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INTERNET ENGLISH

因特网——网络的网络

Internet—A Network of Networks

王海 王子平 编著

世界知识出版社

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Internet——A Network of Networks

(因特网——网络的网络)

〈英汉对照〉

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Preface

在计算机网络技术高度发展的今天,因特网(Internet)已经日益渗透到各行各业,并已进入到了百姓的日常生活(学习、工作、通信以及娱乐等),并正在继续发挥着日益重要的作用。

本书正是为因特网爱好者编写的一本关于因特网的英语读物。其内容不仅有助于读者对因特网基本知识、基本功能的了解,更重要的是可以帮助读者熟悉大量关于因特网各方面的英语描述,以及大量有关因特网的英语词汇、术语、惯用语以及缩略语等。阅读此书,不仅有助于提高读者对因特网英语资料的阅读能力,并能满足在上网过程中对有关英语术语的需要。

全书内容均为英汉对照,并附有对相关技术术语(terminology)的英、汉解释,以便于读者的学习与参考。

由于编者水平有限,书中难免有错误及不妥之处,请广大读者不吝赐教。

编者

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Computer Networks

Computer network is a collection of independent computers that have been connected to have a certain purpose. Each computer or node may be located at a different location, made of different hardware, running under a different operation system.

The main objectives of computer networks are

- Resource sharing;
- Parallel computation;
- Redundancy.

Resource sharing is the primary goal of designing generalized computer networks. Resources include hardware, software, and data.

Parallel computation means that any computer, in general, has its I/O processors running in parallel with the main processor. Since all I/O processors share the burden of the main processor, we have achieved parallel computation from the system point of view.

Redundancy indicates that the system is fault-tolerant to a certain degree. For instance, a multiprocessing system may

be designed for flight control. Each control decision must be voted in by the majority of main processors. Any failed processor will not affect the majority vote. Since a computer network contains many hardware components, redundancy is always a factor in the overall planning.

Computer networks include local area networks (LANs), metropolitan area networks (MANs), and wide area networks (WANs).

A LAN consists of all the computers confined within a local area, say a few square miles, such as a corporation or a university. LANs are characterized by the following:

- Fast data rate, up to 100 megabits per second (Mbps) or over;
- Low error rate, 10^{-8} to 10^{-11} errors per bit (Epb);
- Simple routing;
- Moderate distance, within several miles;
- Innovative technology.

A MAN is actually a LAN of large size, such as the Community Antenna Television (CATV) network. As far as hardware or software design is concerned, a MAN is not different from a LAN. Taking a token ring LAN for example, the distance between two adjacent nodes can be 2 km. With 360 nodes maximum, the perimeter can be as long as 720 km or 450 miles. In other words, it is possible to have a LAN that is as large as a city.

WAN technology means that computers can be situated at

different location all over the world. In a WAN, when the data bits arrive at the destination node, transmission stops right there. Two PCs may be interconnected in a room as a LAN. If one PC is moved to New York and the other one stays in San Francisco, the network applications still run on the network and no modifications are needed in either hardware or software. Hence, the WANs and LANs really differ in technologies but not in size.

New Words:

1. New York [ˈnju:ˌjɔ:k] *n.* 纽约
2. San Francisco [ˌsænfɾənˈsiskəu] *n.* 旧金山
3. adjacent [əˈdʒeɪsənt] *a.* 邻接的
4. burden [ˈbɜ:dn] *n.* 负担
5. confine [kənˈfaɪn] *vt.* 限制
6. corporation [ˌkɔ:pəˈreɪʃən] *n.* 公司
7. destination [ˌdestɪˈneɪʃən] *n.* 目标
8. fault-tolerant [fɔ:ltˈtɒlərənt] *a.* 容错的
9. innovative [ˈɪnəʊveɪtɪv] *a.* 创新的
10. interconnect [ˌɪntəkəˈnekt] *vt.* 互连
11. metropolitan [ˌɪmetrəˈpɒlɪtən] *a.* 大城市的
12. moderate [ˈmɒdərɪt] *a.* 中等的
13. modification [ˌmɒdɪfɪˈkeɪʃən] *n.* 修改
14. network [ˈnetwɜ:k] *n.* 网络
15. node [ˈnəʊd] *n.* 结点
16. overall [ˈəʊvəɹəl] *a.* 总的,全部的
17. perimeter [pəˈrɪmɪtə] *n.* 周长

- 18. processor [ˈprəʊsesə] *n.* 处理机
- 19. redundancy [riˈdʌndənsi] *n.* 冗余
- 20. routing [ruːtiŋ] *n.* 路径选择
- 21. token [ˈtəʊkən] *n.* 标记, 令牌

Phrases and expressions:

- 1. Community Antenna Television(CATV) 社区天线电视
- 2. be located at 位于……
- 3. be situated at 位于……
- 4. error per bit(Epb) 错误/位
- 5. megabits per second(Mbps) 兆位/秒
- 6. multiprocessing system 多重处理系统
- 7. parallel computation 并行计算
- 8. resource sharing 资源共享

Terminology:

- 1. Multiprocessing system / 多重处理系统
A computing system employing two or more interconnected processing units to execute programs. 一种计算系统,是用两个或多个相互连接的处理器,同时执行多个程序。
- 2. Disk file / 磁盘文件
An associated set of records of the same format on disk, identified by a unique label. 磁盘上具有相同格式的相关记录的集合,用一个惟一的标号来识别。
- 3. Token ring / 令牌环
A token is a symbol indicating that the holder has a cer-

tain right. Token ring is an access mechanism and topological structure of a LAN. 令牌是表示持有者具有某种权利的标志。令牌环是局域网(LAN)的一种存取机制和拓扑结构。

参考译文:

计算机网络

计算机网络是一组为了一定目的而相互连接起来的独立的计算机。其中每台计算机(或者叫做节点)都可能位于不同的地点,由不同的硬件构成,具有不同的操作系统。

计算机网络的主要目的是:

- 资源共享
- 并行计算
- 冗余

资源共享是设置一般性计算机网络的主要目的。资源包括硬件、软件和数据。

并行计算就是在一般情况下,任一计算机均具有它本身的输入/输出处理机,并与主处理机并行运行。由于主处理机的任务是由全部输入/输出处理机共同分担,所以从系统的观点看,就达到了并行计算。

冗余是指系统有一定的容错能力。例如,某个多处理系统,其设计目的是用于飞行控制。每一项控制决策必须通过多数主处理机的选定。任何有故障的处理机不会影响到多数处理机的选定。由于一个计算机网络包含很多硬件组成部分,所以冗余在总体规划中一直是一个重要因素。

计算机网络包括局域网(LANs)、城域网(MANs)和广域网(WANs)。

一个局域网(LAN)可以由某个局部地区(估计有几个平方英里大),例如一个公司或一所大学内的全部计算机组成。

LANs的特点如下:

- 数据传递速率高,可达 100 兆位/秒(Mbps)甚至更高;
- 低错误率, 10^{-8} 到 10^{-11} 错误/位(Epb);
- 路径选择简单;
- 距离适中,在数英里之内;
- 革新的技术。

一个城域网(MAN)实质上是规模较大的局域网,像社区天线电视(CATV)网络就是一种。就所关心的硬件或软件设计来说,一个城域网与一个局域网并无什么区别。就拿一个令牌环 LAN 来说。两个相邻节点的距离可能为 2 公里。对于一个最多 360 个节点的网络而言,其周长可达 720 公里或 450 英里。换言之,一个局域网(LAN)有可能大到一个城市。

广域网(WAN)技术意味着所有计算机可以分别位于世界的不同地点。在一个广域网中,当数据位达到了目的节点时,传输也就停止到那里。作为一个广域网的两个 PC 机可以在一间房子内互连。如果其中有一台 PC 机移到纽约,而另一台仍放在旧金山,这时,网络的作用将照旧进行,无论是硬件或软件,均无需修改。所以可以说,WANs 和 LANs 实际上是技术上的差异,而并非规模上的差异。

Reasons to Connect Computers into Networks

The term “Network” refers to two or more computers connected together. There are a number of reasons to connect computers into networks, but the two most important are:

- To allow human beings to communicate
- To share resource

As an Internet user, there are a number of ways you can communicate with people. The most important are sending electronic mail, and typing messages back and forth in real time using your keyboard and screen.

Network users can also share resources. Indeed, computer managers often arrange networks so resources that are expensive or difficult to maintain can be used by anyone on the network. For instance, a manager might attach a costly printer to a network so everyone who needs it can use the same printer. On the network, we share information resources rather than only pieces of hardware.

A local Area Network(LAN) is a network in which the com-

puters are connected directly, usually by some type of cable. When we connect LANs together, we call it a Wide Area Network(WAN). Most WANs are connected via some type of telephone line, although a variety of other technologies, such as satellite links, are used as well. The wide area connections for most of the Internet travel over some telephone system or other. Indeed, the bottleneck in establishing Internet service within developing countries is usually the lack of a reliable phone system.

We can also say that LANs are connected by special-purpose computers called ROUTERS. The job of a router is to provide a link from one network to another. We use routers to connect LAN, (to form WANs) and to connect WANs to form even larger WANs. In other words, you can consider the computers within the Internet to be connected into LANs and WANs by a large number of routers.

New Words:

1. refer [ri'fɜ:] *vi.* 指的是, 涉及
2. share [ʃeə] *vt.* 分享, 共享
3. cable ['keɪbl] *n.* 电缆
4. via ['vaɪə] *prep.* 经过, 经由
5. satellite ['sætəlaɪt] *n.* 卫星, 人造卫星
6. link [lɪŋk] *n.* 链接, 连接指令
7. bottleneck ['bɒtlnek] *n.* 瓶颈, 狭道
8. router ['ru:tə] *n.* 路由器

Phrases and Expressions:

1. to refer to 指的是……
2. human being 人
3. back and forth 来来往往
4. rather than 而不是……
5. as well 也, 同样
6. to travel over 周游, 漫游
7. developing countries 发展中国家
8. some... or other 某一……

Terminology:

1. Router/路由器

One of two basic Internet devices(the other is the host), this is an electronic device that connects a LAN to a WAN and handles the task of routing messages between the two networks. A router designed to work with the Internet is called an IP router. 路由器是因特网上两个基本装置之一(另一个是主机)。它是一个局域网(LAN)与一个广域网(WAN)相连接的电子装置,并用来在两个网络之间控制路由选择信息。专门为在因特网上工作而设计的路由器叫做IP路由器。

2. Satellite link/卫星链(路)

A radio link between a transmitting earth station and a receiving earth station via a single communication satellite. Such a link is unidirectional and consists of one up-path and one down-path connected in tandem. 地面发送站与地面接收站之间的一种通过一个通讯卫星

的无线电链路。这样的链路是单向的,由一条上行链路和一条下行链路串接构成。

参考译文:

将计算机联结成网的理由

“网络”一词指的是将两台或两台以上的计算机相互联结起来的意思。将多台计算机联结成网的理由有很多,但最重要的有两个:

- 为人们提供通讯
- 资源共享

作为因特网的一名用户,可以采用多种方式与人们通讯,而最重要的是发送电子邮件和利用键盘及屏幕实时地来往传递信息。

网络用户们也可共享资源。的确,计算机管理者组织安排网络,使贵重的资源或难以维护的资源,可供网上任何用户使用。例如,管理者可以把一台价高的打印机连接到网上,以便供网上每个需用者都能使用这台打印机。在网上,我们共享信息资源而不仅仅是一件件硬件装置。

一个局域网(LAN)中的计算机是直接相联结的(通常用的是某种类型的电缆)。当我们把若干局域网联结在一起时,我们就称它为广域网(WAN)。大多数广域网是通过某种电话线路联结起来的,尽管所采用的技术是各种各样的,例如也可采用卫星链路。对于大多数因特网而言,广大区域的联结总是通过某个电话系统运行的。的确,在发展中国家,建立因特网服务的瓶颈问题常常是缺乏一个可靠的电话系统。

我们还可以认为局域网是由一些具有特殊目的的计算