

# ***CHAPTER 5***

## **WINDOWS OPERATING SYSTEM**

# INTRODUCTION

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- **Installation** (or **setup**) of a program (including drivers, plugins) is the act of putting the program onto a computer system so that it can be executed.
- Some software can be executed by simply copying it to a computer and executing
  - no installation procedure as such is required.

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- Other programs are supplied in a form not suitable for immediate execution, and require an installation procedure.
  - The installer may test for system suitability and available mass storage space.

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- The various types of installation :
    - typical installation
    - full installation
    - minimal installation
    - custom installation

# Typical Installation

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- Typical installation is a pre-selected in the setup program.
- Typical installs with the correct settings for normal usage, and will make most of the decisions for you about the installation.

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- If you have no particular requirement to install NOD32 with specific settings, it is recommended to choose this route.
  - Typical installation is the default option.

## Setup Wizard



Welcome to the NOD32 Setup Program

Click Next to use the default (recommended) installation or select an alternative option.

Installation

- ☒ Typical (Recommended for most users)
- ☐ Advanced (Partially customized installation)
- ☐ Expert (Fully customized installation)

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Next >

Cancel

# Full Installation

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- The installer will ask whether you want to do a full, minimal or custom installation.
- “Full installation” is the default and will install all sets.
- Full install is removing what you already have and doing a complete install.
- A full installation is performed for new installations to install the software from the CD to the hard drive.



# Minimal Installation

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- “Minimal installation” will only install a small core set, the minimum of what is needed for a working system.

## Custom Installation

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- If you select “Custom installation” you can select which sets you would like to have installed.
- Allows every part of the installation to be controlled and customized.
- Offers many configuration options at install time.

The NetBSD distribution is broken into a collection of distribution sets. There are some basic sets that are needed by all installations and there are some other sets that are not needed by all installations. You may choose to install a core set (Minimal installation), all of them (Full installation) or you select from the optional distribution sets.

Select your distribution

a: Full installation

b: Minimal installation

>c: Custom installation

Typ. = Typical Installation (Recommended for most users)  
 Adv. = Advanced Installation (Partially customised installation)  
 Exp. = Expert (Fully customised installation)  
 Post = Option can be configured post install

Option	Default	Typ.	Adv.	Exp.	Post
NOD32 Destination folder	C:\All Programs\ESET		●	●	
Silent Mode / Password protect settings	Off / Off		●	●	●
GUI type / NOD32 Splash screen	Full Graphic / Yes			●	●
Send warnings by email or Win.Messenger	Off / Off			●	●
Update-server, Username & Password	Auto / -none- / -none-	●	●	●	●
Internet connection & proxy settings	Use IE/no proxy	●	●	●	●
Auto-update configuration	Hourly or on-connect		●	●	●
Launch resident protection (AMON) on startup	Win9x - Yes, XP/2000/2003/NT - No	●	●	●	●
Place On-demand scanner icon on desktop	Yes		●	●	
Enable on-demand scanning with mouse	Yes		●	●	
Install DMON, IMON services	Yes		●	●	●
Enable email scanning/cleaning	Yes		●	●	●
Enable HTTP scanning	Yes		●	●	●
Install EMON services	If Outlook installed		●	●	●
ThreatSense.Net™ Early Warning System	Yes	●	●	●	●

# Option Of Installation

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- An OS is installed in a defined section of the hard disk, called a *disk partition*.
- Various methods exist for installing an OS.
- The method selected for installation is based on the system hardware, the OS being installed, and user requirements.
- Four basic options are available for the installation of a new OS:
  - Clean install
  - Upgrade
  - Multi-boot
  - Virtualization

## Clean Install (*Fresh Install*)

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- A clean install is done on a new system or in cases where no **upgrade** path exists between the current OS and the one being installed.
- It deletes all data on the partition where the OS is installed and requires application software to be reinstalled.
- A new computer system requires a clean install.
- A clean install is also performed when the existing OS installation has become damaged in some way.

# Upgrade

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- If you are staying with the same OS platform, doing an upgrade is often possible.
- With an upgrade, system configuration settings, applications, and data are preserved.
- It simply replaces the old OS files with the new OS files.

# UPGRADE

The term **upgrade** refers to the replacement of a product with a newer version of that same product. It is most often used in computing and consumer electronics, generally meaning a replacement of hardware, software or firmware with a newer or better version, in order to bring the system up to date or to improve its characteristics. The word is also used by audiophiles to describe the replacement of a product with a better quality product with the aim of bringing enhancements to sound quality.



# Multi-boot

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- Installing more than one OS on a computer to create a multi-boot system is possible.
- Each OS is contained within its own partition and can have its own files and configuration settings.
- On startup, the user is presented with a menu to select the desired OS.
- Only one OS can run at a time and it has full control of the hardware.

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- As an example of multiboot, it is possible to install Windows XP, Windows Server, and Linux all on the same system.
  - This setup can be useful in a test environment where only one PC is available but there is a need to test several different OS and applications.

# Virtualization

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- Virtualization is a technique that is often deployed on servers.
- It enables multiple copies of an OS to be run on a single set of hardware, thus creating many virtual machines.
- Each ***virtual machine*** can be treated as a separate computer.

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- This enables a single physical resource to appear to function as multiple logical resources.
  - This type of approach generally demands more physical resources such as CPU processing and RAM because multiple OS's are running on the same machine.

# Pre-Installation Checklist

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- *Refer from the handouts given.*

# Configuring a Computer for the Network

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- After an OS is installed, the computer can be configured to participate in a network.
- A network is a group of devices, such as computers, that are connected to each other for the purposes of sharing information and resources.
- Shared resources can include printers, documents, and Internet access connections.

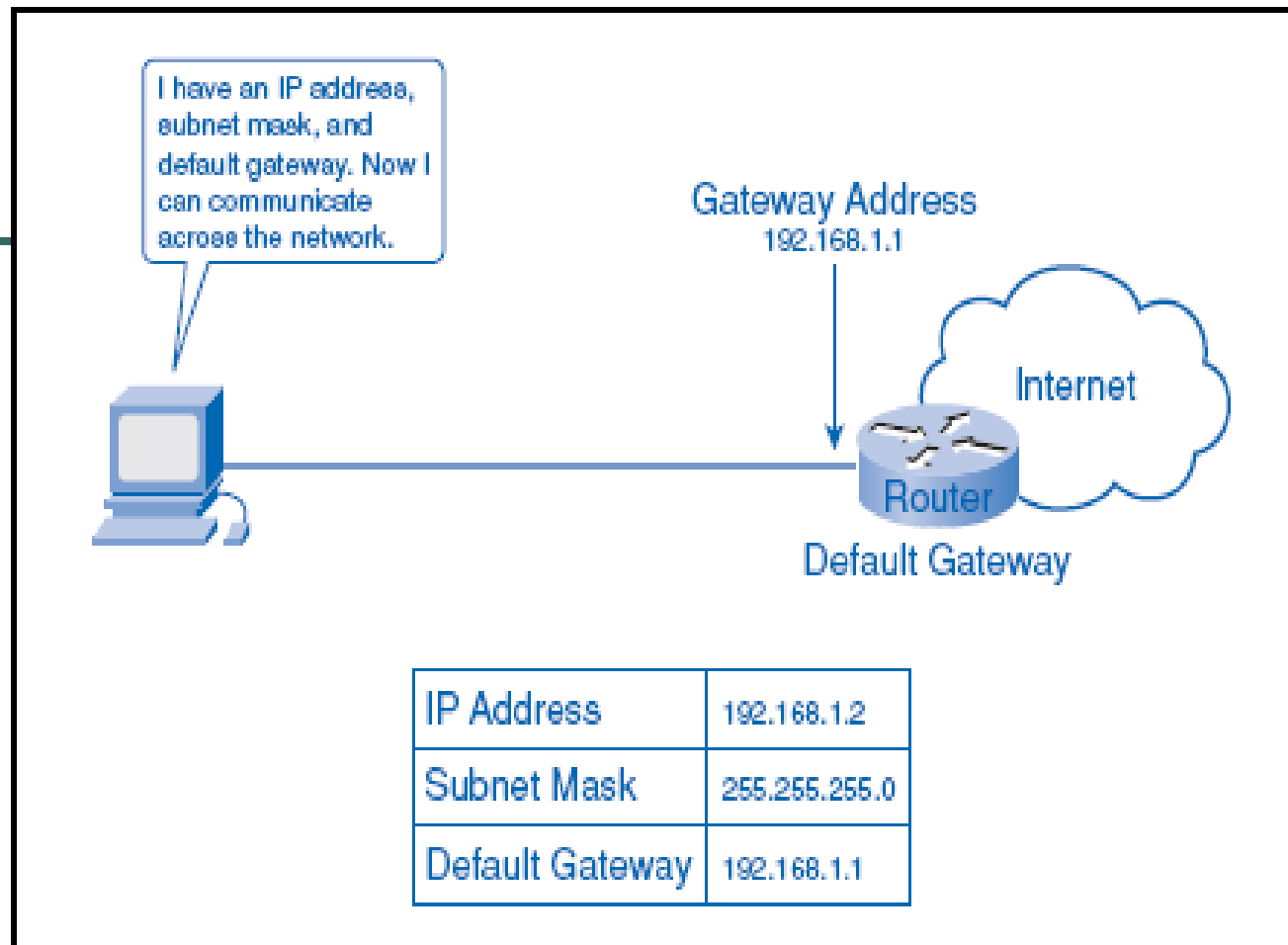
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- To physically connect to a network, a computer must have a ***network interface card (NIC)***.
  - The NIC is a piece of hardware that allows a computer to connect to the network medium.
  - It might be integrated into the computer motherboard or might be a separately installed card.

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- In addition to the physical connection, some configuration of the operating system is required for the computer to participate in the network.
  - Most modern networks connect to the Internet and use it to exchange information.
  - Each computer on these networks requires an ***Internet Protocol (IP)*** address, as well as other information, to identify it.
  - The IP configuration contains three parts, which must be correct for the computer to send and receive information on the network.



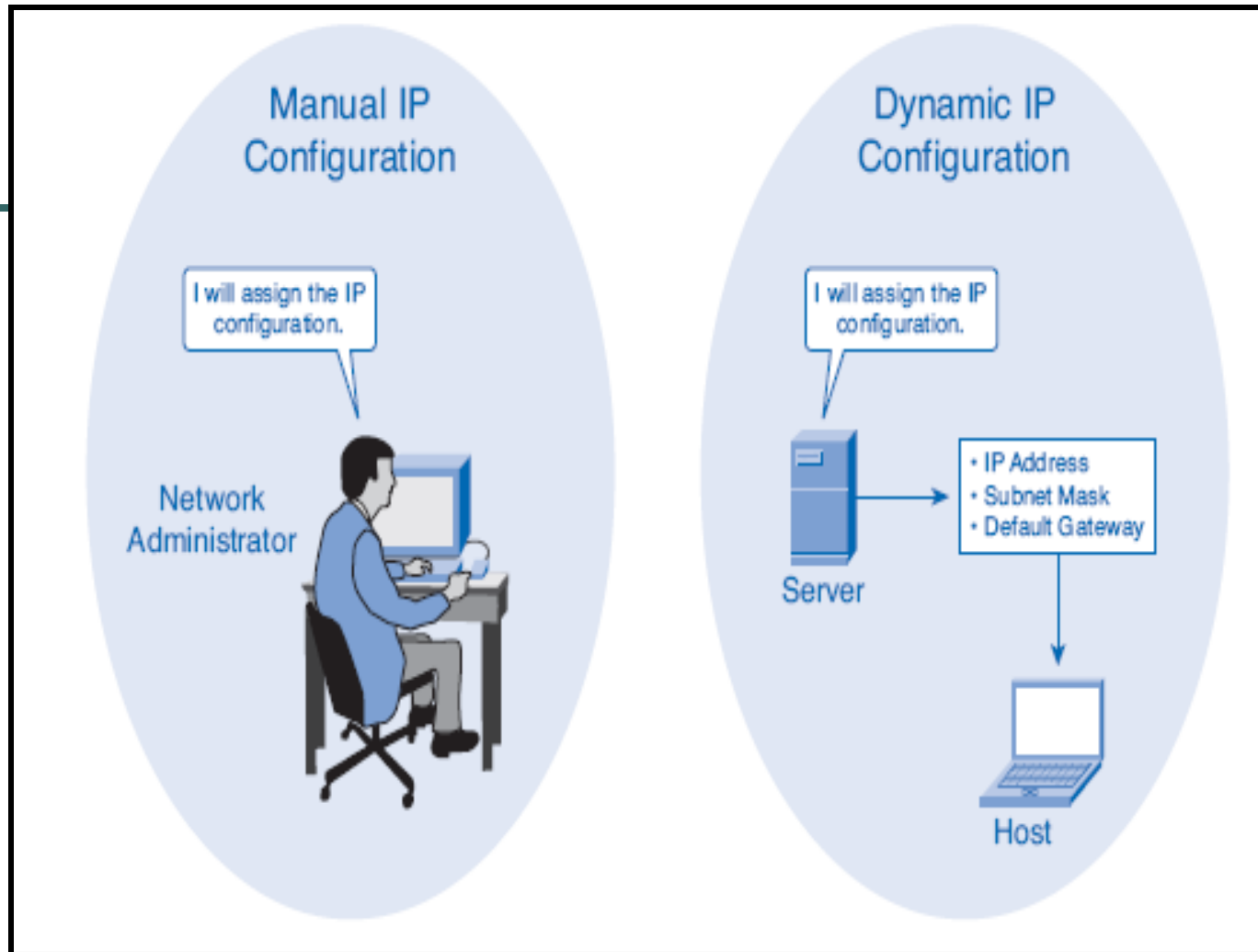
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- These three parts are
    - ***IP address***: Identifies the computer on the network.
    - **Subnet mask**: Identifies the network on which the computer is connected.
    - **Default gateway**: Identifies the device that the computer uses to access the Internet or another network.

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- In Figure 1, the PC must have a NIC installed, usually an Ethernet NIC on modern local networks.
  - It is then configured with an IP address and a subnet mask for the local network it is on.
  - The default gateway entered as part of this configuration is the IP address of the router interface on this local network.
  - All packets that are not destined for local hosts will be sent to the default gateway.



**Figure 1 : Configuration Requirements for Connecting to the Network**

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- A computer IP address can be configured manually or assigned automatically by another device, as shown in Figure 2.



**Figure 2 : Manual and Dynamic IP Configuration**

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- With manual configuration, the required values are entered into the computer via the keyboard, typically by a network administrator.
  - The IP address entered is referred to as a static address and is permanently assigned to that computer.

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- Computers can be set up to receive their network configuration dynamically.
  - This feature allows a computer to request an address from a pool of addresses assigned by another device within the network.
  - When the computer is finished with the address it is returned to the pool for assignment to another computer.

# Computer Naming

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- In addition to the IP address, some network operating systems make use of computer names.
- In this environment each individual system must have a unique name assigned to it.
- A ***computer name*** provides a user-friendly way to identify a computer, making it easier for users to connect to shared resources such as folders and printers on other computers.



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- The network administrator should determine a logical naming scheme that helps to identify a device's type and/or its location.
  - For example, the name PRT-CL-Eng-01 could represent the first network attached color laser printer in the Engineering Department.

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- These names are manually assigned to each device, although some tools do exist to help automate the naming process.
  - A computer description can also be entered when assigning a name to provide additional information on the location or function of the device.
  - Figure 3 shows the use of Windows System Properties to enter a computer name.



**Figure 2-12 Using Windows System Properties to Name a Computer**

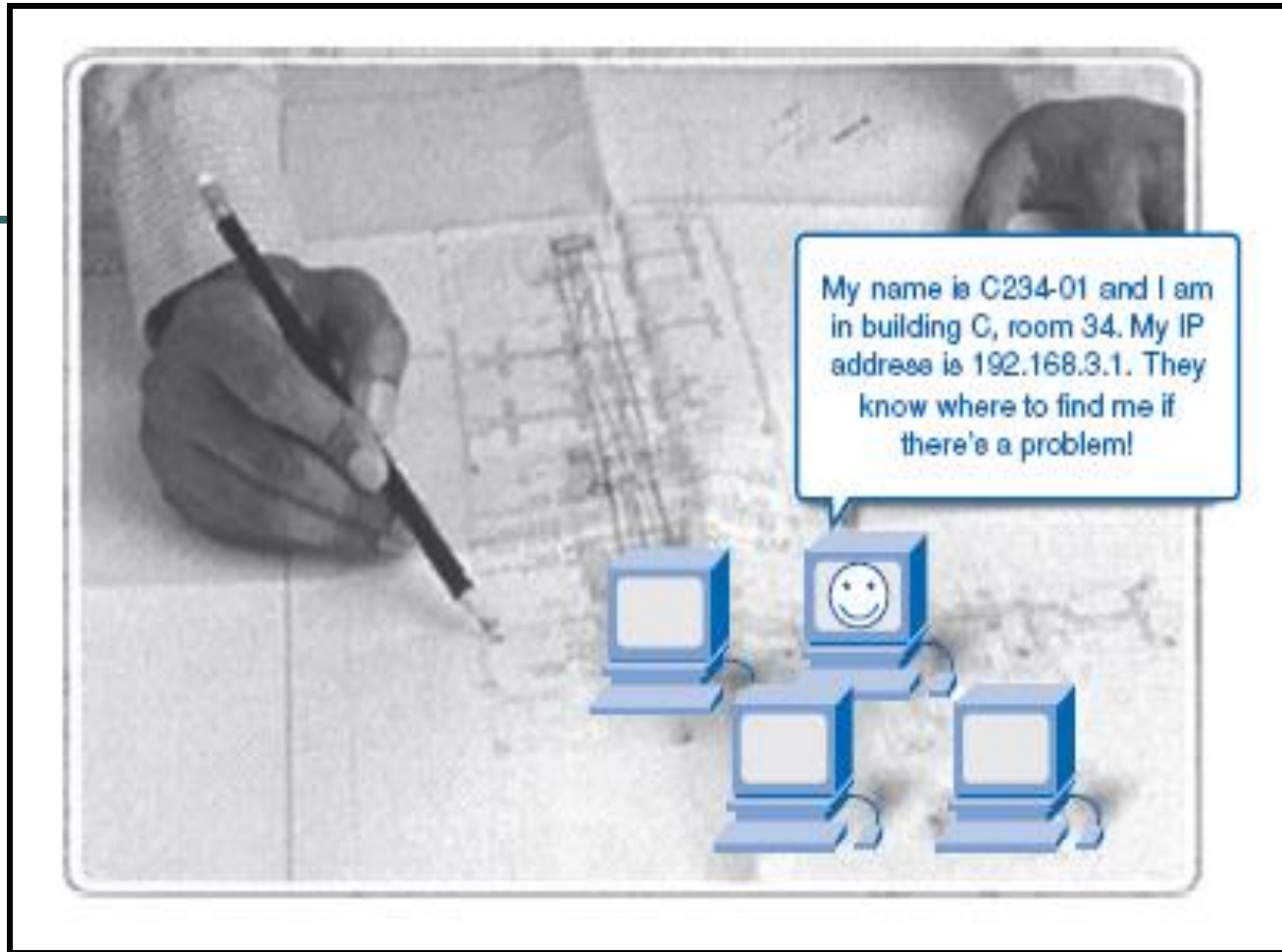
# Network Name and Address Planning

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- As a network grows in size and complexity, ensuring that it is well planned, logically organized, and well documented becomes increasingly important.

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- Many organizations develop conventions for the naming and addressing of computers.
  - These conventions provide guidelines and rules that network support personnel can use when performing these tasks.
  - Computer names must be unique and should have a consistent format that conveys meaningful information.
  - This method can help to determine device type, function, location, and sequence number based on the device name.
  - IP addresses must also be unique to each device.

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- The use of logical device naming and addressing conventions that are well documented can greatly simplify the tasks of training and network management and can help with troubleshooting when problems arise.
  - Figure 4 illustrates a logical naming scheme that can assist the network administration staff.



**Figure 4 : Computer Naming Conventions**