart
18. Wait for the clock to synchronize

3.3 SOFT RESET TIME

1. Press and hold reset button for 2 seconds.
2. Time will reset to 00:00:00
3. Time will resynchronize with the NTP server (if present) within 30 seconds

3.4 12 / 24 MODE SELECTION

1. Press and hold Reset Button for 10 seconds to toggle between 12 / 24 hour modes.

4 GENERAL GUIDELINES

4.1 PRECAUTIONS

1. Ensure the clock is connected to a stable and secure network.
2. Avoid installing the device in areas with excessive dust, heat, or moisture.
3. Do not expose the clock to physical shocks or vibrations.
4. Ensure all connections are secure before powering on the device.

4.2 SAFETY INSTRUCTIONS

1. Operate the clock within the specified voltage range (220V AC, 50Hz).
2. Do not attempt to disassemble or repair the device yourself.
3. Handle the device with care to avoid damage to the display or components.
4. Keep the device away from flammable materials.

4.3 POWER REQUIREMENTS

- Voltage: 220V AC, 50Hz
- Power Consumption: <10W

4.4 ENVIRONMENTAL CONDITIONS

- Operating Temperature: 0°C to 50°C
- Storage Temperature: -10°C to 60°C
- Humidity: 10% to 90% non-condensing
- Installation Location: Dry and dust-free area (Preferred)

4.5 MAINTENANCE

1. Operate the clock within the specified voltage range (220V AC, 50Hz).
2. Do not attempt to disassemble or repair the device yourself.
3. Handle the device with care to avoid damage to the display or components.
4. Keep the device away from flammable materials.

5 SETUP LOCAL NTP SERVER

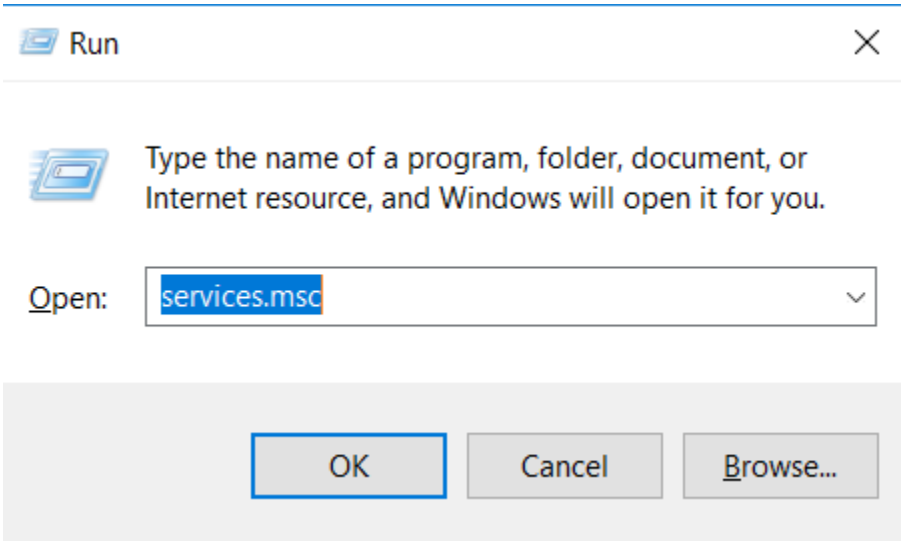
If you do not have a dedicated NTP server, then you can create a server on your local PC via the following steps:

5.1 SETUP TIME SERVICE

5.1.1.1 CONFIGURE THE WINDOWS TIME SERVICE

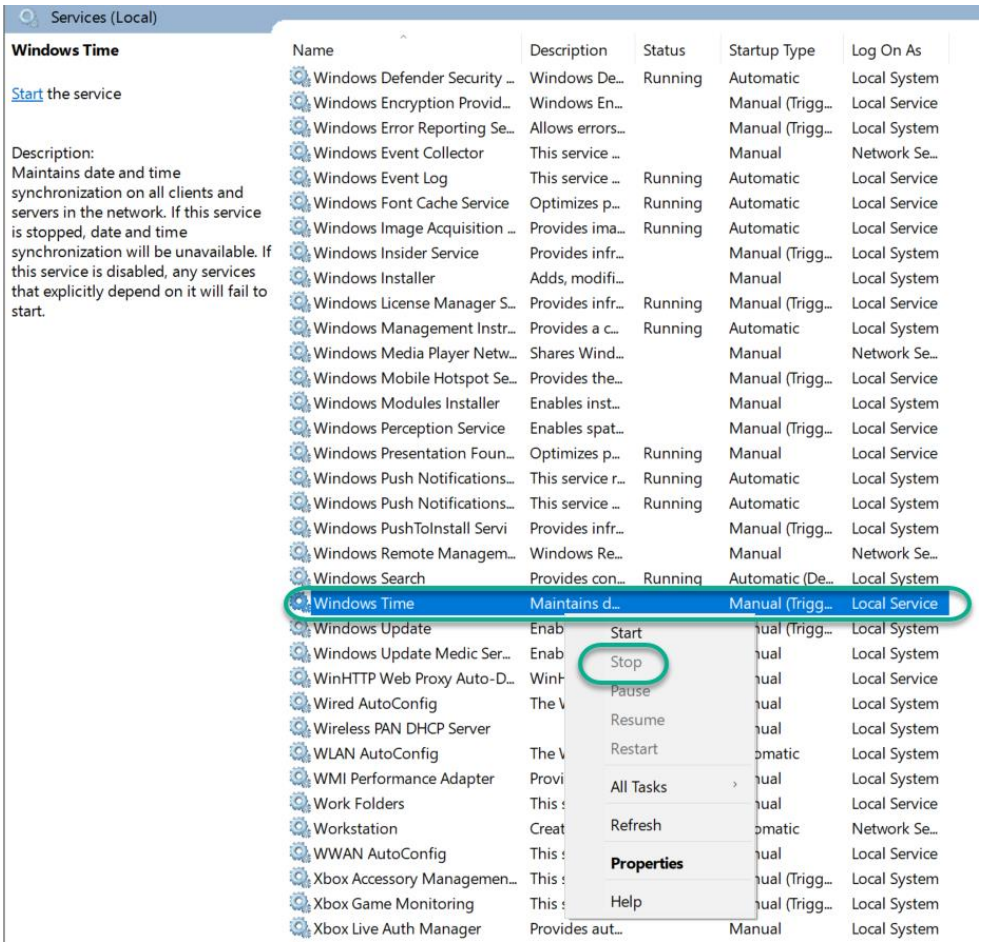
1. In the File Explorer, navigate to: `Control Panel\System and Security\Administrative Tools`
2. Double-click Services.

   This same task can be completed by entering `services.msc` in the Windows Run dialog (Windows Key + R).



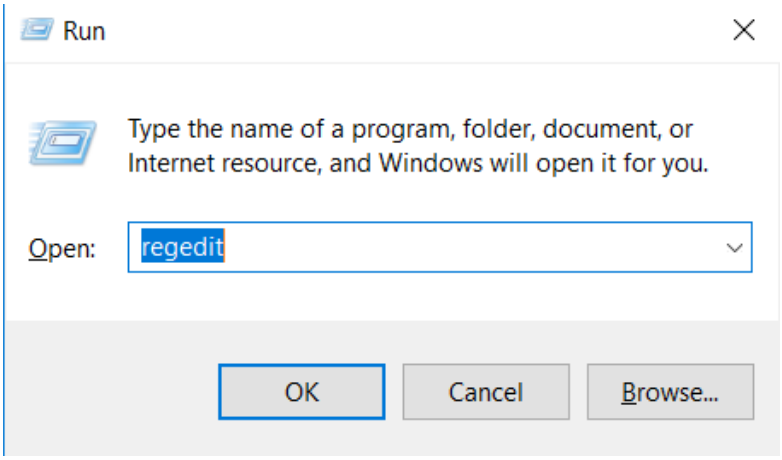
3. In the Services list, right-click on Windows Time and click Stop.

   Note: The Windows Time service may already be stopped. In this case, skip this step and go to the next step to Update the Windows Registry.

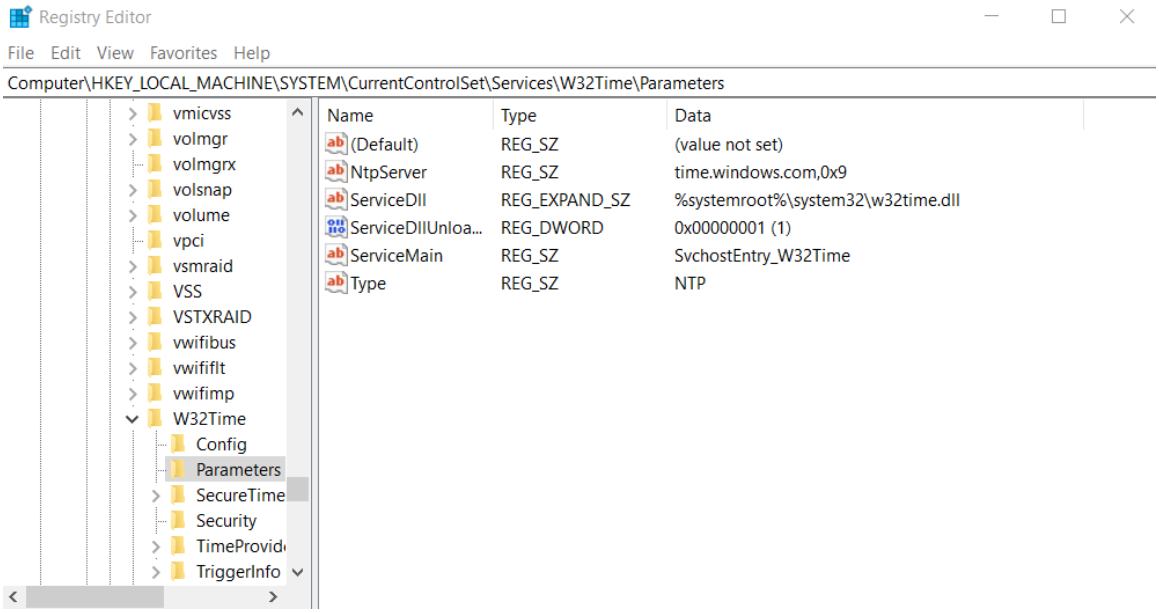


5.1.1.2 UPDATE THE WINDOWS REGISTRY TO CREATE A LOCAL NTP SERVICE

1. Launch Windows Run (Windows Key + R).
2. Enter `regedit` and click OK.

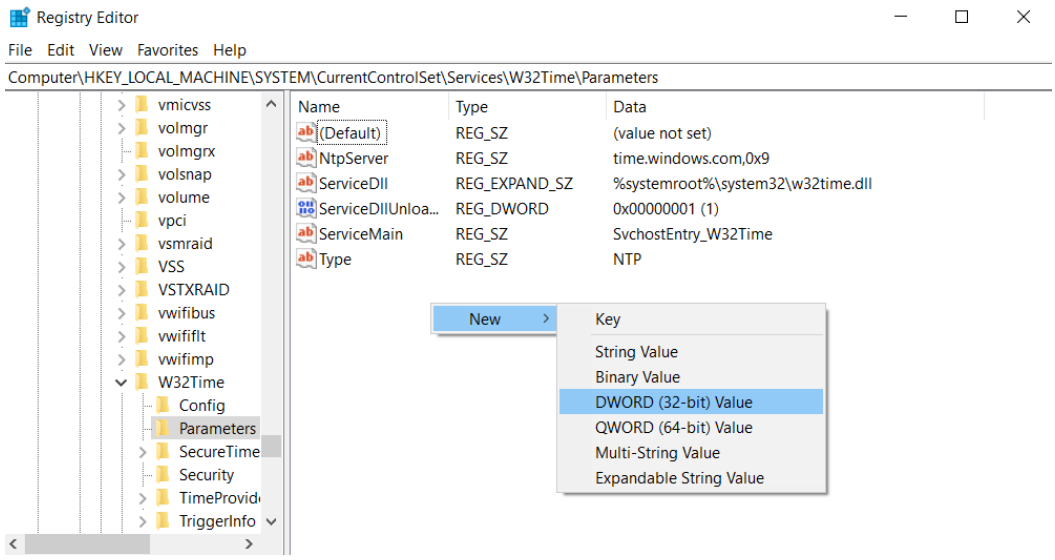


3. Navigate to the registry key: `Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters`



4. If you do NOT see LocalNTP REG_DWORD in the list, create it using the following steps.

    1. Right-click in the Registry Editor, select New, select DWORD, and enter LocalNTP (note that this name is case sensitive).



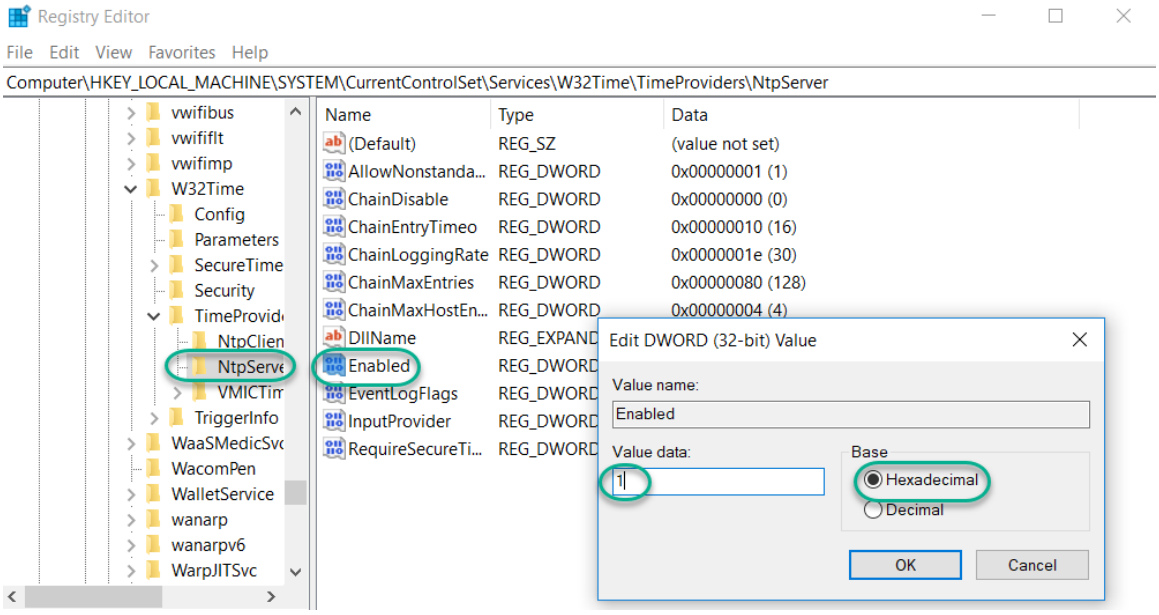
    2. Double-click LocalNTP, change the Value data to 1, select a Base of Hexadecimal, and click OK.

5. Do not close the Registry Editor because it is used in the following steps.

5.1.1.3 UPDATE THE WINDOWS REGISTRY TO CONFIGURE THE TIME PROVIDER

1. Navigate to the registry key: `Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders`

2. Select NtpServer, double-click Enabled, change the Value Data to 1, select a Base of Hexadecimal, and click OK.

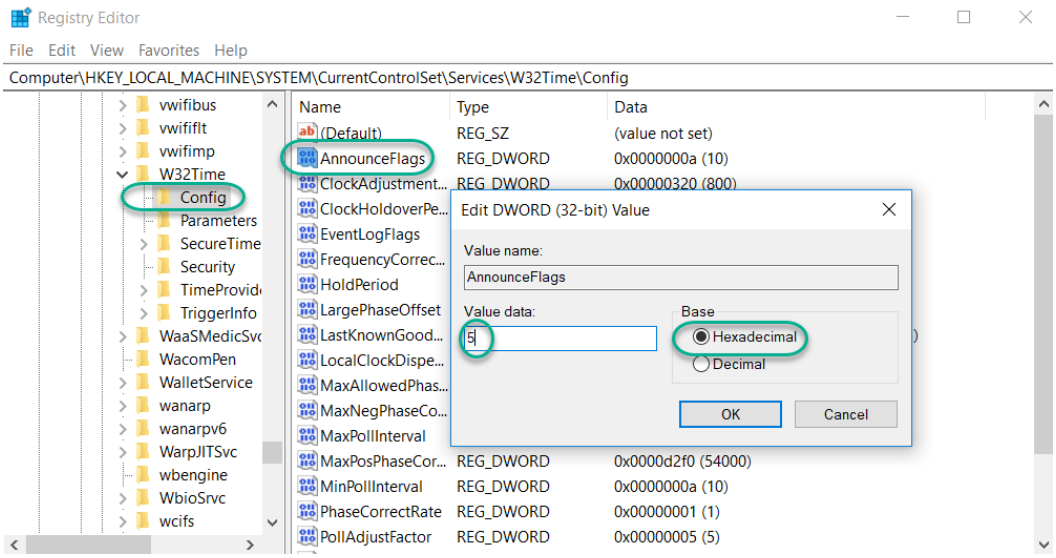


3. Do not close the Registry Editor because it is used in the following steps.

5.1.1.4 UPDATE THE WINDOWS REGISTRY TO CONFIGURE THE ANNOUNCE FLAGS

1. Navigate to the registry key: Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config

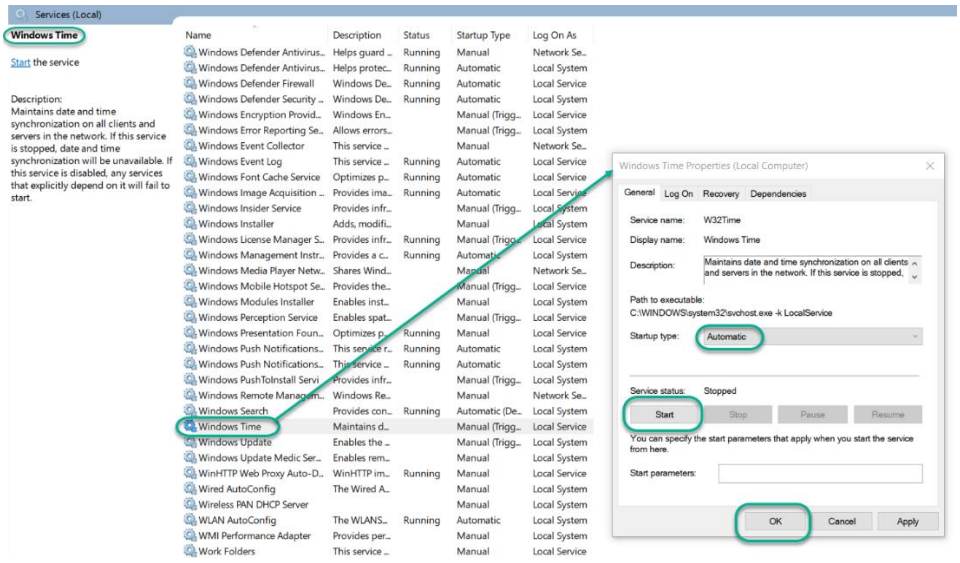
2. Double-click AnnounceFlags, change the Value data to 5, select a Base of Hexadecimal, and click OK.



3. Close the Registry Editor.

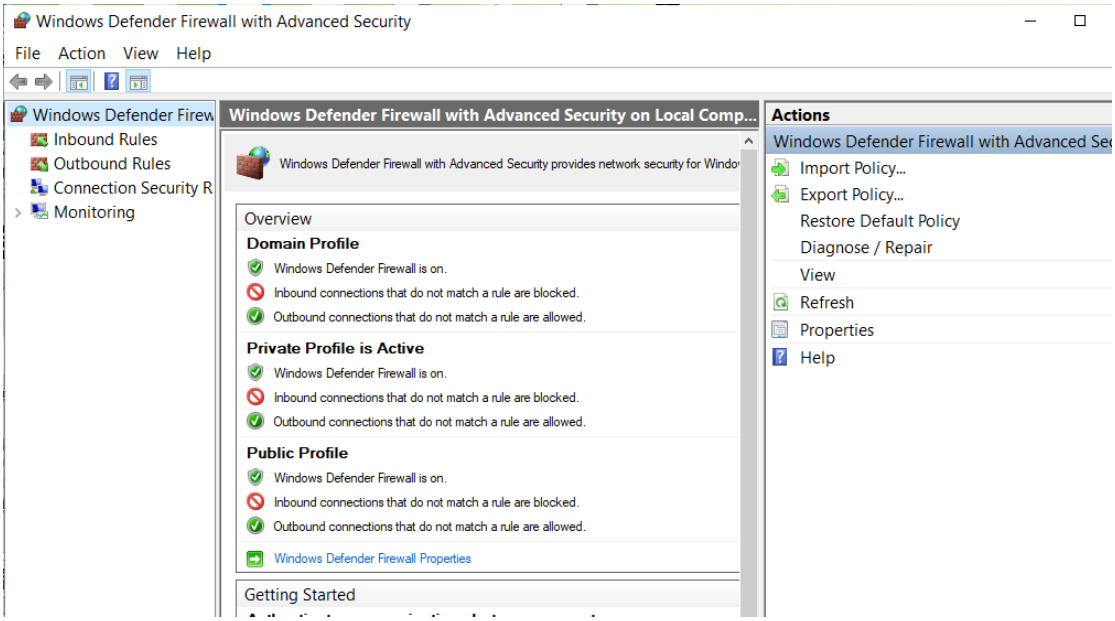
5.1.1.5 START THE LOCAL WINDOWS NTP TIME SERVICE

1. In the File Explorer, navigate to: `Control Panel\System and Security\Administrative Tools`
2. Double-click Services.
3. In the Services list, right-click on Windows Time and configure the following settings:
    1. Startup type: Automatic
    2. Service Status: Start
    3. OK

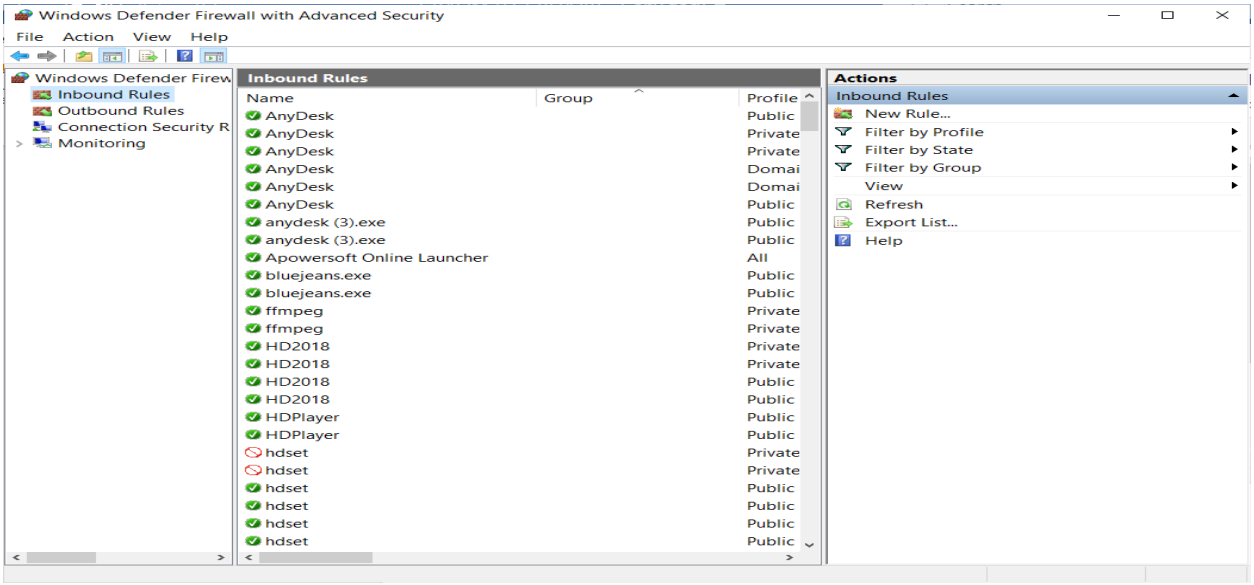


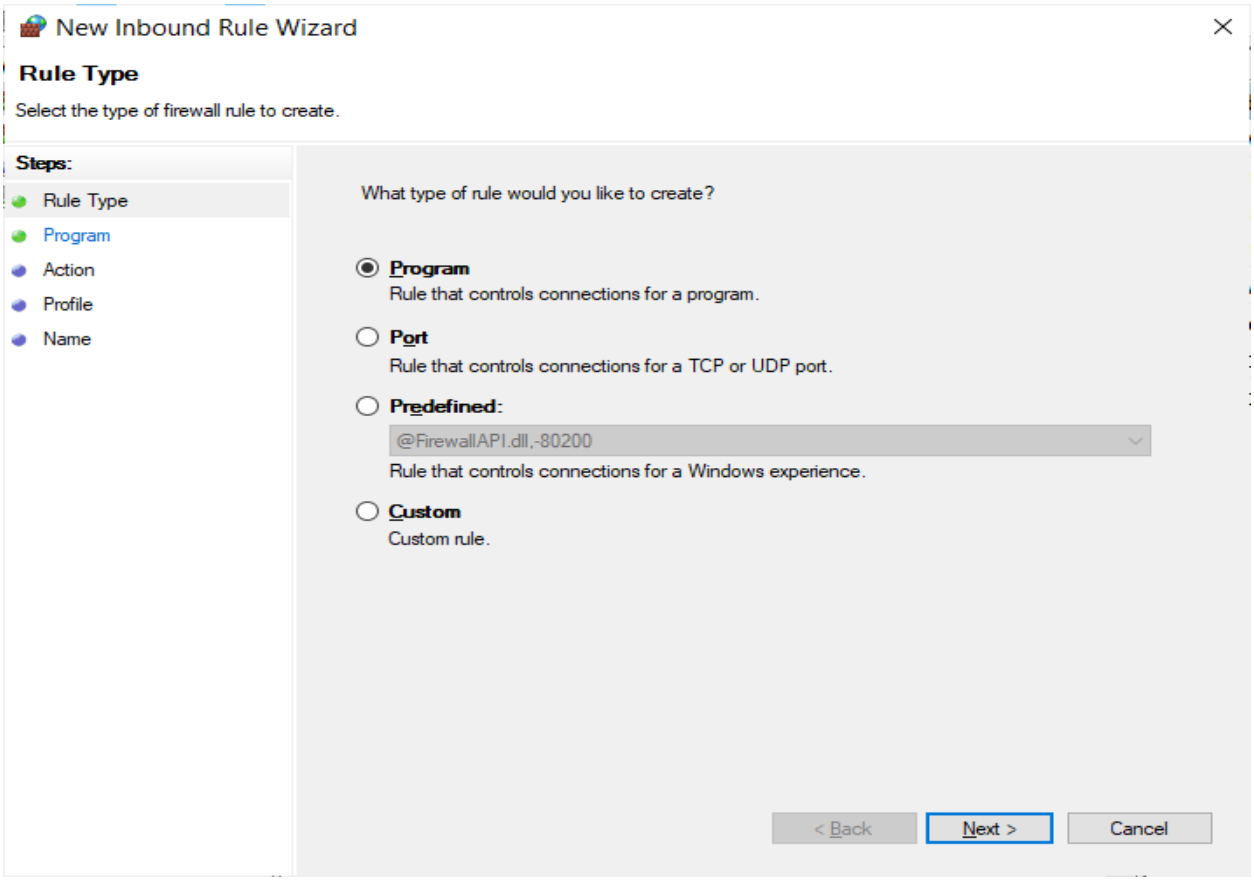
The local NTP Time Server configuration is now complete. You now can synchronize the time of other computers and devices on your local network.

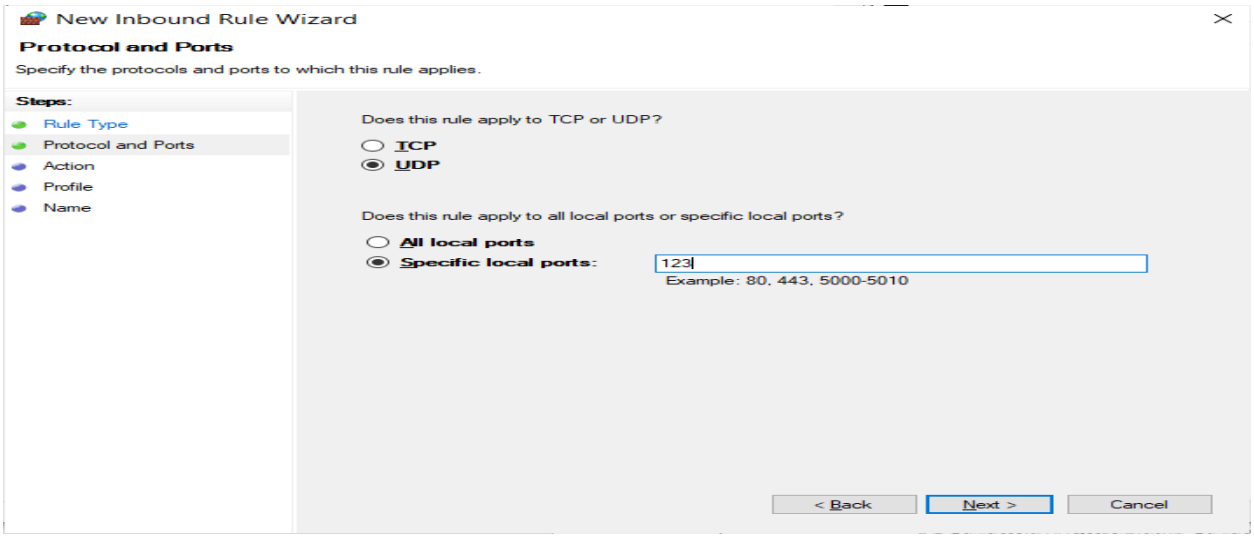
5.2 WINDOWS FIREWALL SETTINGS

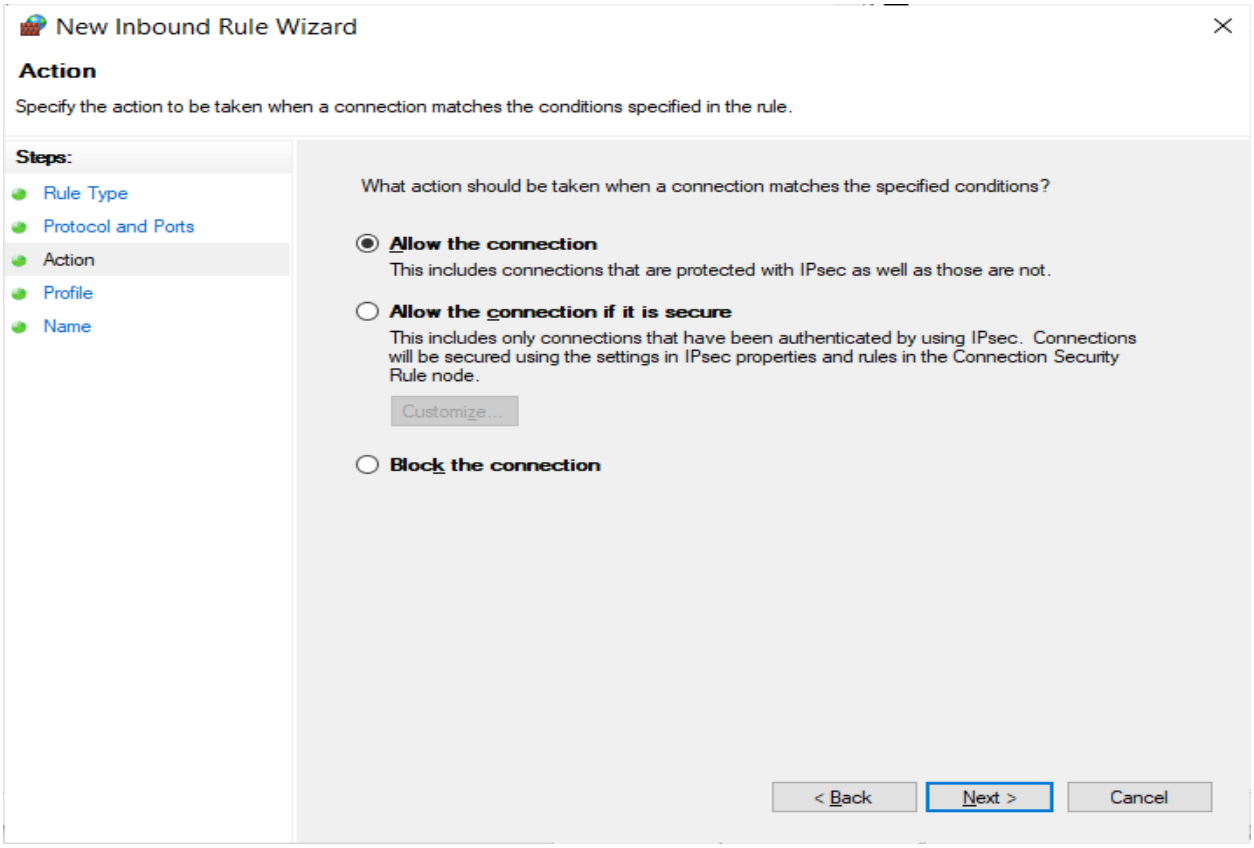


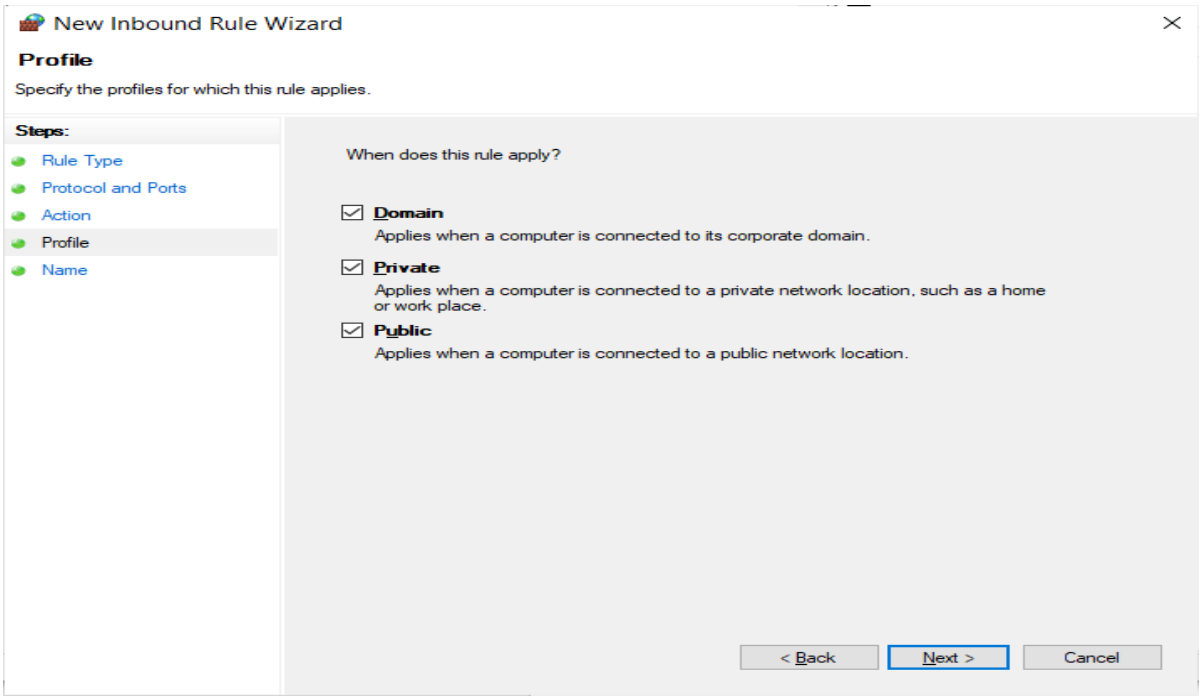
5.3 INBOUND RULES

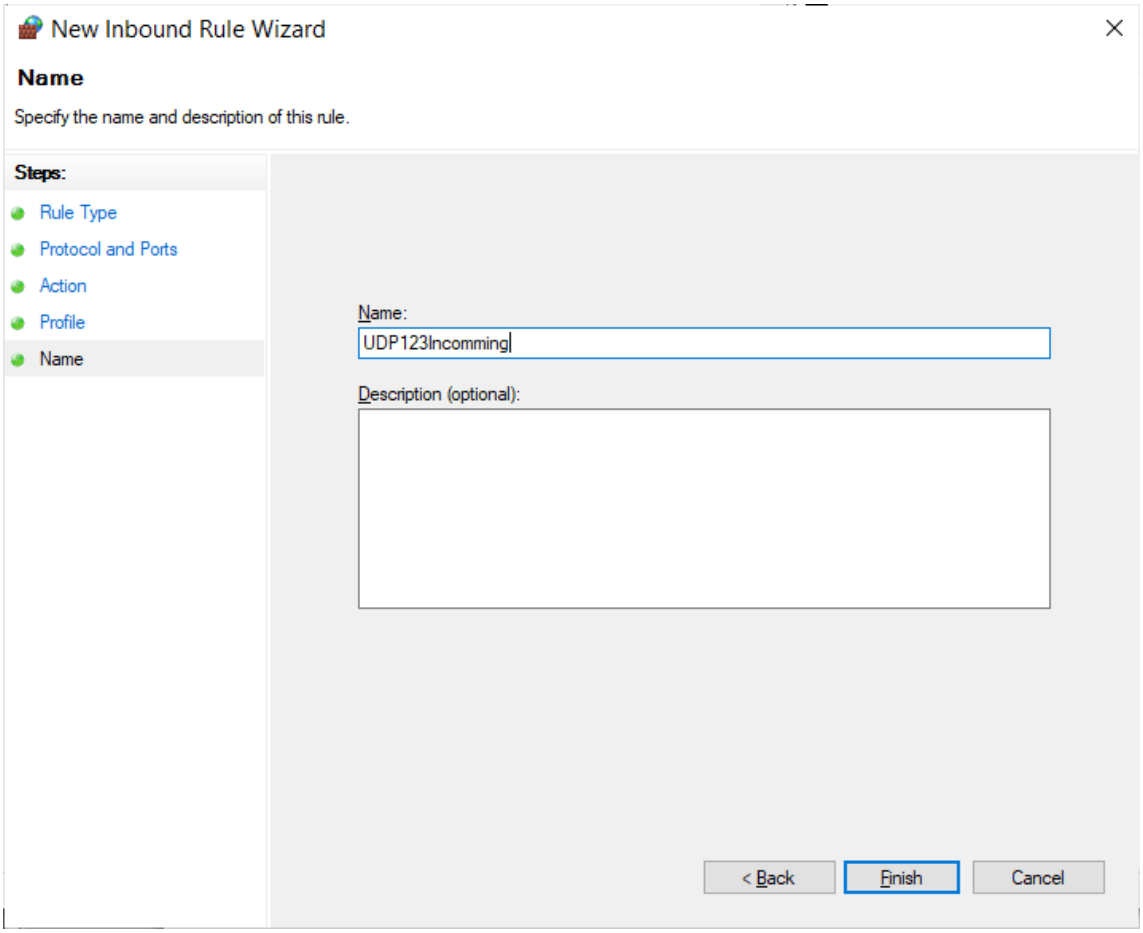




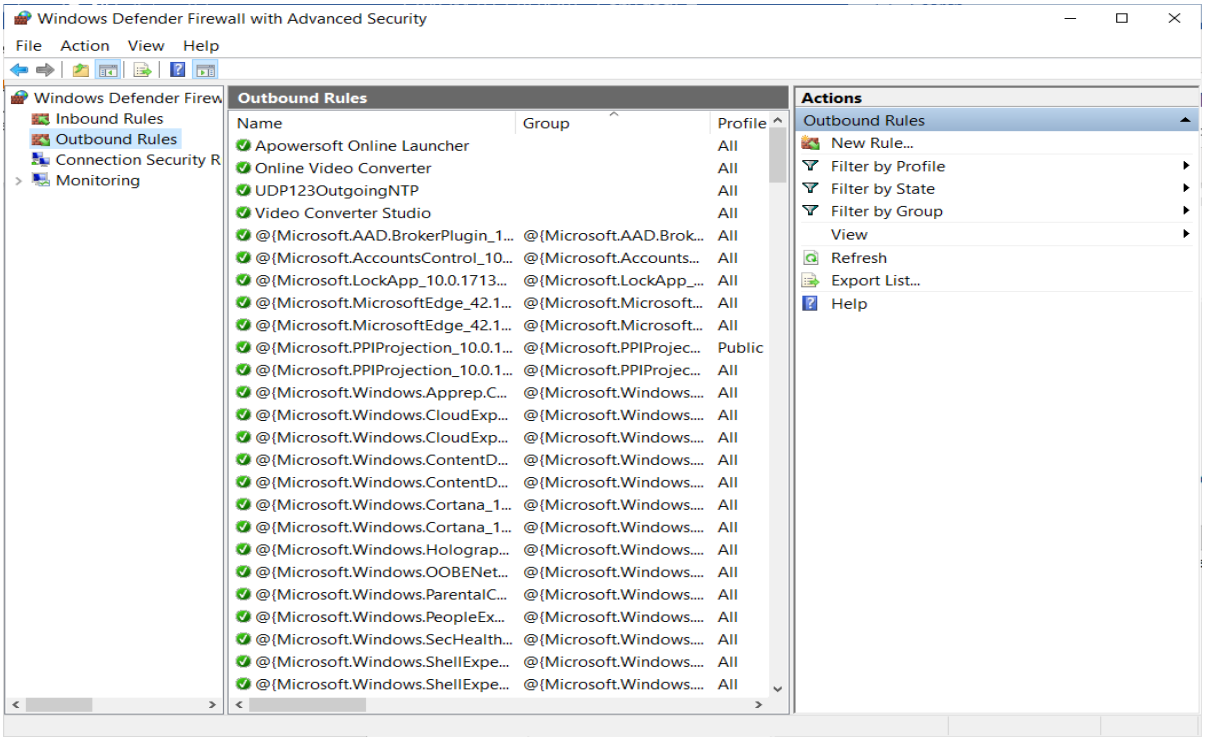

New Inbound Rule Wizard
Protocol and Ports
Specify the protocols and ports to which this rule applies.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
Does this rule apply to TCP or UDP?
TCP
UDP
Does this rule apply to all local ports or specific local ports?
All local ports
Specific local ports:
123
Example: 80, 443, 5000-5010
< Back
Next >
Cancel

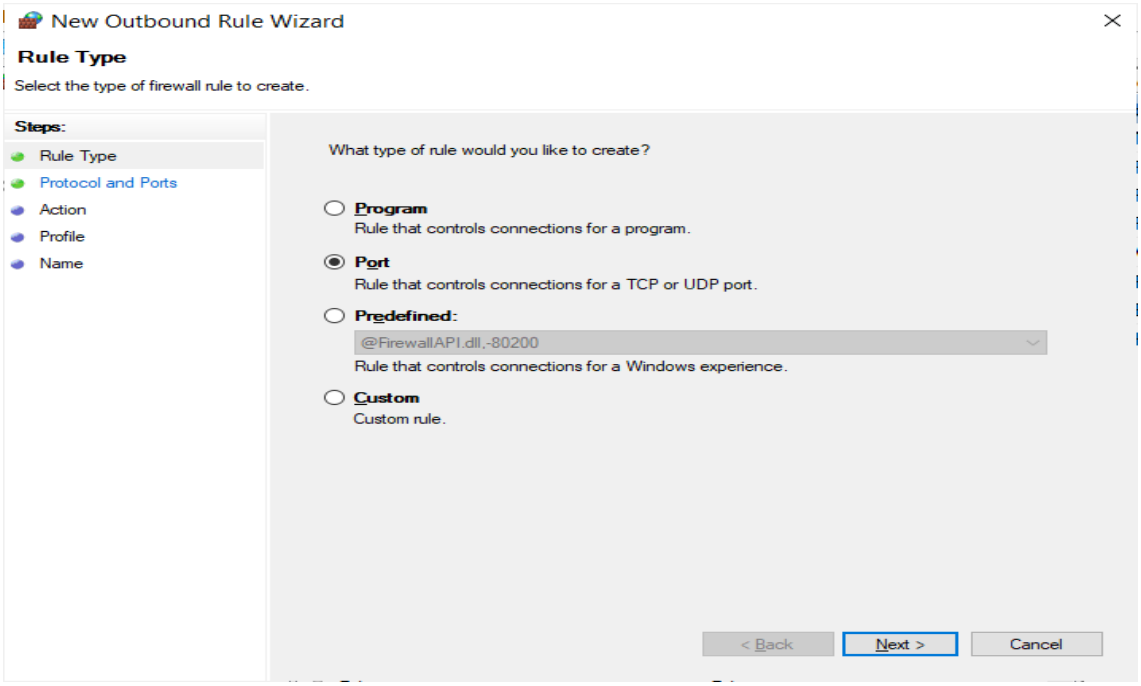

New Inbound Rule Wizard
Action
Specify the action to be taken when a connection matches the conditions specified in the rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What action should be taken when a connection matches the specified conditions?
Allow the connection
This includes connections that are protected with IPsec as well as those are not.
Allow the connection if it is secure
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.
Customize...
Block the connection
< Back
Next >
Cancel

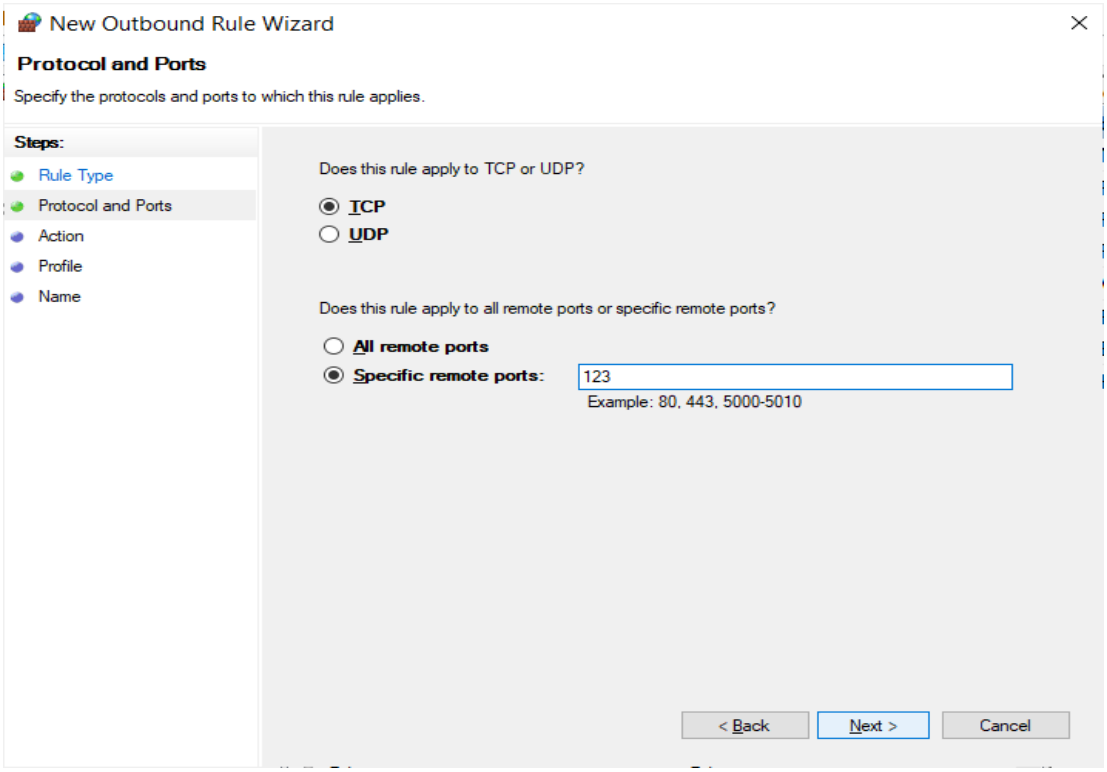

New Inbound Rule Wizard
Profile
Specify the profiles for which this rule applies.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
When does this rule apply?
Domain
Applies when a computer is connected to its corporate domain.
Private
Applies when a computer is connected to a private network location, such as a home or work place.
Public
Applies when a computer is connected to a public network location.
< Back
Next >
Cancel


New Inbound Rule Wizard
Name
Specify the name and description of this rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
Name:
UDP123Incomming
Description (optional):
< Back
Finish
Cancel

5.4 OUTBOUND RULES



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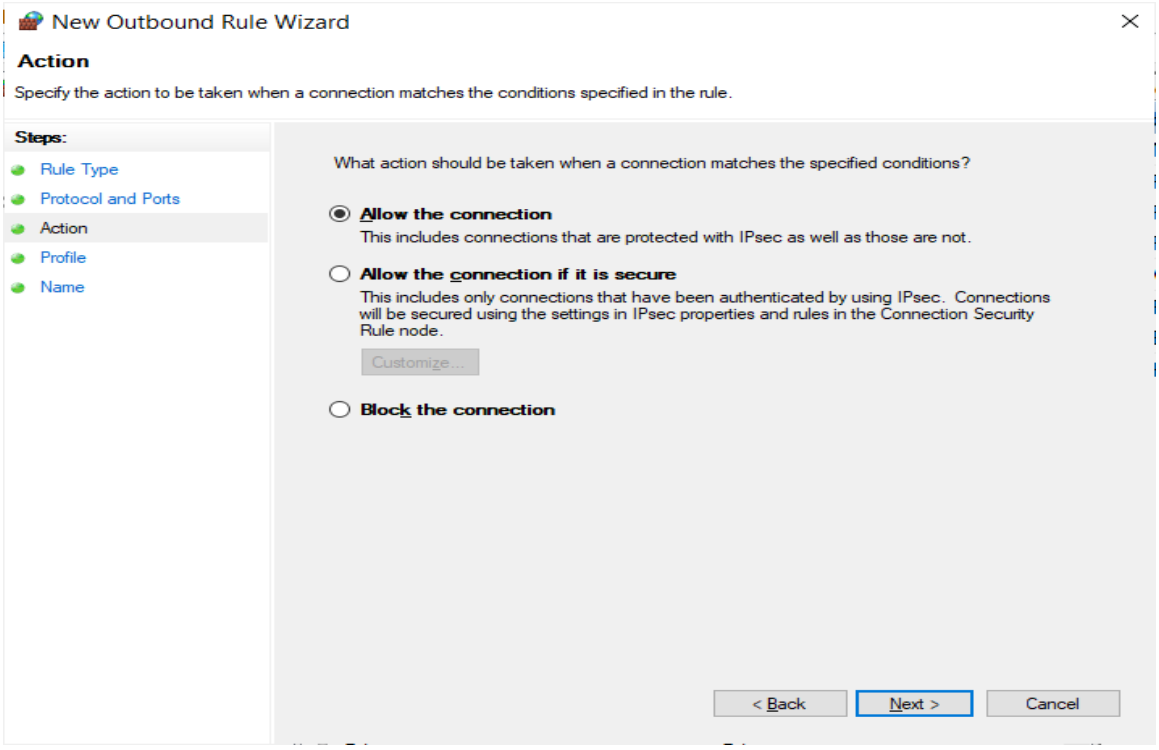
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Specify the action to be taken when a connection matches the conditions specified in the rule.
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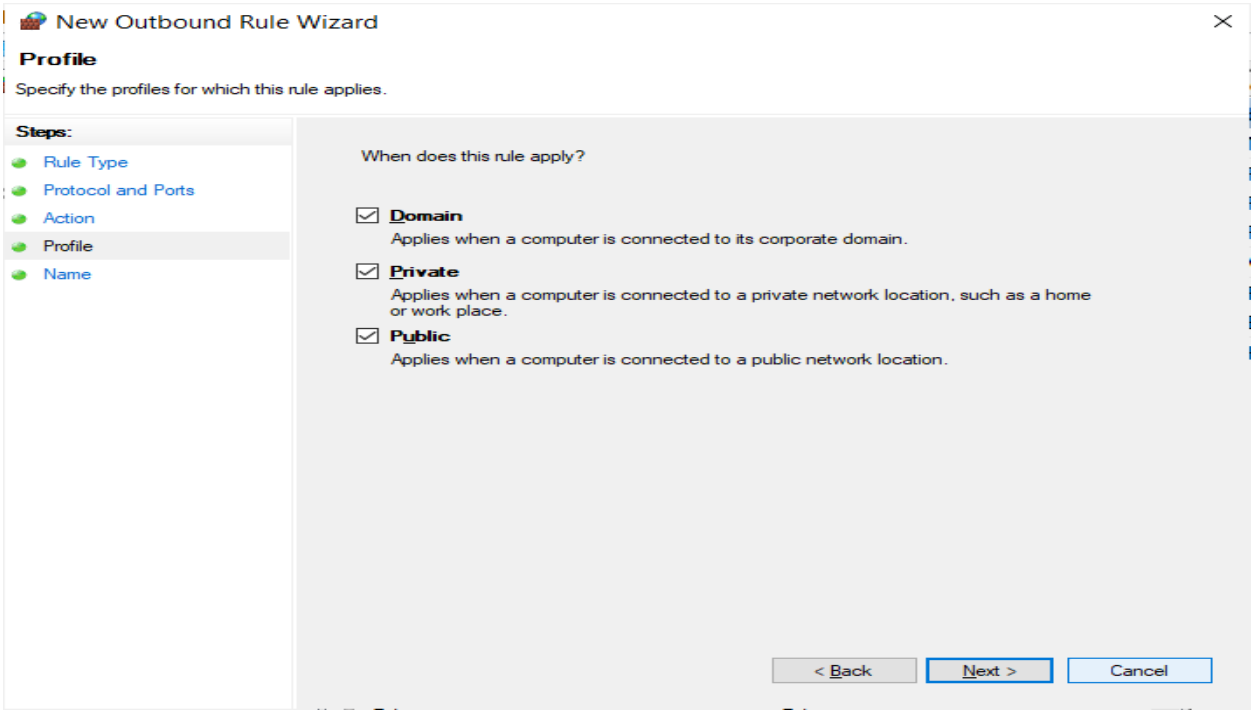
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Next >
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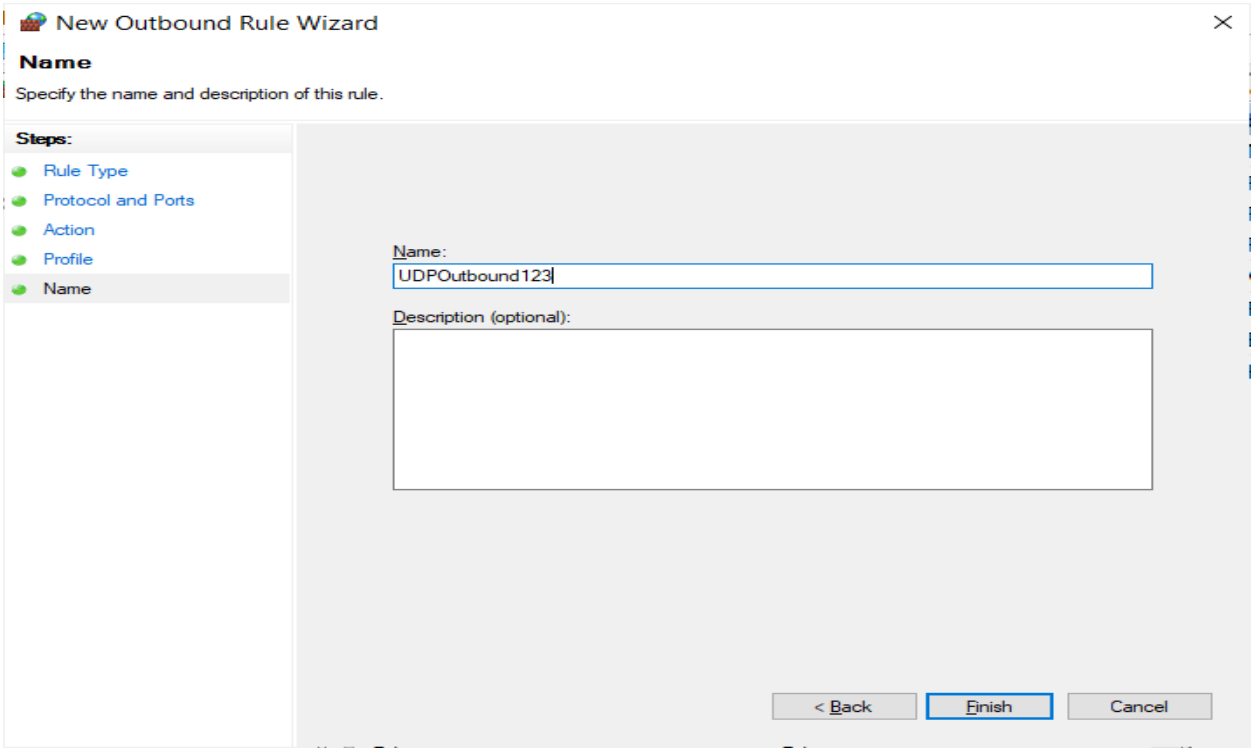
New Outbound Rule Wizard
Name
Specify the name and description of this rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
Name:
UDPOutbound123
Description (optional):
< Back
Finish
Cancel