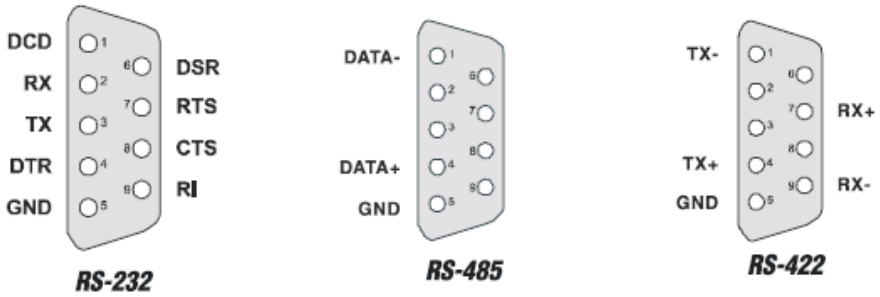
2.3.5 Serial Connection

EKI serial device servers provide 1port, 2port and 4port DB9 connectors. RS-232/ 422/485 pin assignment as below:

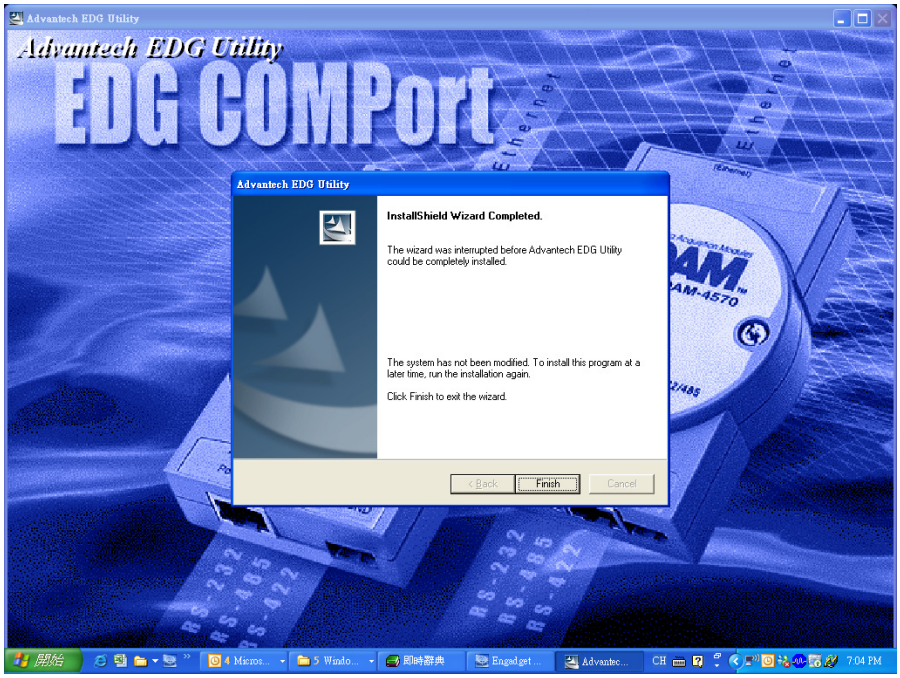


2.4 Configuration Utility installation

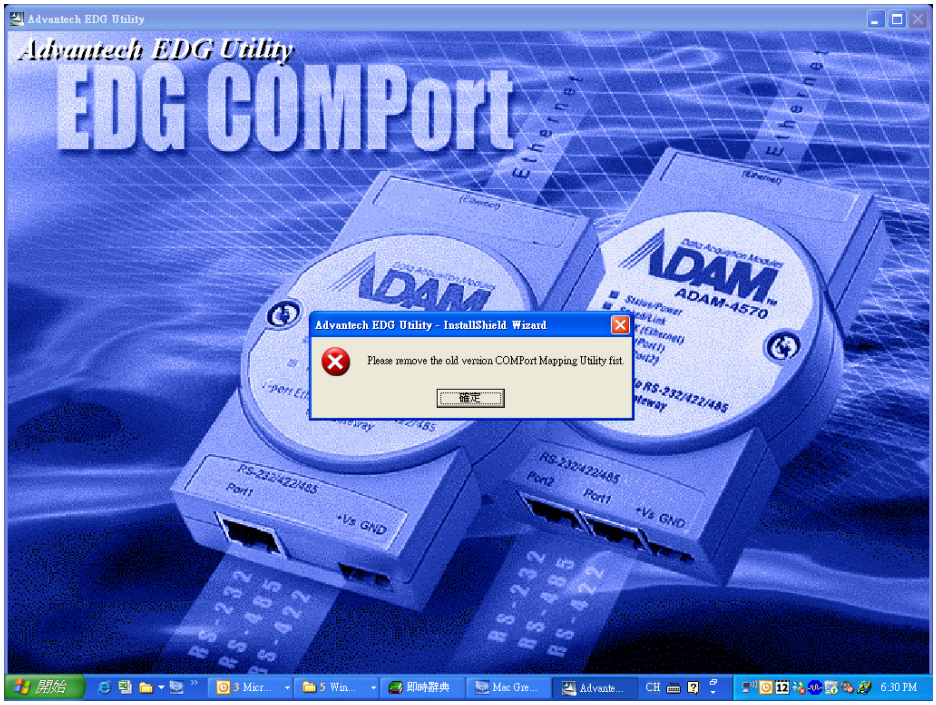
Advantech EKI serial device server Utility integrates device server management and virtual COM port configuration. After installation, this utility not only configures the EKI series device servers, but also connects and configures the ADAM series and EDG series device servers. Virtual COM port configuration and management was also integrated in this utility. The best improvement, you don't restart the host while you setup new virtual COM ports. When you map the virtual COM port, the COM port will enable immediately and show in Windows Device Manager.

In order to use a PC and an Ethernet network to control serial devices connected to the EKI serial device server, you must first have a host running Windows NT/2000/ XP. This type of application also requires the host to have an Ethernet card and the TCP/IP protocol installed. The following are the required steps for EKI serial device server

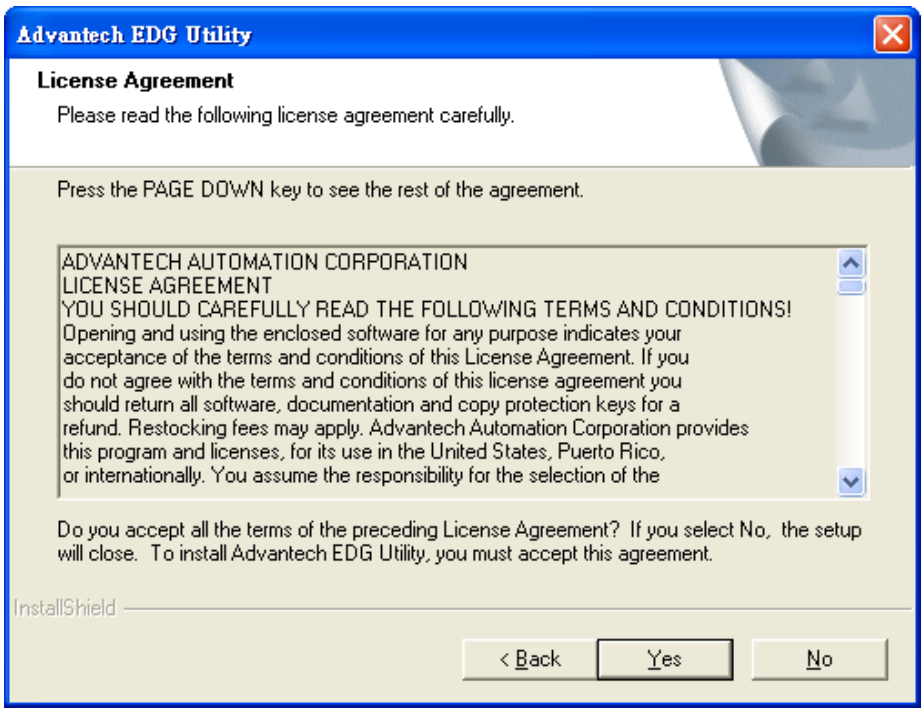
1. Insert the Advantech industrial communication CD-ROM into the drive (e.g. D:\) on the host PC. Change the host computer's default drive from C: to D:
2. Use your Windows Explorer or the Windows Run command to execute the Setup program (the path for the Setup program on the CD-ROM should be on the CD-ROM should be:
3. Upon executing the setup program, the Welcome Dialog Box will popup. Press the "Next" button to continue.



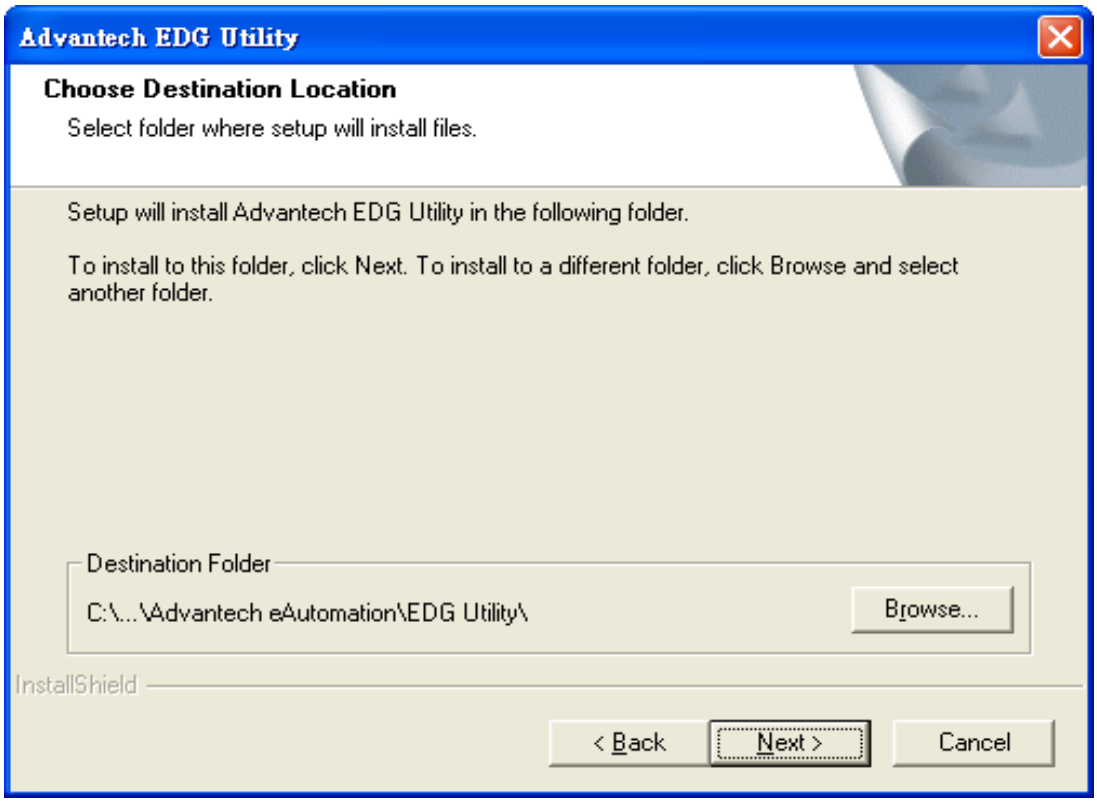
4. If there is an existed COM port mapping utility on host, you have to remove this to go on installing.



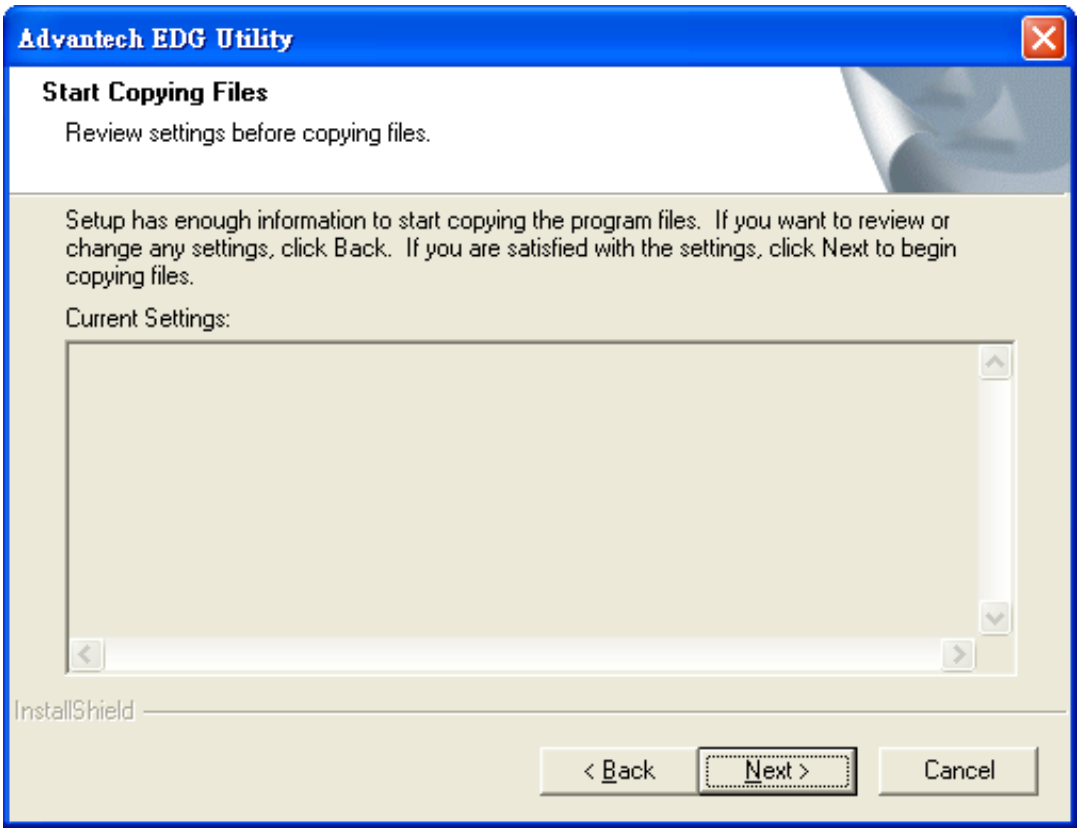
5. Carefully read the Software License Agreement, and press "Yes" to continue.



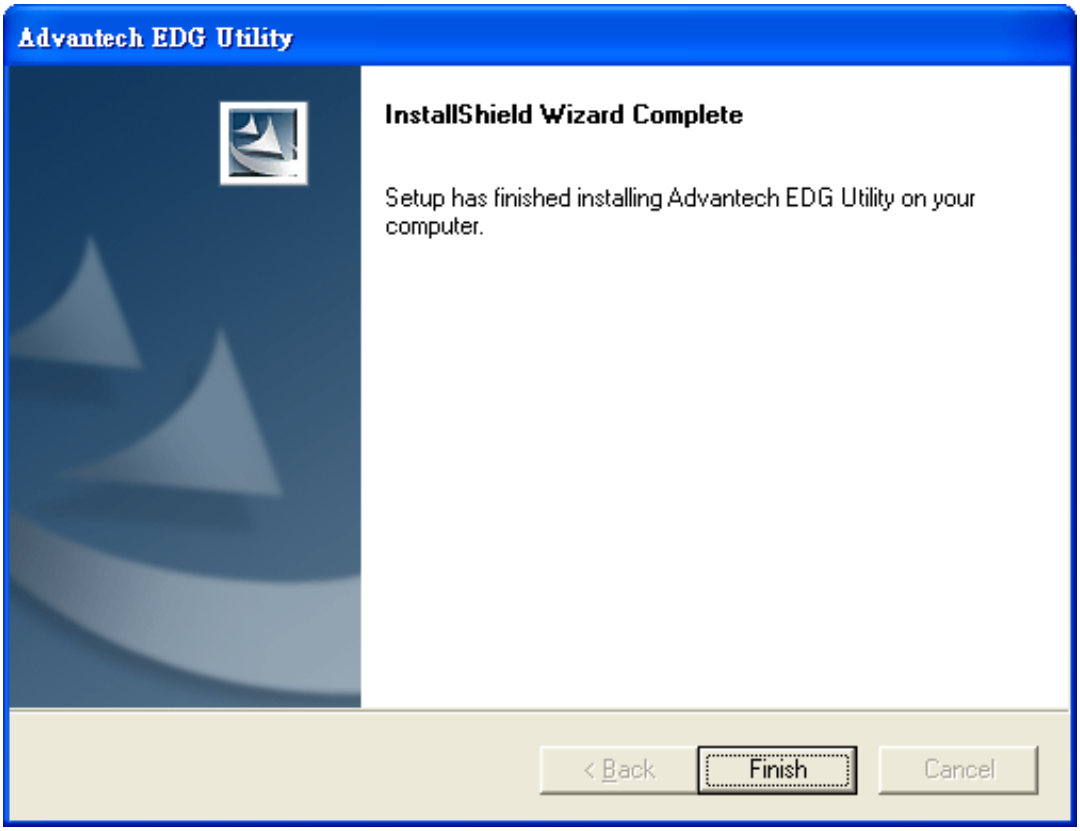
6. The Setup program will specify a default installation path, C:\Program-Files\Advantech\EDG COMPort Utility.



7. In this step, you may select a specific program folder or just use the default setting and press "Next".



8. After setup has copied all program files to your computer, click the <Finish> button to finish the installation.


Advantech EDG Utility
InstallShield Wizard Complete
Setup has finished installing Advantech EDG Utility on your computer.
< Back
Finish
Cancel

Chapter 3

Configuring Serial Device Server

3.1 Configuration Utility Overview

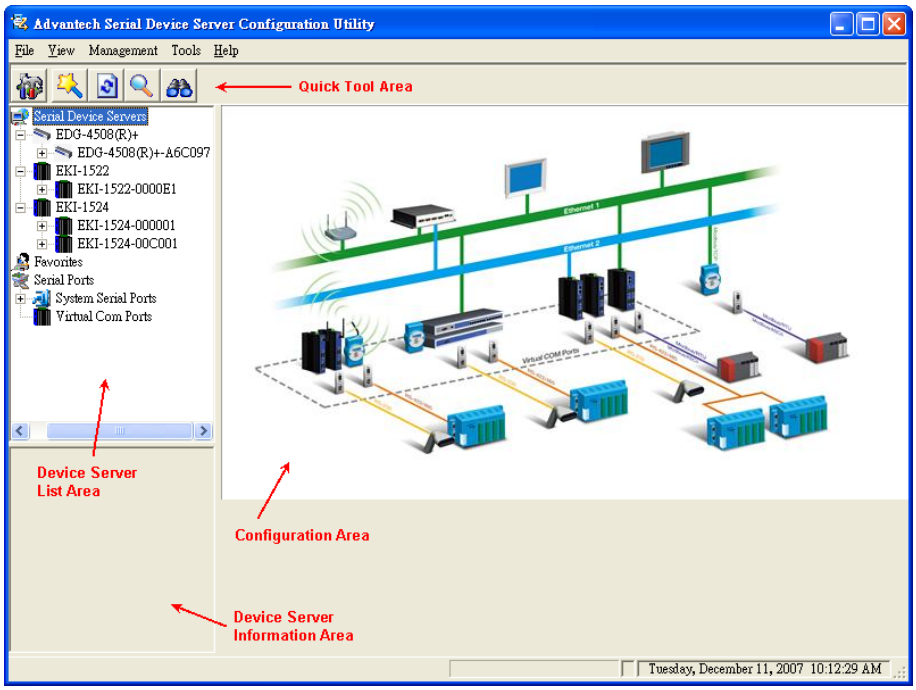
EKI serial device servers provide an easy-to-use configuration utility to configure your Serial Device Server through an Ethernet connection. For secure administration, it can also restrict the access rights for configuration to only one host PC to enhance network security. With this secure function enabled, other PCs will not have permission for configuration. After the installation program on the Advantech INet CD is finished, the serial device servers will be ready for use and configure.

Advantech Serial Device Server utility is excellent device server management tools. You can connect and configure the local and remote Advantech serial device servers easily, moreover, Virtual COM port will be enabled in the same utility. Using this utility, you can

- Configure the network settings (you can set the IP address, Gateway address, and Subnet mask)
- Configure Wi-Fi encryption settings
- View and set the serial port parameters (configure operating mode, baud rate, serial port settings and operating mode settings)
- Perform diagnostic tests (virtual COM port testing, port status list)
- Perform administrative functions (export and import the serial device server setting, manage access IP, set user account, a descriptive name, upgrade firmware)
- Configure COM port redirector(virtual COM port)

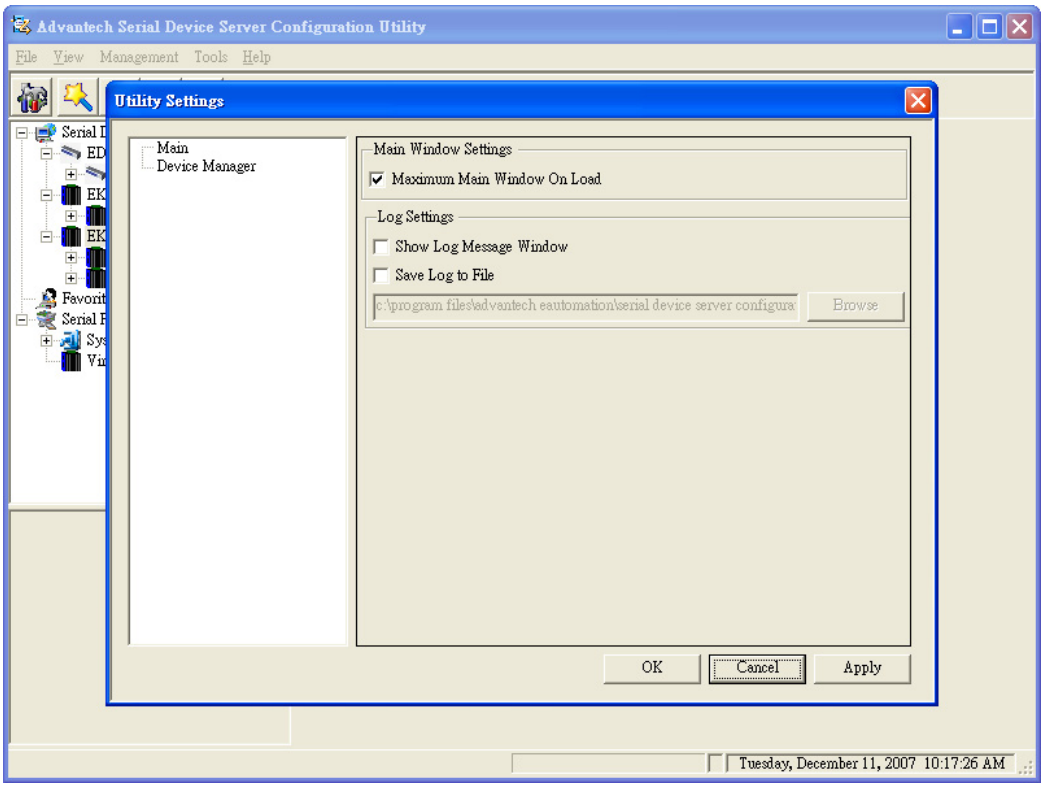
There are 4 major areas in this new serial device server utility.

- Device Server List Area: All devices will be searched and listed in this view. You can arrange different favorite group and virtual COM ports
- Device Server Information Area: Click on the server or move cursor to the device, the related information will be shown on this view.
- Configuration Area: Click on the item on the Device Server List Area, the configuration page will display on this view.
- Quick Tool Area: Useful management functions shortcut.

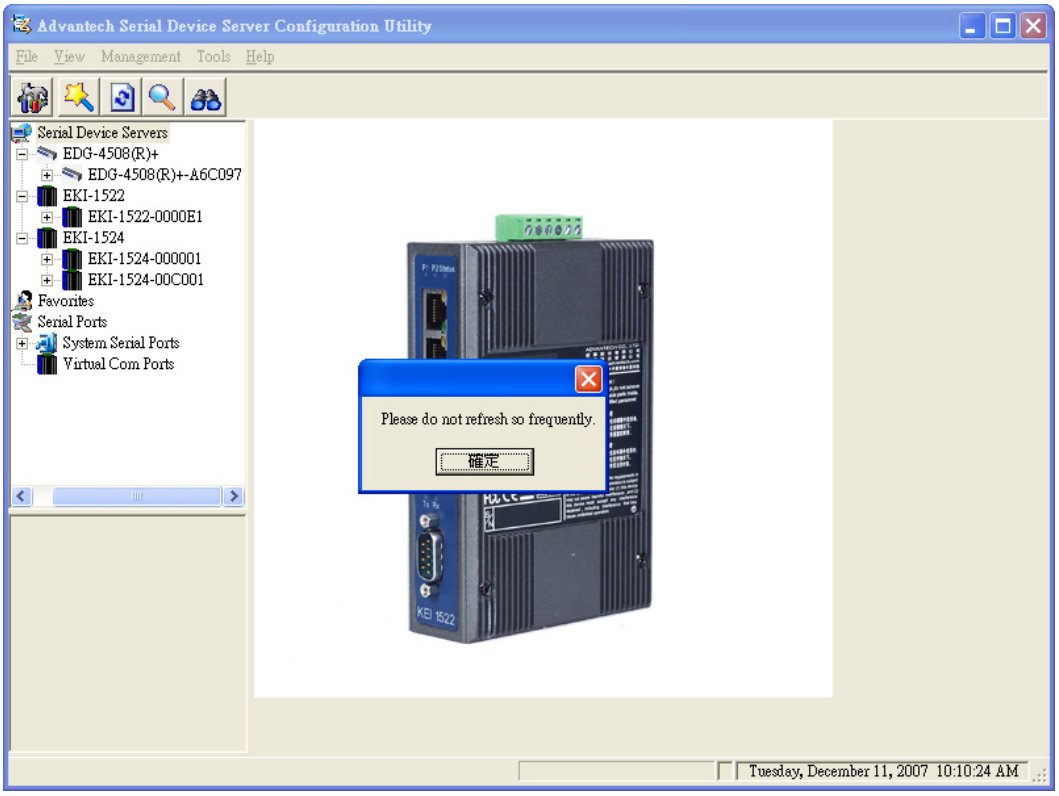


There are five useful management functions shortcut on Quick Tool Area.

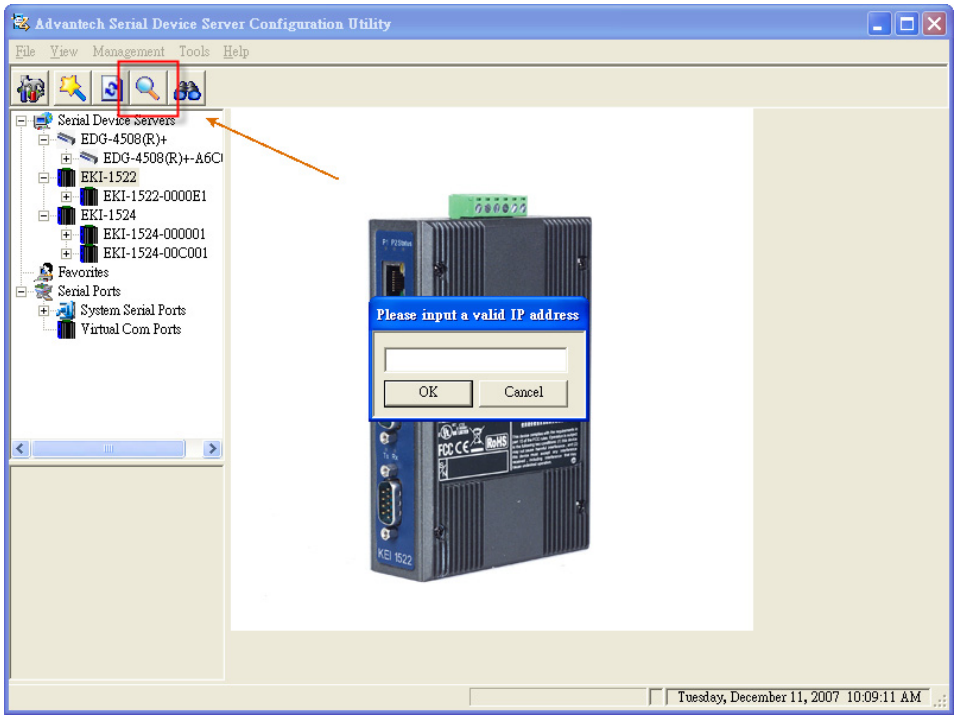
- Utility Setting: Show the configuration utility window



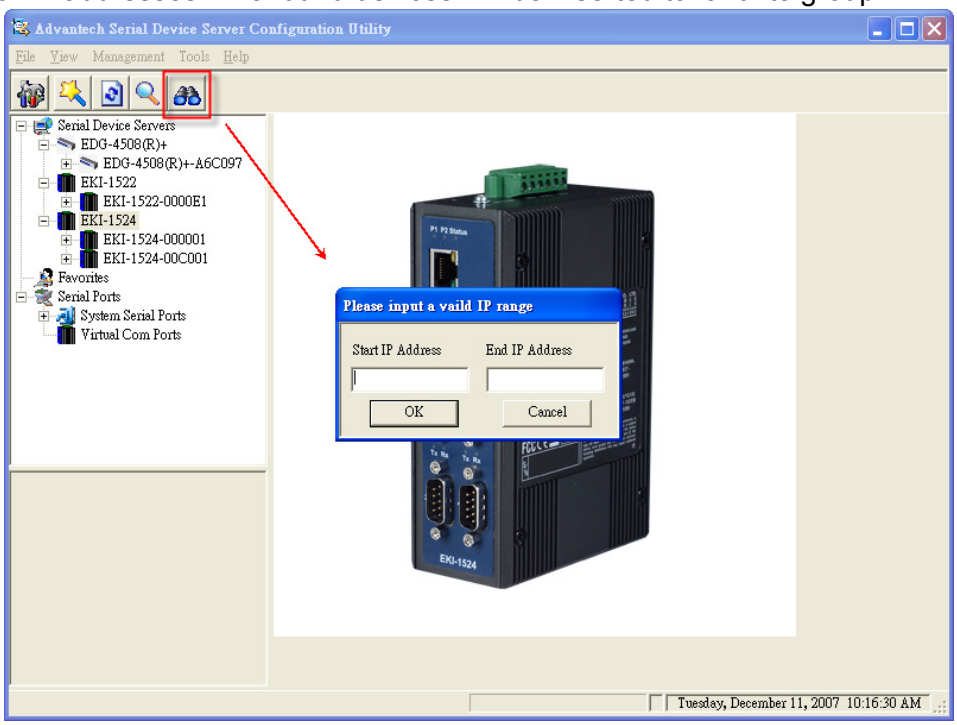
- Clear Device List and Search Again: Click on the button, utility will clear all list device servers in the Device Server List Area and re-search again. Don't use this function frequently. The warning message will be pop-up when you double click this button.



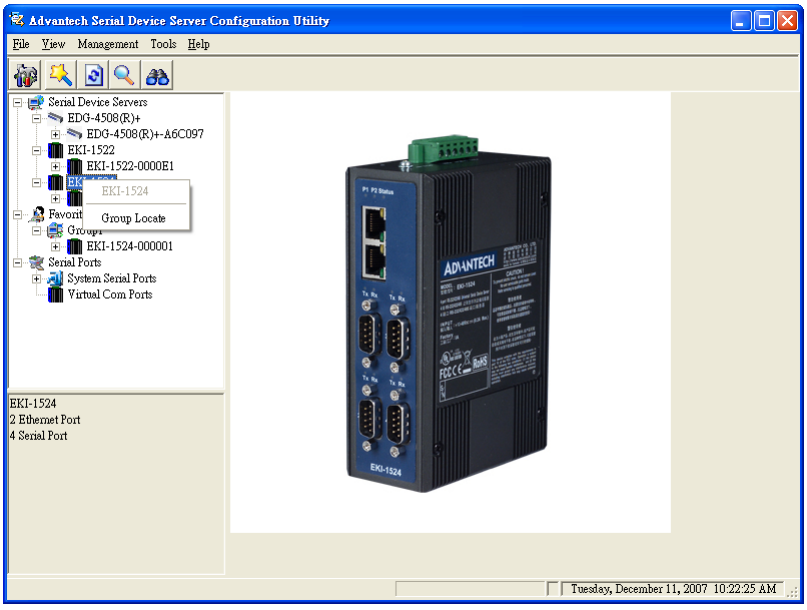
- Search Again: This function will search serial device servers on local LAN.
- Add IP address to Favorite: You add the device to Favorite group manually. This function is especially suitable to find and locate the device which is situated other network domain or Internet. While you can ping the device IP and firewall is configured, input the IP and the device will be added in favorite group. If there isn't favorite group in the EDG Devices Favorites, you have to create at least one favorite group firstly.



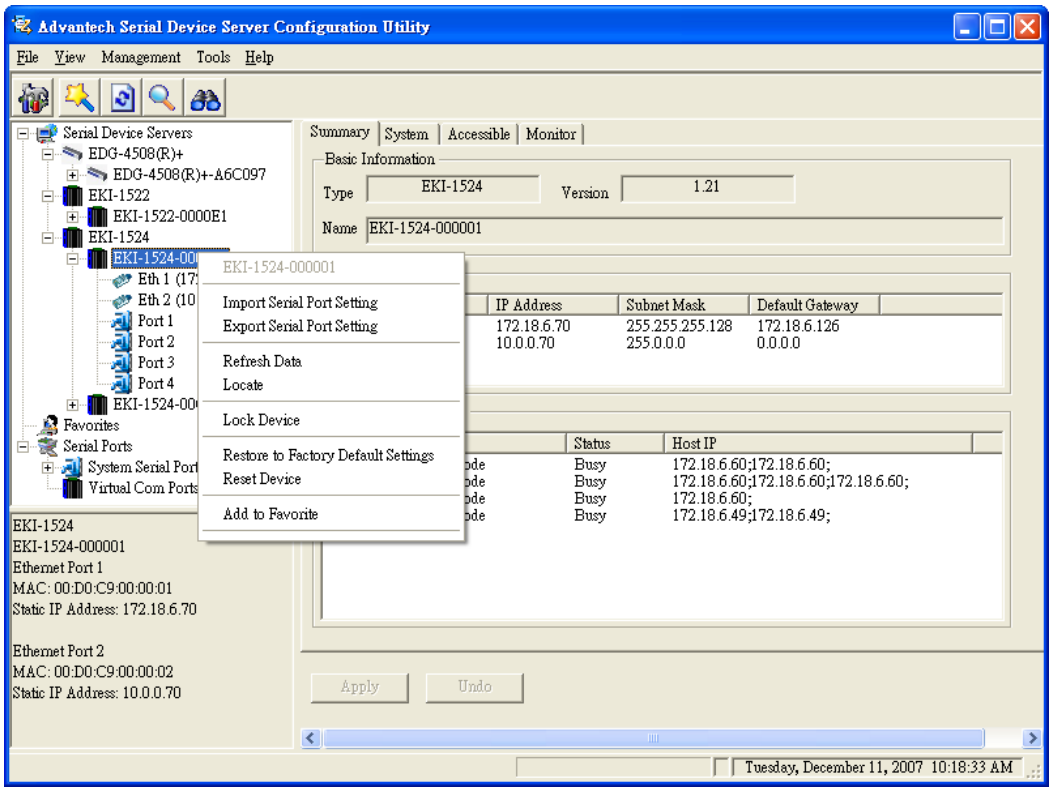
- Search for a range of IP addresses: You also use this function to search a range of IP addresses. The found devices will be inserted to favorite group.



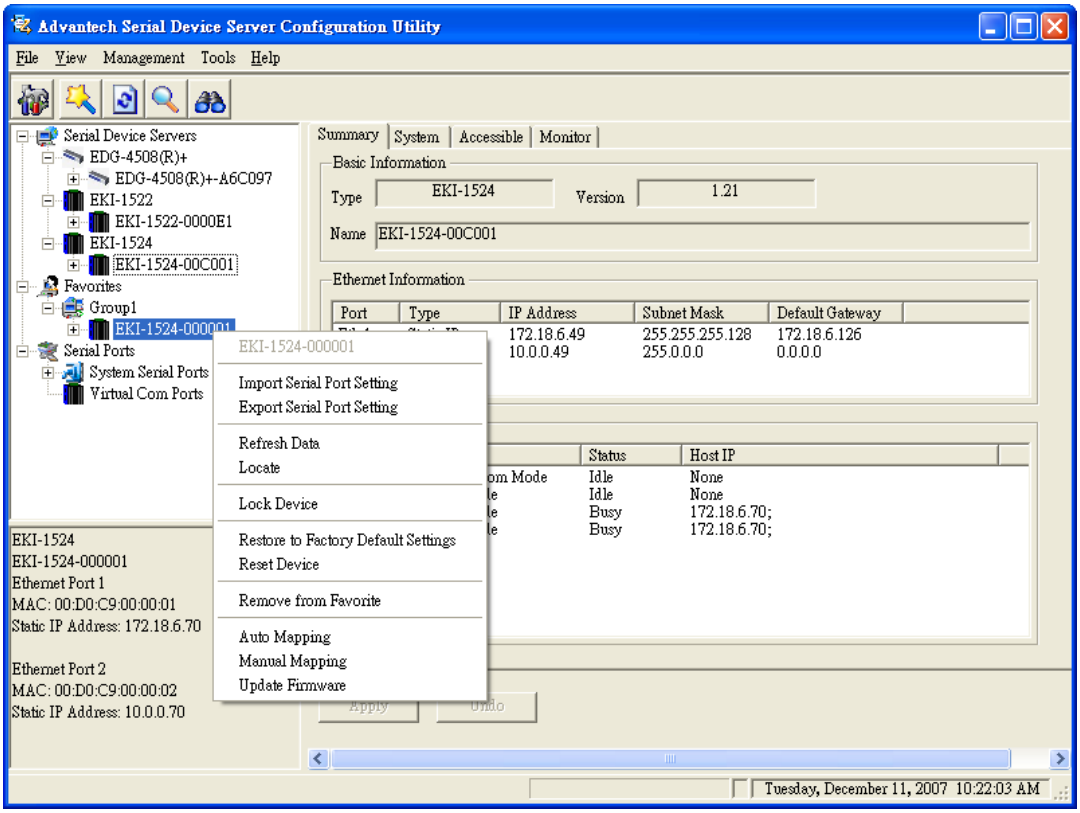
Move the cursor to Device Server list area, right click the model name in EDG Device server tree. You can add all devices in this subtree to favorite group.



Right click on Device name on the mode name subtree, you can export and import serial port setting, locate the device, lock the device, restart the device, and move the device to favorite group.



The device in the favorite group can setup the virtual COM ports and update firmware.

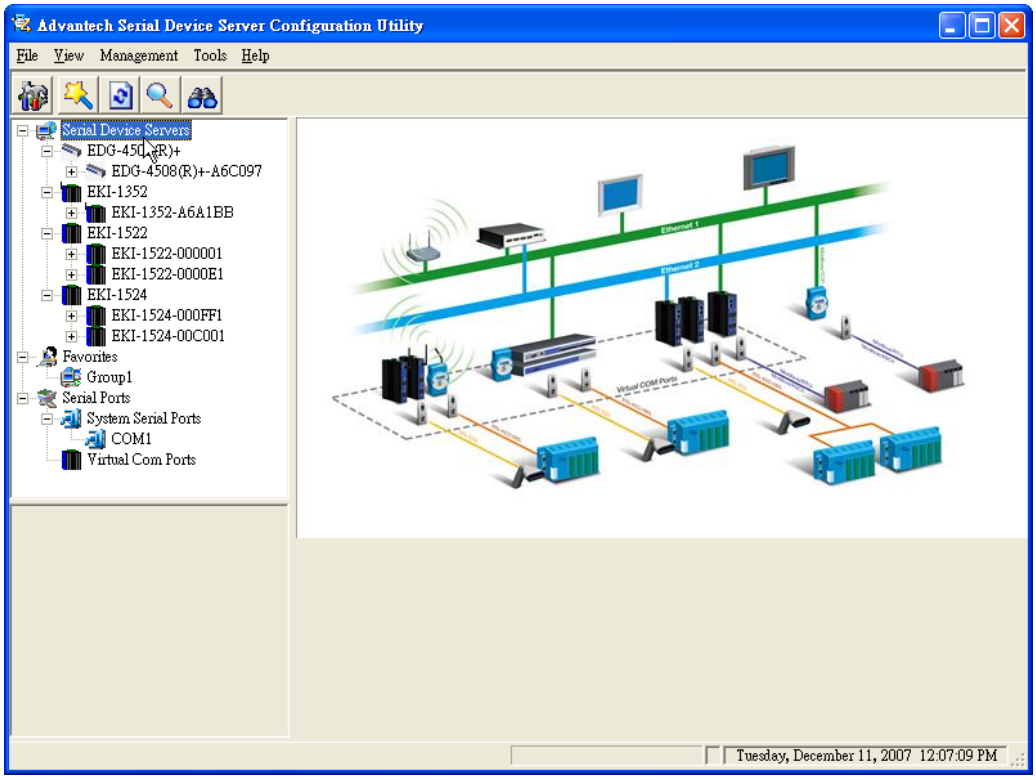


3.2 Discovering Serial Device Servers

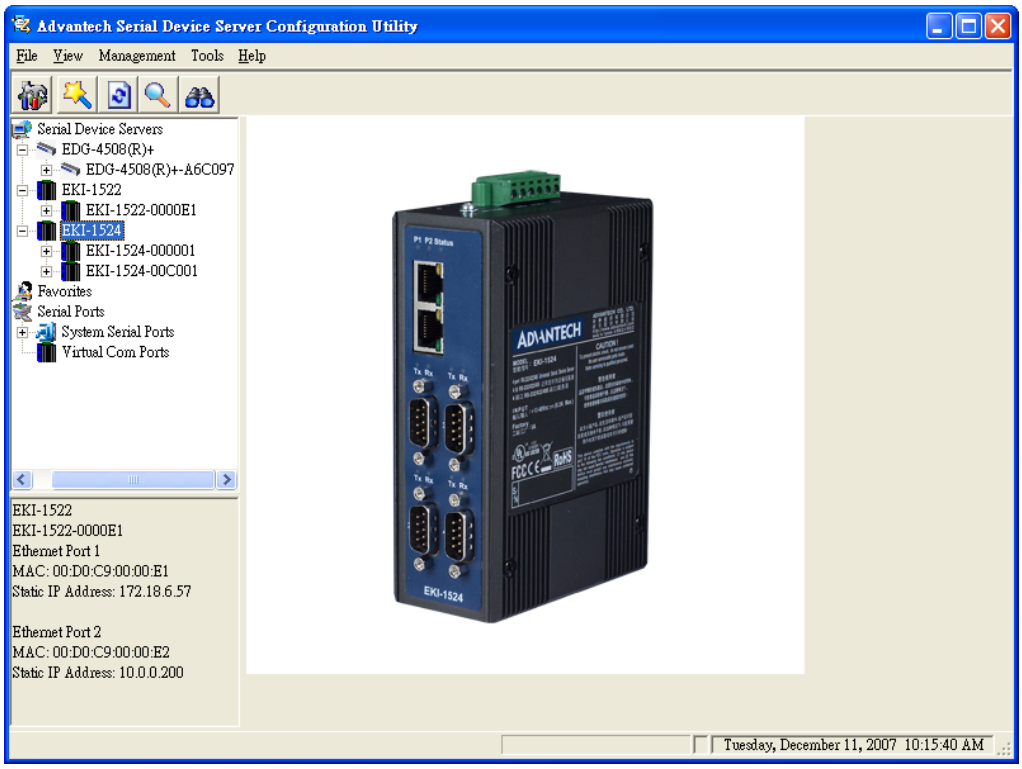
3.2.1 Auto Searching

Advantech Serial Device Server configuration utility will automatically search all the EKI, ADAM and EDG series device servers on the network and show them on the Device Server List Area of the utility. The utility provides an auto-search function to show your device(s) by simply executing the configuration utility program from the Start Menu as follows.

From here all device on the same network domain will be searched and display on Device Server List Area



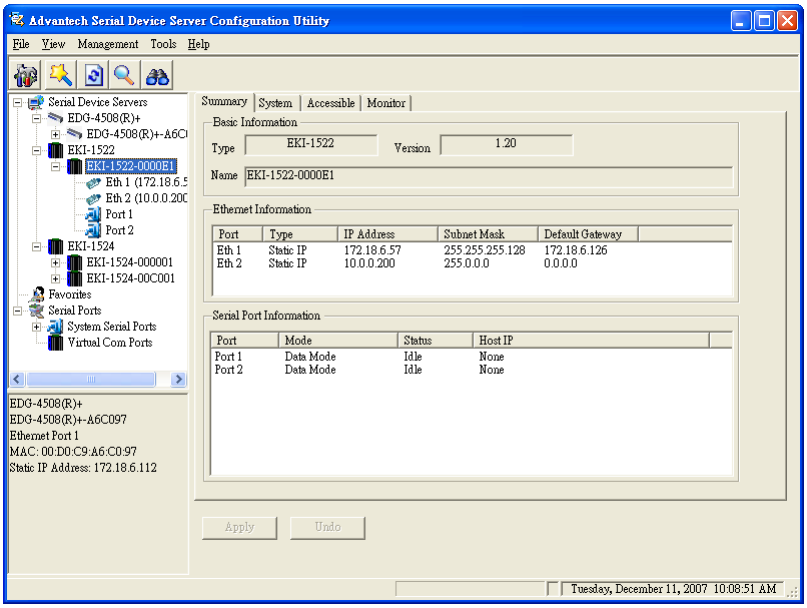
You can click on the device name to show the features of the specific device. Click on the "+" before the model name (e.g. EKI-1522), and the utility will expand the tree structure to show the individual device name. Click on the “-“ before the model name (e.g. EKI-1522), and the utility will collapse the structure.



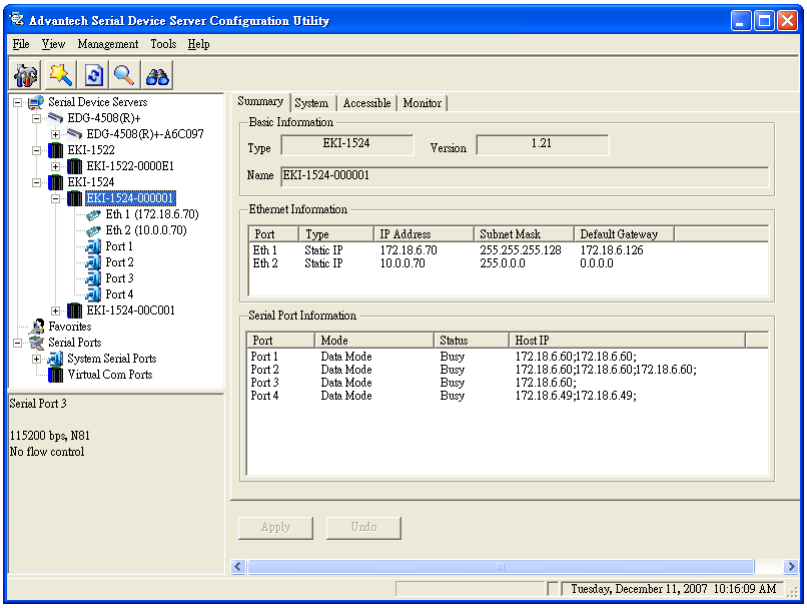
For Example, EKI-1522 in this figure is shown " EKI-00C8C8010101 " after expanding the tree structure.

Note *When you run the Configuration utility for the first time, the default device name is "MAC ID". In this case, the device name "EKI-00C8C8010101" means the device "MAC ID" is "00 C8 C8 01 01 01". You can change the default device name in System Tag of Device Properties.*

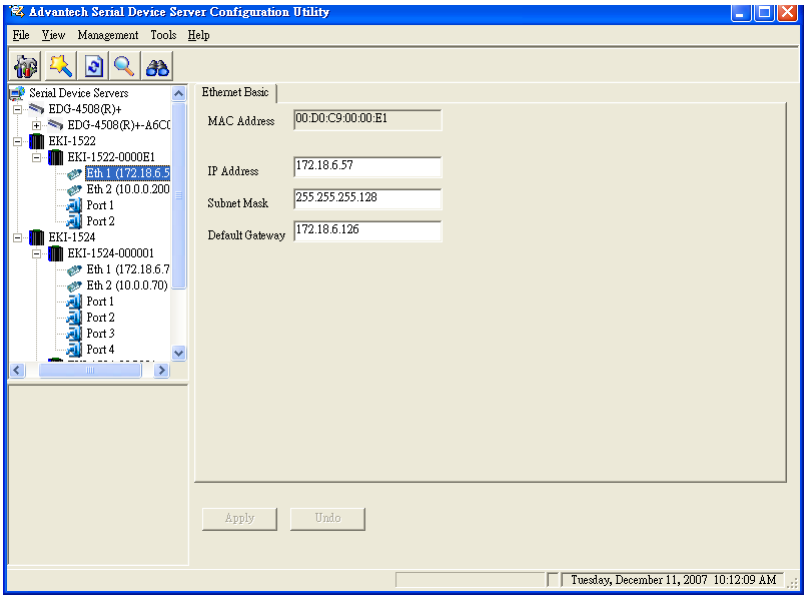
Select the device in this sub-tree. The first tab on the “Device Server Information Area” show the device Type, version, name, IP addresses, and serial port information. In the serial port information frame, it displays the operation mode, status and connected host IP.



Click on the “+” before the device name, and the utility will expand the interfaces on this device server.

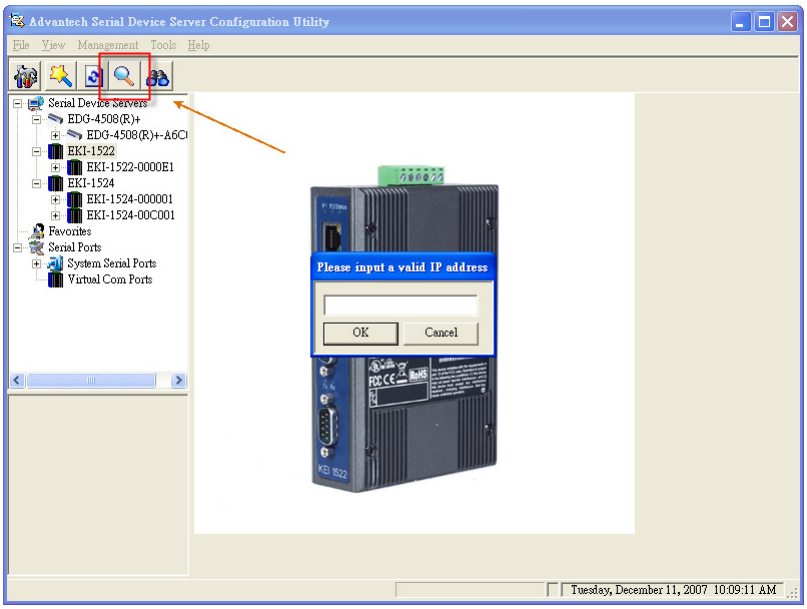


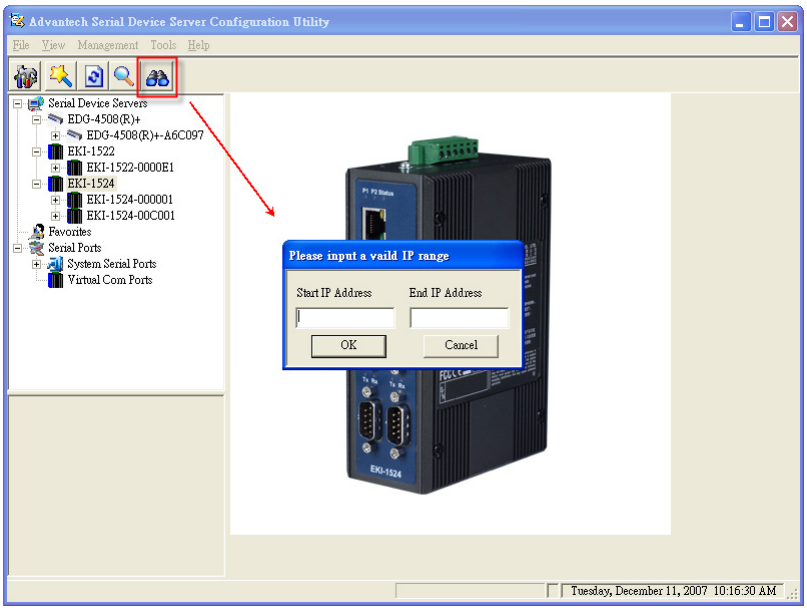
Click on each item, you will entry the configuration page to change the setting. The configuration will be introduced on following sections.



3.2.2 Manual Appending

Using “Add IP address to Favorite” or “Search for a Rang of IP addresses” function, you are able to add one device or group of devices to “EDG Devices Favorites”. These devices can locate on local network domain or other network domain.



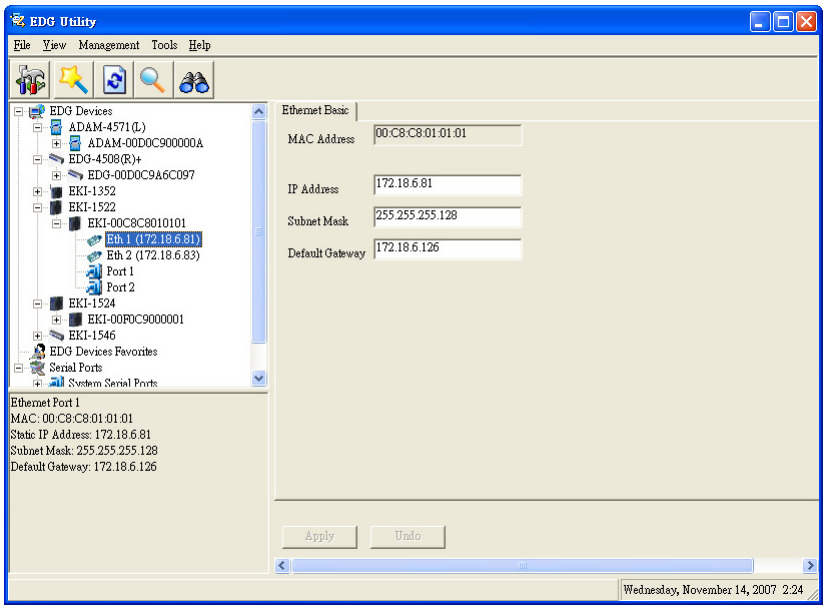


3.3 Setting network parameters

This section explains how to configure Advantech serial device server network using this utility so that it can communicate over a network with serial devices.

3.3.1 Setting TCP/IP(LAN) parameters

Click on the "+" before the model name (e.g. EKI-1522), and the utility will expand the tree structure to show the individual device name. And click on the “+” before the device name, and the utility will expand the interfaces on this device server. Select the LAN interface.

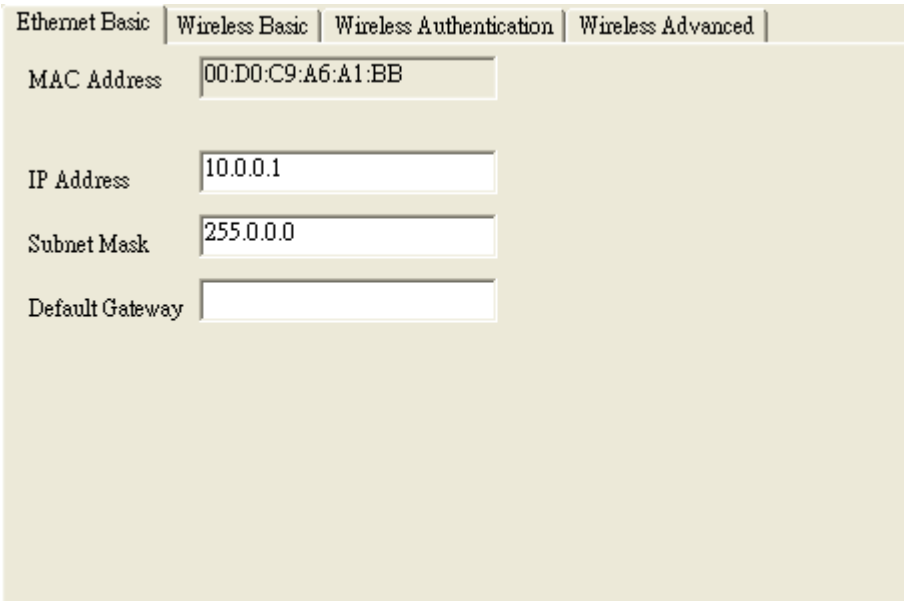


- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- IP address, Subnet mask, Default gateway: The IP address identifies your Advantech derail device server on the global network. Each EKI-152x serial device severs has the same default IP address 10.0.0.1 and 10.0.0.2. Obtain these specific IP addresses from your network administrator and then configure each Advantech serial device server with individual IP addresses, related Sub-net Mask and Gateway Setting.

3.3.2 Setting Wi-Fi(Wireless) parameters

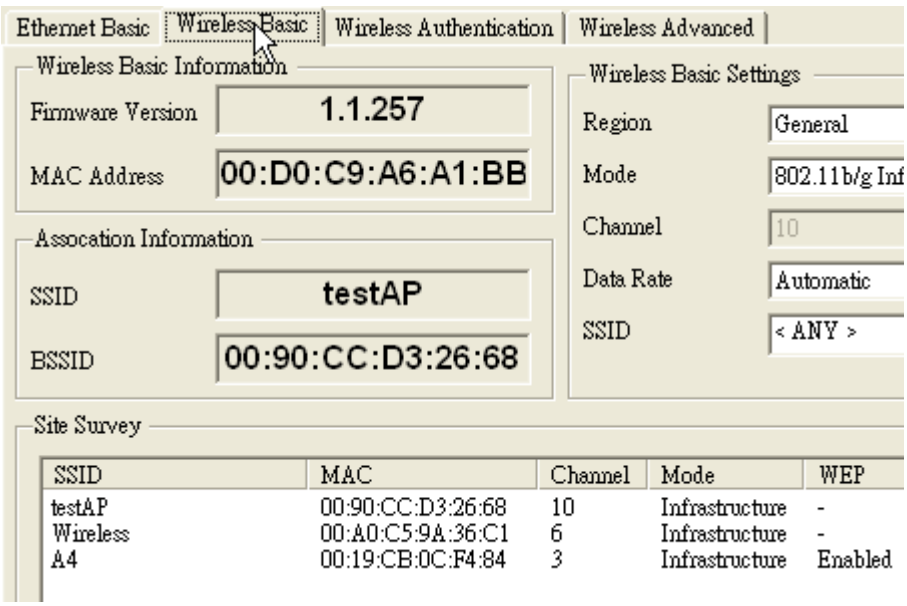
Click on the "+" before the model name (e.g. EKI-1352), and the utility will expand the tree structure to show the individual device name. And click on the “+” before the device name, and the utility will expand the interfaces on this device server. Select the WLAN interface. There are four tabs on this page.

3.3.2.1 3.3.2.1 Ethernet Basic



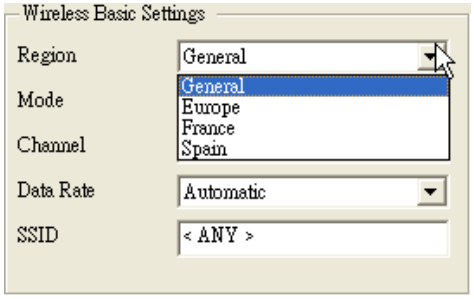
- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- IP address, Subnet mask, Default gateway: The IP address identifies your Advantech derail device server on the global network. Each EKI-135x serial device severs has one same default IP address 10.0.0.1. Obtain these specific IP address from your network administrator and then configure each Advantech serial device server with individual IP address, related Subnet Mask and Gateway Setting.

3.3.2.2 Wireless Basic

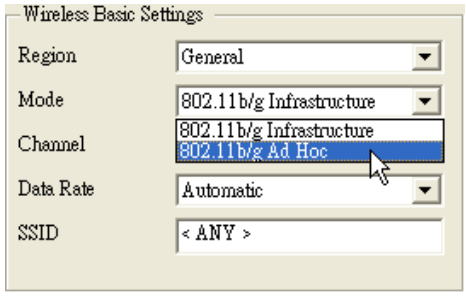


- Firmware Version: Here is the firmware version of the wireless module embedded in the EKI-1531 and EKI-1352. The wireless module firmware might affect the wireless connection. Write down the version number and provide to our customer service if you have wireless connection problems.

- MAC Address: The MAC address is for the local system to identify and locate each serial device servers. This MAC address is already set before delivery from factory, hence no need for further configuration.
- SSID(Association Information): The SSID (Service Set Identity) identifies a specific wireless LAN. Before associating with a particular wireless LAN, a station must have the same SSID as its access point. This field shows the AP that the EKI-1351 or EKI-1352 is connecting. That means the user must set the specific access point's SSID in infrastructure networks, or set the same SSID in ad hoc networks.
- BSSID: Normally, it should be the MAC Address of Access Point.
- Region: Set the region. Each region has its default channel range. When you choose a specific region, the optional channel range and numbers in the below drop-down menu will be changed automatically.

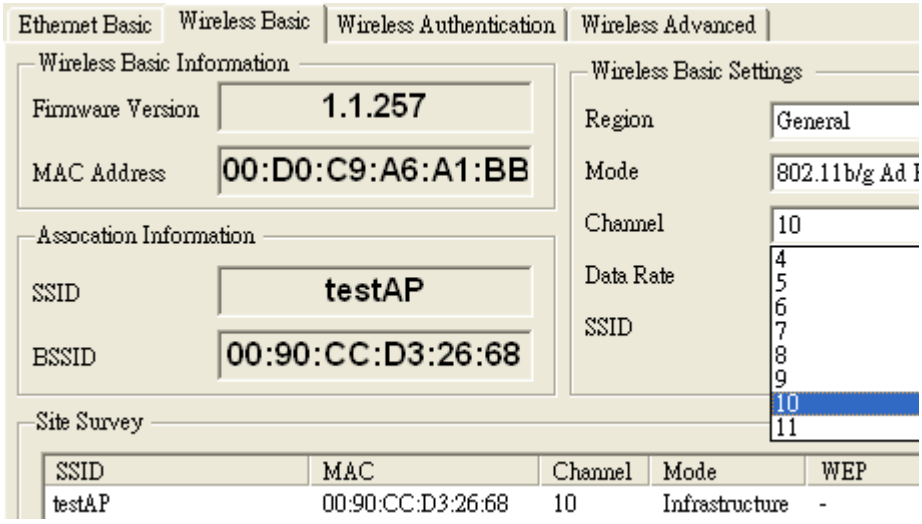


- Mode: There are two kinds of basic service set (BSS) in this drop-down menu.

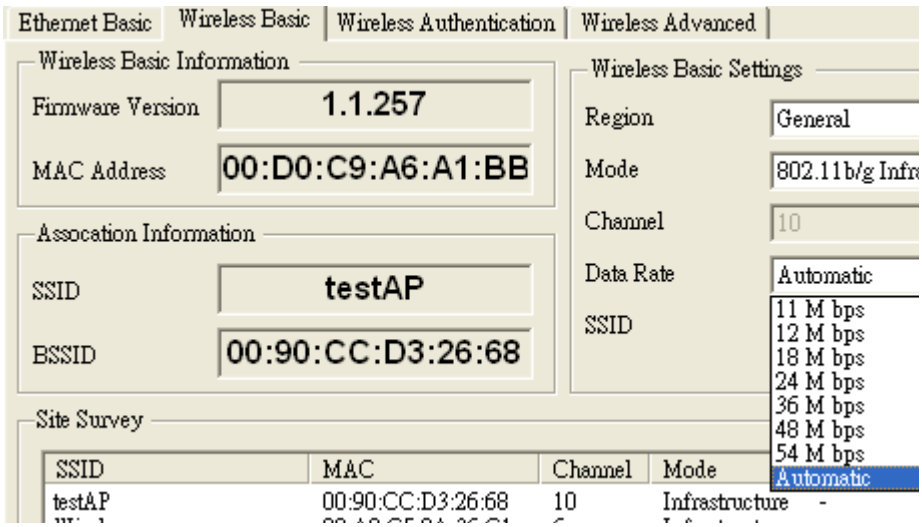


  - 802.11b/g Infrastructure mode : For infrastructure BSS usage, you should set up the SSID of the specific access point (AP). Or just choose .ANY. in SSID drop-down menu to let the wireless module automatically search and connect the appropriate AP.
  - 802.11b/g Ad hoc mode: For point-to-point connection, specific or independent BSS usage, you should set the same channel and the same SSID for both points.

- Channel: Each region has its default channel range, which is decided by each region's telecommunications laws.



- Data Rate: The data transmission rate is determined by the device and access point. If there is a restriction for the device or AP, a fixed data rate has to be chosen. Otherwise, we suggest the Automatic. choice.



- SSID(Wireless Basic Setting): You can input the AP SSID here. If you doesn't know which access point is the most appropriate one, just set "ANY" for an automatic search.
- Site Survey: Show the Wireless AP's SSID, MAC Address, Channel, Mode, Encryption mode and signal.

3.3.2.3 Wireless Authentication

EKI-1351 and EKI-1352 now support WEP (Wired Equivalent Privacy) encryption operation mode. WEP is a kind of standard to encrypt the data frame. We will enhance other encryption mode in future.