

# GLOSSARY

## **account**

In the Unix system, it refers to a combination of login name, personal directory, password and shell, that enables a user to log in to the system.

## **alias**

It is a mechanism that is used in shell to replace a character string with another when executing a command. You can view all currently defined alias by typing alias at the prompt.

## **ARP**

Address Resolution Protocol. It is an Internet protocol that is used to dynamically map Internet addresses to hardware addresses on Local Area Network.

## **ATAPI**

AT Attachment Packet Interface. The most popular ATAPI is IDE, which provides additional instructions to control CDROM and tape devices. The IDE controller with extended features is usually called Enhanced IDE (EIDE).

## **batch**

It is a processing mode that sends tasks to the process in sequence. The processor will perform tasks one after another, until the last one is completed and the processor is ready to accept another process list.

## **boot**

Boot: the overall process of switching on the computer, checking the status of interface devices, and loading the operating system to the memory by the machine.

## **bootdisk**

Bootdisk: the floppy disk used to start the system, which contains the codes necessary to load the OS from the hard disk (sometimes from itself).

## **BSD**

Berkeley Software Distribution (BSD): a Unix branch developed by the information related institutes and departments of UCB.

## **buffer**

Buffer: a small area with fixed capacity in the memory, where you can load the region mode files, system partition

table, and process in progress etc. The consistency of all buffers is maintained by the buffer memory.

### **buffer cache**

Buffer cache: an important part in the core of the operating system, which maintains all buffers in the latest status, and reduces the memory space or clear the unwanted buffers when necessary.

### **CHAP**

Challenge-Handshake Authentication Protocol (CHAP): the communication protocol used by ISP to validate its client. It differs from PAP in the fact that it revalidates the client on regular basis after the initial discrimination.

### **client**

Client: a program or computer that can be connected with other programs or computers temporarily, and send commands or request information to or from them. It is a part of the component **Client/server system**.

### **client/server system**

Client/server system: the system architecture or communication protocol consisting of one **server** and one or more **clients**.

### **compilation**

Compilation: the process of translating some human readable source codes which are written in some programming language (C, for example) into a binary file that is machine readable.

### **completion**

Completion: the ability of a shell to automatically expand an incomplete substring to an existing filename, user name or other item, as long as there is a match in the system.

### **compression**

Compression: a way of shrinking files or decreasing the number of characters sent over a communication connection. Common file compression programs are compress, zip, gzip, and bzip2.

### **console**

Console: the concept that is commonly used and referred to as terminal. It is a user-controlled machine connected to one super central mainframe. On PCs, the physical terminals are the keyboard and screen.

### **cookies**

It refers to the temporary files written on the local hard disk by a remote web server. It allows the server to be aware of a user's preferences when this user makes access to a website again.

## **DHCP**

Dynamic Host Configuration Protocol (DHCP). It refers to a communication protocol designed based on LAN machines to dynamically acquire the IP addresses from a DHCP server.

## **DMA**

Direct Memory Access (DMA). This is a technique used on the PC architecture which allows an interface device to access or read / write data on the main memory without the help of the CPU as the media.

## **DNS**

Domain Name System (DNS). It is a mechanism used to allocate the name/address. It allows you to map a machine's name to an IP address. DNS also allows reverse lookup, that is, you could obtain a machine's name from its IP address.

## **DPMS**

Display Power Management System (DPMS). It refers to a protocol used by all monitors produced in nowadays to manage its power supply in order to prolong its service life.

## **editor**

Editor: typically, it is a program used to edit text files (i.e. text editor). The most common GNU/Linux editors are Emacs and VIM.

## **email**

Email: a way of sending messages electronically among people in the same network. Similar to regular mail, to be sent properly, an email needs the addresses for the recipient and sender.

## **environment variables**

Environment variables: they can be viewed directly from the shell.

## **ext2**

Ext2: short name for the "Extended 2 file system". This is GNU/Linux's native file system and has the following characteristics present on any UNIX file system: support special files (character devices, symbolic links, etc), file permissions and ownership, and more.

## **FAT**

File Allocation Table (FAT). It refers to the file system used by DOS and Windows.

## **FDDI**

Fiber Distributed Digital Interface (FDDI). It is a high-speed network physical layer used for optical fiber communication.

## **FIFO**

FIFO: First In, First Out. It refers to a data structure or hardware buffer where the data is extracted by the order in which they were placed in. Pipe is the most common example of FIFO concept in practice.

## **Filesystem**

Filesystem: a scheme applied to keep the consistency of files when storing them on the physical media (hard disk and floppy).

## **firewall**

Firewall: a machine or a dedicated facility that is, in the topology of LAN, responsible for the node connection with the outside network. It is also responsible for the multiple tasks including filtering, controlling the activities on some communication ports, and determining which specific interfaces can be accessed.

## **framebuffer**

Framebuffer: a technique used to correspond the RAM on a display card to the machine's memory address space. It allows an application to access the RAM on the display card without direct contact with it.

## **FTP**

FTP: File Transfer Protocol. This is the standard Internet communication protocol used to transfer files from one machine to another.

## **gateway**

Gateway: it is used to connect the network devices between two IP segments.

## **GIF**

GIF: Graphics Interchange Format. It is an image file format widely used on the web. GIF images may be compressed or stored to the animations.

## **GNU**

GNU: abbreviation of GNU's Not Unix. The GNU project was initiated by Richard Stallman at the beginning of the 1980s, aimed at developing a free operating system ("free" here represents "freedom" instead of "free of charge").

## **GPL**

**GPL:** General Public License. This concept is significantly different from the authority of all the commercial software: it has no restrictions to the duplication, modification and redistribution of the software. You may obtain its source code. The only restriction is that others to whom you redistribute must also benefit from the same rights.

## **GUI**

**GUI:** Graphical User Interface. It refers to a computer operation interface consisting of windows with menus, buttons, icons, etc.

## **host**

**Host:** another designation for computer. The terminology is generally used for the computers connected to the network.

## **HTTP**

**HTTP:** HyperText Transfer Protocol. With this communication protocol, you may be connected to the splendid websites and retrieve HTML files or documents.

## **HTML**

**HTML:** HyperText Markup Language. You may compose a web page file in this language.

## **inode**

In Unix file system, it is the entry point pointing to the file content. Each inode can be identified in such a unique way, and contains the related information about the document it points to, such as access time, file type and size.

## **Internet**

**Internet:** a huge network that connects the numerous computers around the world.

## **IP address**

**IP address:** consisting of four groups of figures, it is a kind of address representation and is used to identify a computer on Internet. An IP address looks like something as 192.168.0.1. A machine's personal address can be one of the two types: static or dynamic. Static IP address is fixed, while dynamic IP address changes once you have reconnected to the network.

## **IP masquerading**

**IP masquerading:** When the firewall is used, you may use this technique to hide the computer's real IP address from the outside world. Traditionally, the IP address obtained by the outside network connections over the firewall is the IP address of the firewall.

## **IRC**

Internet Relay Chat: an Internet standard for real time chat. It allows for channel creation to perform private talks and file transfer.

## **ISA**

Industry Standard Architecture: the very early bus specification used on PCs. It is now gradually substituted by PIC bus.

## **ISDN**

Integrated Services Digital Network: a set of communication standards for transmitting voice, digital network services and images with single wire or optical fiber.

## **ISO**

International Standards Organization.

## **ISP**

ISP: Internet Service Provider. the company who provides Internet access to its customers, either over telephone lines or private lines.

## **kernel**

Kernel: the core of an operating system. The kernel is responsible for allocating resources and distinguishing the processes from each user. It handles all the actions that allow the programs to have direct communication with the hardware on a computer, including the management of the buffer cache and so on.

## **LAN**

LAN: Local Area Network. Generally speaking, it is the network system constructed when machines are connected with the same physical cables.

## **LDP**

LDP: Linux Documentation Project. It is a nonprofit organization which maintains GNU/Linux documentation. Its most known achievements are the various HOWTO files. It also maintains FAQs and even some books.

## **loopback**

It refers to a machine's connection to the virtual network interface of its own. This function allows the running programs not to take into account the special case where two network entities are in fact in the same machine.

## **manual page**

Manual page: a small document containing the definitions of various commands and their usage. This file can be

consulted with the command *man*.

## **MBR**

**MBR:** Master Boot Record. It is the name for the first sector of a bootable hard disk. MBR contains the executable code used to load the operating system into the memory or a bootloader (such as LILO), and the partition table of that hard disk.

## **MIME**

**MIME:** Multipurpose Internet Mail Extensions. In an e-mail, it refers to a string, describing the content of the file it contains in the form of type/subtype.

## **MPEG**

**MPEG:** Moving Pictures Experts Group. It refers to the ISO committee who established standards for video and audio compression. MPEG is also the name of their algorithms.

## **NCP**

**NCP:** NetWare Core Protocol. It is the communication protocol defined by **Novell** to access the files and print services of Novell NetWare system.

## **newsgroups**

**Newsgroups:** the discussion and news areas with specific topics which can be accessed by a news or USENET client program to read and write messages to a certain newsgroup.

## **NFS**

**NFS:** Network FileSystem. It provides the file share over network.

## **NIC**

**NIC:** Network Interface Controller. It refers to the adapter installed on the computer to provide the connection to network entity, such as Ethernet card.

## **NIS**

**NIS:** Network Information Service. NIS is designed to share the common information across NIS domain. Such NIS domain covers the entire or part of a LAN, or several LANs. It can export password databases, service databases, group information, etc.

## **PAP**

**PAP:** Password Authentication Protocol. It is a protocol used by many ISPs to authenticate their clients. In this

scheme, the client will send a set of uncoded ID and password the server.

### **patch**

Patch: it contains the revision list for the source code to be distributed in order to add new features, correct the bugs, or do the modifications according to specific needs.

### **path**

Path specifies the location in the file system where files and directories are stored. There are two types of paths in GNU/Linux systems: the **relative path** is the position of a file or directory in relation to the current directory and the **absolute path** is the position of a file or directory in relation to the root directory.

### **Open Source**

Open source: the concept lies in the fact that, once the extended program designers are allowed to use and modify the original program codes together, most useful products for most people will be ultimately produced. Some popular open source programs include Apache, sendmail and GNU/Linux.

### **PAP**

PAP: Password Authentication Protocol: a protocol through which many ISPs authenticate clients. In this design, clients will send the server a group of uncoded ID and password.

### **PCI**

PCI: Peripheral Components Interconnect. It refers to the bus specification established by Intel that becomes the bus standard of PC architectures today. It is the successor to ISA, and offers a variety of services: configuration, setup information, IRQ sharing, bus control and other features.

### **PCMCIA**

PCMCIA (Personal Computer Memory Card International Association), commonly called "PC Card" for short, is the standard for external interfaces of a laptop: modems, hard disks, memory cards, Ethernet cards, etc.

### **pipe**

It refers to a special Unix file pattern. One program writes data into the pipe, and another program reads the data until the end. Pipes apply the principle of FIFO (First In, First Out), thus the data will be read by another program till the end.

### **pixmap**

Pixmap: abbreviation of "pixel map" which is one type of bitmap images.

### **PNG**

PNG: Portable Network Graphics. It is a file format created mainly for web use. It is designed as a patent-free replacement for GIF with patent right and also has some additional features.

## **PNP**

PNP: Plug'N'Play. PNP is first used for ISA devices in order to add new configuration information, and now it has been more extensively applied to all devices to report their configuration parameters. As we know, all PCI devices are in PNP form.

## **POP**

POP: Post Office Protocol. This common protocol is used for downloading emails from an ISP.

## **PPP**

PPP: Point to Point Protocol. This is the communication protocol sending data over serial signal lines. It is commonly used to send IP packets to the Internet, and it may also cooperate with other protocols such as Novell IPX protocol.

## **preprocessors**

Preprocessor: it instructs the compiler to replace certain data or program segments used in the source code. For example, preprocessors of C are #include, #define, etc.

## **process**

Process: in the operating system, a process takes place along with the execution of a program.

## **prompt**

Prompt: in shell, this is the string before the cursor. Commands could be typed after it.

## **Protocol**

Protocol refers to the way of communications between different machines over the network, using either hardware or software. It defines the format of transferred data. Some popular protocols include HTTP, FTP, TCP, UDP and so on.

## **proxy**

Proxy: a machine which sits between a network and the Internet, playing the role of speeding up the most widely used protocols (for example, HTTP and FTP). It contains a preset cache, so that the cost of making a repeated request for the same data will decrease.

## **quota**

Quota is a method of restricting disk usage by users. On certain file systems, administrators can apply different size restrictions against directories for various users.

## **RAID**

RAID: Redundant Array of Independent Disks. It refers to a project initiated at Computing Science Department of Berkeley University with the aim to spread the stored data on multiple disks in the same array.

## **RAM**

RAM: Random Access Memory. It refers to the main memory of computer. "Random" also means that any part of the memory can be directly accessed.

## **read-only mode**

Read-Only mode: it indicates that the file cannot be written, and you can only read its contents but cannot modify or delete it.

## **read-write mode**

Read-write mode: it indicates that the file can be written. You can read or modified the file content, and even delete the file if you own this permission.

## **root**

Root is the super user on any Unix system. Root is responsible for administrating and maintaining the entire Unix system.

## **RFC**

RFC: Request For Comments. RFCs are the official Internet standard documents published by IETF (Internet Engineering Task Force). They describe all protocols used or required. If you want to learn how a protocol works, please consult the corresponding RFCs.

## **RPM**

RPM: Redhat Package Manager. It is a package format developed by **Red Hat** to create software kit. It is used in many GNU/Linux distributions, including Red Flag Linux.

## **run level**

Run level: it is related to a kind of system configuration that only allows certain selected processes to exist. The processes allowed for each run level are clearly defined in the file `/etc/inittab`.

## **SCSI**

SCSI (Small Computers System Interface) is an efficient bus specification designed to allow several types of peripherals to be used. Unlike IDE, the SCSI bus is not limited by the speed at which the peripherals accept commands. Only high-level machines can integrate a SCSI bus directly on the main board, and common PCs need add-on cards.

## **server**

Server: it provides a program or computer with features or services and awaits the connections from clients to execute their commands or give them the information they ask for.

## **shadow passwords**

Shadow passwords: this is a way of password management in Unix systems where the file that cannot be read by everybody stores the strong password. It is a most common password system in nowadays. It also offers other features such as password aging.

## **shell**

The shell is the basic interface to the operating system kernel and provides the command line where users enter commands to run programs or system commands. All shells are able to provide command lines to automate tasks or frequently used and complex tasks. These shell commands are similar with batch files in DOS operating system, but are much more powerful. Some common shells include Bash, sh, tcsh, etc.

## **SMB**

SMB (Server Message Block) is the protocol used by Windows (9x/2000 or NT) to share files or printers over network.

## **SMTP**

SMTP (Simple Mail Transfer Protocol) is the protocol used to transfer emails. All mail transfer agents such as sendmail or postfix use SMTP, therefore, they are sometimes referred to as SMTP servers.

## **socket**

It is a file pattern applicable to all network connections.

## **TCP**

TCP: Transmission Control Protocol. It is the most reliable communication protocol using IP to transfer network packets. The necessary checks are added in TCP to ensure the packets have been delivered in IP. As contrary to UDP, TCP works in connection mode, that is, the machines at both ends must be connected before exchanging information.

## **telnet**

When you create a connection to a remote host, Telnet is the most common method of remote logon, however there are better and safer alternatives, such as ssh.

## **URL**

URL: Uniform Resource Locator. It refers to a string with uniform and special format used to identify a resource on the network. The resource may be a file, a server, etc.

## **virtual desktops**

Virtual desktops: Several desktops are available in X Window system. This handy feature allows you to organize your windows, preventing dozens of programs from jamming on the desktop.

## **WAN**

WAN: Wide Area Network.

## **window manager**

Window manager: a program to make the graphical environment “feel like it looks”. It mainly deals with title bars, frames, buttons, main menus, and some shortcuts in the window.