Computer Centre, The University of Hong Kong

Computer News

July, 1996 to September, 1996 No. 64

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Dial-up Services
  60-minute lines (HKUPPP and HKUDIAL):
    - 24-hour general access : 25480590
    - 24-hour staff only general access : 28030202
    - Night-service general access : 28578650
    (6 p.m. - 8 a.m. next day)
  30-minute lines (HKUDIAL only):
    - 24-hr service lines : 28592595
    - Night service lines : 28597992
    (6 p.m. - 8 a.m. next day)

Operation Schedule

Computer Centre Opening Hours

Normal Schedule : Sept. 16, 1996 to June 16, 1997
Monday (8:00 a.m.) - Saturday (9:00 p.m.)
Sunday (12:00 noon - 7:00 p.m.)

(All central host systems will be running unattended during the closed hours.)

Microcomputer / Workstation Rooms

Run Run Shaw Building (Room 101, 103, 104) :
Monday (8:00 a.m.) - Saturday (4:00 p.m.)

Run Run Shaw Building (Room 113, 210) ,
Knowles Building (Room 218) and
K.K. Leung Building (Room LG-108) :
Monday - Friday (8:30 a.m. - 10:00 p.m.)
Saturday (8:30 a.m. - 3:30 p.m.)

Old Library Building (Room 134, 135, 136),
Run Run Shaw Building (Room 201):
Monday - Friday (9:00 a.m. - 5:00 p.m.)
Saturday (9:00 a.m. - 12:30 p.m.)

(All microcomputer/workstation rooms are closed on Holidays)

Holiday Schedule from October 1996 to December 1996

Holiday	*Centre Close on*	*Centre Re-open on*
Mid Autumn Festival	September 27, 1996 (Friday) 5:00 p.m.	September 29, 1996 (Sunday) 12:00 noon
Chung Yeung Festival	October 20, 1996 (Sunday) 7:00 p.m.	October 22, 1996 (Tuesday) 8:00 a.m.
Winter Solstice	December 21, 1996 (Saturday) 4:00 p.m.	December 22, 1996 (Sunday) 12:00 noon
Christmas Holidays	December 24, 1996 (Tuesday) 8:00 a.m.	December 27, 1996 (Friday) 8:00 a.m.
New Year Holidays	December 31, 1996 (Tuesday) 1:00 p.m.	January 2, 1997 (Thursday) 8:00 a.m.

(All central host systems in the Computer Centre will be running unattended during the holidays.)

Scheduled System Maintenance

Vax 6510 (HKULBR)

October 2, 1996 (Wednesday)
10:00 a.m. to 1:00 p.m.
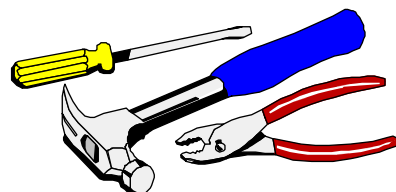
General News

The HKU Campus Network

(Note: This is reprinted from an article appeared in the April issue of the Bulletin for staff users who are new to the University. Since its publication, the planned work for Tsui Tsin Tong Building and the Department of Nursing Studies mentioned in the article have been completed. Additional dialing lines are installed. HKUWIN for Windows 95 and the ATM and Fast Ethernet technologies mentioned are also being introduced.)

Introduction

The initial development of the HKU campus network dates back to 1988, when the Computer Centre was first connected with the departments of the Engineering Faculty in the Haking Wong Building. Since then, our network has grown rapidly and is now extended to cover most of the buildings in the campus. At present, we have a very efficient campus-wide network offering global Internet network communications with many advanced functions supported. Indeed, computer communication is now an essential element in the teaching, learning, research and administration activities of the University.

The Network Architecture

The backbone of our campus network is based on the 100 Mbps (million bits per second) FDDI (fibre-distributed-data-interface) technology and the 10 Mbps Ethernet technology. Major buildings are connected by fibre-optic cables while the networks and computers inside the buildings are usually connected by copper wires. The remote sites are connected by leased data circuits from Hong Kong Telecom. To cater for the ever-increasing demand of more network bandwidth, we have also employed switched-FDDI and switched-Ethernet technologies.

The Campus Network

The campus network covers all the four major sites of the University, namely the Main Campus, the Sassoon Road compound, the Queen Mary Hospital compound and the Prince Philip Dental Hospital compound. Access to the campus network and Internet resources from other geographically isolated or remote sites of the University are supported through dedicated data links of lower speed or through dial-up connections.

The Main Campus

In the main campus, all the major buildings, new and old alike, are interconnected by multiple FDDI fibre networks. The old buildings include the Main Building, Knowles Building, K K Leung Building, the Old Library Building, Haking Wong Building and Run Run Shaw Building, while the new buildings include the New Library Building, the Chong Yuet Ming Buildings (Phase IV), Chow Yei Ching Building (Phase V), Meng Wah Complex (Phase VI) and Tsui Tsin Tong Building. A FDDI Giga-switch is used to interconnect the networks, which boosts the performance of the FDDI backbone of the Campus Network to an aggregated speed of 1.2 gigabits/sec.

The Runme Shaw Building, Hui Oi Chow Building and James Lee Building are currently still connected to the backbone network through copper Ethernet links. There is increasing network contention in these buildings and we are in the process of upgrading some of these network connections. Eliot Hall, Pao Siu Loong Building, Hung Hing Ying Building, Hui Pui Hing Building and the Timber Hut near the old Chemistry Building are connected through fibre Ethernet links. The network link to Tang Chi Ngong Building is still based on a slow serial 19.2 Kbps link, but work is now in progress to upgrade it to a fibre Ethernet link as well.

The Sassoon Road Compund

In the Sassoon Road area, networks of Li Shu Fan Building, Patrick Manson Building (including the South Wing), the Estates Office, the Institute of Molecular Biology and the Laboratory Animal Unit Buildings are connected together through either copper or fibre Ethernet links to form a sub-network of the main campus network. Full network connectivities are provided through a hierarchy of routers, bridges, repeaters and switching hub devices. Connection to the main campus is through a 512kbps data circuit and we plan to upgrade the link to T1-speed (1.544Mbps) later.

The Queen Mary Hospital Compund

The building of the campus network at the Queen Mary Hospital area faced substantial difficulties at the beginning. It has taken much longer to start the project than we initially planned. But thanks to the cooperation of the Faculty of Medicine, our Estates Office and the Hospital Authority, the network is now fully established and provides local area and Internet network access to our medical colleagues in the Professorial Block, the New Clinical Building, the J and K Blocks, the Hospital Pathology Building and the University Pathology Building. The network set up is similar to that in the Sassoon Road compound.

The Dental Hospital Compound

The campus network at the Dental Hospital compound was established

with relative ease compared with the Queen Mary Hospital Compound. The network set up is basically similar to the Sassoon Road compound as well.

The Sports Centre

One other network worth mentioning is the connection at the Flora Ho Sports Centre. The network traffic is relatively low at the moment and the Sports Centre is connected to the main campus through a 19.2 Kbps serial line only.

The Cabling Technology

Our network cables have evolved since the network project was started some eight years ago. We started with thick Ethernet coaxial cables (yes, it was thick, some 1/2 inch in diameter and with very little bending flexibility) as the main trunk and thin Ethernet (known as 10Base2) cables for the connections to the PCs. In fact, most of the network connections built before 1994 were based on the thin Ethernet cables. For those buildings completed after 1994, i.e. Phase IV, Phase V and Phase VI buildings, all the network connections are now based on the UTP (Unshielded Twisted Pairs) cables for 10BaseT connections. These cables also have the distinct advantage that they could support much higher transmission speed, i.e. up to 100 Mbps, by using Fast Ethernet technology if needed in the future.

Scope of the Network Connections

When the campus network project was first started, it was decided that only TOS I staff would be provided with a PC on the desktop. Thus the scope of the wiring required was the offices of the teaching staffs. Later the requirement was extended to the departmental offices, the laboratories and the centrally-administered classrooms. The scope of the network has widened quite extensively over the years, and coupled with the completion of quite a few new buildings in the last few years, it has been a period of intensive work for the Computer Centre. We must thank the Estates Office for their close cooperation in the entire project. Without their help, we won't have our campus network today.

Internet Connection

Our campus network is connected to our sister institutions in Hong Kong, forming the Hong Kong Academic and Research Network (HARNET), through a T1 (1.544 Mbps) datalink. HARNET is in turn connected to Internet through a T1 link to the United States. The Internet link is managed by the Joint Universities Computer Centre (JUCC). Thanks to the University Grants Committee and the Research Grants Committee, the Computer Centre has worked with the JUCC in successfully getting a $18 million grant to finance the T1 Internet link for the current triennium.

All computers, whether PCs, MACs or UNIX workstations, connected to our campus network have full access to the Internet. All staff and students are also provided with network accounts to facilitate their access. The Computer Centre also provides support for dial-up access to the network from home and remote sites using modems.

Departmental LAN Facilities

To facilitate departments to have easy and convenient use of the facilities available on the Campus Network, the Computer Centre maintains a number of centrally managed Novell LAN file-servers each of which serves several departments to provide access to the central network. Network services include terminal access to host computers (telnet), file transfer (ftp), electronic mail (email), World-Wide-Web (WWW) and others. Through either the HKUMENU (DOS) or HKUWIN (Windows) interface on these servers, our users have easy access to all the central network services available. Departments can also make use of the centrally provided LAN servers to set up shared facilities required by their staff members, e.g. printer server, commonly adopted programs for office functions, etc.

Due to manpower reasons, we have devoted our major efforts to support the PC platform which accounts for 90% of the computer population in the campus. Nevertheless, we do provide assistance to Macintosh users in setting up their computer stations for access to the Internet functions through TCP/IP protocols. We have set up two central Macintosh laboratories for our users as well.

Central Network Facilities

The Computer Centre has set up a number of useful central network facilities which are conveniently available to our users. Through the central compute-servers and the LAN file-servers set up by the Computer Center, staff and students can have easy and efficient access to the many Internet facilities, electronic newsgroups for open-forum, advertisement and seminar announcement, World-Wide-Web (WWW), access to library databases and catalogues, etc. By the end of 1995, the number of registered users on our central compute-servers has already exceeded 10,000. There are too many services to describe all of them here. We highlight three important services recently installed below:

Central Information Server

Our information server is based on a powerful SUN SparcCentre 2000E computer with 10 CPUs and 25 GB disk storage. It serves the multiple functions of the central WWW, News, FTP, email and dial-up management servers. Departments and student societies are welcome to set up their own web pages on this system for efficient dissemination of their information to students, colleagues and the world-wide users of Internet. It is also possible to restrict the information for internal access as well. Details on our WWW services will be

covered in the next article of the Computer Centre. Interested parties can also contact the Computer Centre for more details.

University Information System (UIS)

The University Information System will be a new vehicle on the Campus Network for supporting efficient storage and retrieval of information on our central databases. As a functional module of UIS, an annual leave management system, which has been quite well received, was put into service last year. More functions, e.g. staff personnel information, finance data, student information, etc., are being added and will appear in the coming months. More details of the UIS will be given in a later article.

The IBM SP2 Supercomputer

The Computer Centre is fortunate to get the support of the University in providing the resources for the acquisition of the IBM SP2 Supercomputer. This is a high performance scalable parallel computer which has been put into service recently. It consists of 32 powerful computer processors operating in parallel and its peak performance is rated at 8.5 GFLOPS (billions of floating-point operations per second). This is currently the fastest system in Hong Kong, and presumably in South-East Asia as well. Through the campus network, staff and students doing researches requiring intensive computation will find this system a valuable resource.

Future Plans

With the general awareness of the importance of the Campus Network, we forsee the need to further its development. There are still substantial ongoing work on the cabling side and we still receive requests for extension of network cables from departments literally everyday.

We shall soon see the completion of the Tsui Tsin Tong Building with the full functions of network connectivity incorporated. In the next few months, we also look forward to seeing residents of our Robert Black College being able to communicate with the world through Internet, and all rooms in its May Wing for graduate scholars will be equipped with direct network connections. Meanwhile, we are also working with the Estates Office to extend the campus network to the newly established Department of Nursing Studies, planning on the network facilities in the Graduate House scheduled for completion next year and providing new network cablings for a number of renovation projects consequential to the recent completion of the new buildings.

We are also investigating how network access could be extended to the student halls and hopefully could provide some access in the coming year. To cope with the great demand of network access from home through dial-up channels, we shall install more dial-up lines. We are pleased to inform our users that the Estates Office has already agreed to provide us more lines from the University's PABX for dial-up access during the evening and night periods.

To further enhance the functions of the Campus Network, we are testing out a scheme of supporting the HKUWIN interface under Windows95 so that our network users can reap the benefits brought by the new generation of Pentium PC computers and Windows95 operating system. We expect that this new facilities could be put into service quite soon. We are also formulating a strategy to upgrade the infrastructure of the Campus Network so that those "bandwidth hungry" network applications, such as campus-wide video conferencing, could be introduced in time when the technology become mature. We would like to introduce the ATM (Asynchronous Transfer Mode) and Fast Ethernet technologies to our Campus Network this year as pilot projects of providing the high bandwidth necesary for advanced projects of multimedia and video applications.

Since the inception of the HKU Campus Network in 1988, the Computer Centre has been continuously expanding the scope and enhancing the functions of the campus network. We have been trying our best to keep our University abreast with the most advanced Internet network facilities. And we shall continue our effort in providing the University with the best network functions and latest technologies in this era of the "Information Superhighway".

Dr P T Ho
Deputy Director
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Network Links for the QMH, the Sasson Road and the PPDH Premises Upgraded to T1 Speed

We are pleased to announce that the network data circuits for linking the Campus Network to the Queen Mary Hospital, the Sasson Road premises and the Prince Philip Dental Hospital have been upgraded from the speed of 512Kbps to T1 speed (1544Kbps) in July, 1996.

With the upgrade, the speed of running the centrally provided applications (e.g. access to host computers, UIS) and Internet access (e.g. web surfing, ftp for file transfer) in the above three remote campus has been notably improved.

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New Electronic Form for Computer Account Applications

The Computer Centre has been employing electronic forms to allow users to apply for their computer accounts, including the "general accounts" on host computers and HKUPPP accounts, through the HKU Campus Network for two years. The electronic form facility has been proved to be very succesful. Considerable staff resources which were previously required to process the huge volume of applications forms received at the start of a new academic year can be saved. At the same time, users can take their convenience to apply for their computer accounts from their own working places, e.g. staff offices and student PC laboaratories, through the network. While paper savings may not be so apparent to many users, they should appreciate the efficiency improvement in terms of the time required for creating their accounts. In most cases, it takes less than a day for our computer systems to create a user's computer account after his electronic application is submitted, though our Centre's target is to complete the processing of an application within 3 working days (it was 7 days before the electronic forms were employed).

With the user feedbacks and our experiences gained with the use of the electronics forms, we have newly developed an integrated "Apply Computer Account" electronic form to provide the following enhancements to the previous version :

1) Separate forms for catering different kinds of computer accounts are now integrated into one;
2) WWW technology is employed so as to eliminate the old requirement of using a specific type of character-based terminal (or its emulation program); the new "Apply Computer Account" electronic form can now be invoked through any networked computer supporting a WWW browser, e.g. Netscape, no matter whether it is a PC, Mac or UNIX workstation;
3) The new form can handle also applications from users who have not got the Hong Kong Identity (HKID) Card (this category of users are still required to come to the Computer Centre to allow its staff to confirm their application eligibility);
4) The new electronic form is built using the client/ server approach and can handle larger number of simultaneous applications with much faster response than that of the old versions.

The integrated "Apply Computer Acount" electronic form will provide the following functions :

1) Computer Account Status Enquiry
2) Host Account Application
3) PPP Account Application

4) Additonal Host Account Application

Starting from September 1996, users can call up the "Apply Computer Account" electronic form with the URL (Universal Resource Location) "http://www.hku.hk/intranet/cc/form/" by means of a GUI web browser, e.g. Netscape. The form can also be conveniently invoked by clicking the icon "Apply Computer Account" which appears on the "Central Network Services" program group of HKUWIN on the LAN file-servers managed by the Computer Centre.

Should there be any queries, please contact the undersigned.

S.L. Lee
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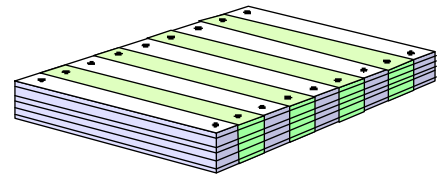
Bitnet Service Termination

As mentioned in the last issue of Computer News, we wish to inform our users that Bitnet service with the University of Yale has been terminated in June, 1996.

Electronic communication using Bitnet address, i.e. *username*@hkucc.bitnet can no longer be recognized as a valid address in our environment. Users who are still using the Bitnet address for electronic communication should change their Bitness address to Internet address format, i.e. *username@hostname.hku.hk* and notify their communication peers of such changes accordingly.

For further enquiries about the change to Internet address, please contact the undersigned.

C.M. Mak
Tel: 28592491
E-mail: cmmak@hku.hk

New SUN Enterprise 6000 system for Information Server Enhancement

We are pleased to inform our users that a powerful SUN UltraSPARC Enterprise 6000 system has been acquired for the purposes of improving the capacity as well as the system availability of our Internet services of WWW, News bulletin boards, ftp server and email. The new system will be equipped with 8 processors, 348MB of memory and 12GB of disk storage with the aggregated CPU performance ratings of 61000 SPECrate_fp92 and 44000 SPECrate_int92.

We are expecting that the new system will be delivered and installed in September. This new system will be integrated with our existing Information Server which is a SUN SPARCcenter 2000E system to form a dual-computer based enhanced Information Server. In addition to the added CPU power and disk storage for improved access speed by more users and accommodating more information and new applications required by University departments and student societies, the dual-computer based Information Server will be enhanced with "High-Availability" feature using a software called "FIRST Watch". Under normal system condition, the UltraSPARC Enterprise 6000 and the SPARCcentre 2000E systems will share the different Information Server functions in a prescribed manner. At the same time, the two computers will monitor each other to find out whether the other system has failed using "FIRST Watch". When the "First Watch" software which runs on either of the two computers of the enhanced Information Server detects failure of the other one, the healthy system will start to take up all the services which are normally run on the system which has gone down until the failed system is repaired. The new system is now being installed. When the new "High-Availabilty" Information Server is put into operation, outage of service due to failures of the computers would hopefully be much reduced.

C.M. Mak
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E-mail: cmmak@hku.hk
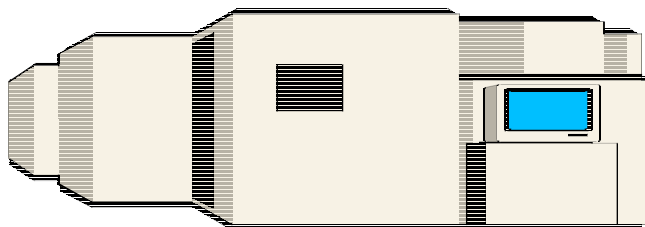
New SUN Enterprise 6000 to Serve as HKUSUB for Academic Services

A SUN UltraSPARC Enterprise 6000 system has been acquired to augment the existing central host computers for supporting the academic computing and network communications. The new system is a SUN UltraSPARC Enterprise 6000 SMP (Symmetric MultiProcessor) computer with 8 processors, 512MB of memory and a SPARCStorage Array of 24GB disk storage, with the aggregated CPU performance ratings of 61,000 SPECrate_fp92 and 44,000 SPECrate_int92.

With the installation of the new SUN system, we are going to gradually retire our two aged DECSystem 5500 computers (now named as HKUXA and HKUXB) within the coming year. They are our oldest UNIX systems which have been supporting the central academic computing services for about 6 years. The UltraSPARC Enterprise 6000 will be set up to take up the role of our HKUSUB system which is now a less powerful SUN SPARCServer/670 computer. This SPARCServer/670 will be redeployed to take up those network functions which are required to run on the HKUXA/HKUXB systems.

Same as the present arrangement, the renewed HKUSUB (using the new SUN UltraSPARC Enterprise 6000 system) will share the same NIS file with the HKUSUA so that users can use the same username and password to login their HKUSUA/HKUSUB/HKUSGA accounts. As far as users of HKUSUA and HKUSUB are concerned, there will be little changes introduced by the installation of the new system except for its more abundance of system resources and improved performance.

The new system is scheduled to be delivered in late September this year. We shall further discuss its availability and our plan of retiring the DECSystem 5500 computers mentioned above in the next issue of Computer News.

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New and Updated User Documents

To assist users in using the Computer Centre's newly provided or upgraded facilities and services which are not described in the User's Handbooks, the Centre is maintaining a series of User Documents to supplement the information provided in the User's Handbook. We are please to inform our users that the following new or updated User Documents can be obtainable from Centre's Enquiry Counter :

UD111	Index of User Documentation^
UD200	Using Matlab on Unix Environment
UD201	Use of Medal on Unix workstations
UD202	HKUPPP Dial-up Package for Win3.1 (July 1, 1995)
UD203	UIS
UD204 a	UIS - Annual Leave System
UD204 b	UIS - Annual Leave System(Leave Approval Authority)
UD204 c	UIS - Annual Leave System (Dept Administrator)
UD204 d	UIS - Annual Leave System (General Users)
UD205	UIS - The Personnel System
UD206	UIS - JUPAS Admission System
UD207	UIS - Enrollment Enquiry System
UD208	UIS - Introduction to the Department Financial Statements Security Control (Department Heads)
UD209	UIS - For all users
UD210	UIS - The Committee Membership System
UD211	HKUPPP for Windows 95
UD212	HKUPPP for Macintosh
UD213	E-mail User Guide (Eudora)
UD214	E-mail User Guide (Pine)

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Two Level Subscription Structure for Alumni Accounts

The Computer Centre has extended its network services to University's graduates for their personal and non-commercial use since November 1994. Our graduates can apply with the Comptuer Centre for alumni accounts for network communications and accessing information of the University as well as the Internet services. It is hope that our alumni account service can facilitate efficient communications among our alumni and help to established closer tie between them and their Alma Mater. However, we learned from the feedbacks that the annual subscription fee of HK$2500 was too high, especially for those who require relatively short time of access to the University's network for email communications.

With a recent agreed change of Internet charging arrangement among JUCC (Joint Universities Comptuer Centres) institutions, we can now offer the alumni account service with a lower tier of annual subscription fee at the level of HK$1,500. The existing annual subscription level of HK$2,500 will remain as an option for those graduates who require higher access usage.

When a graduate applies for an alumni account with the Computer Centre, he will be allocated an account on one of our Unix servers for email and other netowrk communications with 5MB of disk storage and an account for gaining access to the University network through dial-up modems using the PPP (Point to Point Protocol). A usage budget equivalent to the subscription fee will be provided for using the facilities. To facilitate easy access to the HKU network using modems, a HKUPPP software installation kit on 3.5" floppy disks will be provided. The HKUPPP software package includes WWW browser, telnet, ftp and Eudora (for electronic mail). Versions of the package for Windows 3.1 and Windows 95 on PCs, and for Systems 7 on Macintosh are available.

The charge of the usage of the network facilities, based on the connection time, CPU time and disk space allocated, will be deducted from the allocated budget (see page 8). When the budget is reduced to zero or a negative value (i.e. overdrawn), the user's access to the service will be suspended until additional budget (in units of HK$500) is acquired.

For graduates having the University's alumni credit card, they will get a 10% discount from the subscription fee (with no reduction in the budget to be allocated).

Interested graduates can obtained the Application Form from the Centre's General Office at Room 223, Run Run Shaw Building. For further information, please contact either Ms Idy Tang (Tel: 28592491, E-mail: kytang@cc.hku.hk) or the undersigned.

C.M. Mak
Tel: 28592491
E-mail: cmmak@hku.hk

Centrally Managed LAN File-Servers Upgraded

We are pleased to announce that the following centrally managed LAN File-servers for supporting academic departments and Computer Centre's PC laboratories have been upgraded to Netware Version 4.1 which fixes many problems found in the previous versions and works more efficiently.

Server	Supported locations and departments
HKUHW1	Haking Wong Building
HKUKB1	Knowles Building, and part of Meng Wah complex
HKUKK2	K. K. Leung Building, part of Eliot Hall and Meng Wah complex.
HKULS1	Buildings on Sassoon Road
HKUP4	Chong Yuet Ming Buildings
HKURM1	Run Me Shaw Building, Hui Oi Chow Building and James Lee Science Building.
HKUPP1	Prince Philip Dental Hospital
HKUQP1	HKU departments in Queen Mary Hospital
HKUPC2	Run Run Shaw Building
HKUPC1	Computer Centre's PC Laboratories
HKUPC3	Computer Centre's PC Laboratories

The HKUMB1 LAN file-server which is serving departments in the Main Building will be upgraded to Netware 4.1 in due course. A new file-server named HKUMH1 will also be installed to serve departments in the Meng Wah Complex soon. The new server will provide improved access of the centrally provided facilities over the Campus Network to the departments which are in the Meng Wah Complex and using the HKUKB1 and HKUKK2 servers.

In addition to the NOS (Network Operating System) upgrade, the PC hardware of the HKUKB1, HKUKK2, HKULS1, HKUPC1, HKUPC2, HKUPC3 and HKUPP1 LAN file-servers have also been upgraded.

For further information about the centrally managed LAN file-servers, please contact the undersigned.

T. Y. Shen
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Annual Reset of Computer Budget

.We would like to inform our users that the computer budget of all user accounts, including the PPP accounts, has been reset to its standard allocation on September 1, 1996. The standard host computer budget allocation for staff and postgraduate student users is $5,000 and that for undergraduate student users is $2,000. The standard PPP account budget allocation is $1,800 for all users.

The charges of the usage of the computing and network facilities will be deducted from the budgets of the respective user accounts according to he following schedules:

	DEC OpenVMS servers (HK$)	UNIX account (HK$)	IBM 9072 (HK$)	PPP (HK$)
Connection time/hour	3.00	3.00	3.00	6.00
CPU time/second	0.03	0.02	0.02	N/A
1MB of disk storage/month	6.00	2.00	2.00	N/A

Note: Disk storage charge is based on the maximum allocation for a given month and not on actual usage in that month.

While the user budgets have been reset, we would like to remind our users that if they have exhausted the allocated budget of any of his accounts before September next year, they will not be able to gain access to that account further until additional budget can be allocated. To avoid inconveniences caused by running out of computer budgets due to unnecssary wastage, users are advised to ensure that their computer sessions are always logged out properly before they leave or turning off the PCs. Users are also advised to check regularly their remaining budget on the host computers (i.e. DEC OpenVMS (HKUCC), unix servers (HKUSUA, HKUSUB, HKURSC, HKUSGA, HKUXA and HKUXB) and the IBM 9076 SP2 system (HKUSP2) by using the command "budget". To check the remaining budget of your PPP account users can use a WWW browser to visit "PPP Account Usage Enquiry" on the Computer Centre's homepage

For users who require to apply for additional computer budget, the appropriate applications forms can be obtained from Centre's Enquiry Counter at Room 223, Run Run Shaw Building.

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New Software on HKUSP2

To facilitate our users in better use of the parallel processing power of the University's IBM 9076 SP2 supercomputer (HKUSP2), we are pleased to announce the availability of a number of software libraries and tools on the system. These new software libraries/tools allow the users to concentrate their thoughts and efforts in tackling the core of their problems rather than in implementing programs for certain known algorithms required for solving their problems. The new software available include the High Performance FORTRAN (HPF) development tool, the ScaLAPACK version 1.0 and FORTRAN 90 Multiprecision Libraries, the MPI (Message Passing Interface) and the "checkfree" utility program for checking free nodes. The functions and usage of these newly available software are hightlighted below :

1.   PGI HPF

The Portland Group Inc. (PGI) High Performance Fortran (HPF) development tool consists of a HPF compiler version 2.1, a runtime library and a profiler. The pghpf (Portland Group High Performance Fortran) compiler is targeted for program development using the SPMD (Single Program Multiple Data) programming model supported by the IBM 9076 SP2 Supercomputer. The SPMD programming model is implemented by loading the same program image into all of the parallel processors, each of which will then allocate and operate on its own local portion of distributed data arrays in accordance with the scheme of array distributions, array sizes and the number of processors as determined by HPF directives during the program runtime. The HPF directives are used to specify the location (or layout) of data. The pghpf profiler is used for analyzing the data generated during the execution of compiled High Performance Fortran programs. It allows users to discover which functions and lines of program codes were executed, their execution frequency and the total CPU time they consumed. It also allows a user to examine the multi-processor information on the systems. The multi-processor information will facilitate a user to find out the communication patterns of his parallel program and tune for improved performance. It would be easier for a user to use the HPF development tool than using Message Passing Interface (MPI) to develop parallel programs.

In order to use the PGI HPF compiler on HKUSP2, the environment variables for running the compiler has to be set in the .cshrc file, as follows:

```
setenv PGI  /usr/local/pgi
```

```
set  path=( $path ${PGI}/sp2/bin )
setenv MANPATH ${MANPATH}:${PGI}/man
setenv LM_LICENSE_FILE $PGI/license.dat
```

To compile a HPF program, say "test.hpf", on the HKUSP2 system, type :

```
$ pghpf  -Mmpl  test.hpf -o a.out
```

Users who wish to know more about the Portland Group's High Performance Fortran can refer to information shown on the web page "http://www.hku.hk/cc/sp2/software/hpf.html".

2.   ScaLAPACK Library

ScaLAPACK is a library of parallelised linear algebra routines for high performance computers. Versions of the library using PVM and MPI are available. This library includes program subroutines for solving systems of linear equations, least squares problems, eigenvalue problems and singular value problems. It can also handle many associated computations such as matrix factorizations or estimating condition numbers. The library is available in single precision real, double precision real, single precision complex, and double precision complex. For the latest information about the ScaLAPACK library and its compilation procedure, please refer to the web page "http://www.hku.hk/cc/sp2/software/scalapak.html".

3.   FORTRAN90 Multi-Precision (MP) Library

The FORTRAN90 based Multiprecision library is developed by NASA. It supports the use of numeric variables of increased precisions, which can be of the types of MP (MultiPrecision) integer, MP real or MP complex, in a FORTRAN90 programs. With a few execeptions, a user can write ordinary FORTRAN90 programs using these variables for arithmetic operations in a high precisions which can be set to an arbitrarily high level. With the MP Library, most of the FORTRAN intrinsic functions, such as SIN, EXP, and MOD, for MP arguments are defined. The following is a sample FORTRAN 90 program to illustrate the use of MP Library for high precision computation and a comparison of its program results with that of a standard double precision version of the program.

```
TYPE (MP_REAL) :: A
REAL*4 :: B
A = mpreal( 1 ) / mpreal( 3 ) + 1
B = A
write(*,*) "Multiprecision version result "
call mp_write(6,A)
write(*,*) "Standard version result"
write(*,*) B
```
Multiprecision version result:

10 ^ 0
1.33333333333333333333333333333333333333333333333333333333333333333

Standard version result :

1.33333333333333333333

The manual of this library can be found on "ACM Transactions on Mathematical Software, Vol. 21, No.4, December 1995, pages 379-387."

Latest information about the library is available on the web page "http://www.hku.hk/cc/sp2/software/mp.html".

4.   Message Passing Interface (MPI) Library

Message Passing Interface (MPI) is a standard specification for message passing libraries defined for parallel computing using the message passing method on distributed memory systems. It is conceived as a widely accepted standard for developing message-passing parallel programs. The public domain version of the MPI Library, MPI version 1.0.12 from Argonne National Lab/Mississippi State University, has been installed on HKUSP2.

Detailed information about the MPI Library and its compilation procedure on HKUSP2 is shown on the web page
"http://www.hku.hk/cc/sp2/software/mpi.html".

5.   Checkfree Utiltiy

A home-developed script called "checkfree" for convenient checking of the available free nodes on HKUSP2 has been provided in the directory /usr/local/bin. Very often, users are submitting jobs without knowing the number of processor nodes that can be available at the job submission moment. It is not uncommon that the number of processor nodes required to start a parallel program job cannot be available while certain number of free nodes are reminded idle, e.g. there are 6 free nodes and a program requiring 8 nodes to start is left in the queue. For many cases, a users can use the "checkfree" utility to find out the number of free SP2 nodes available at the time when he wants to submit a parallel program job. He can then set the loadleveler statement max_processor and min_processor to an

appropriate value for his parallel job so that it can be started immediately by using the free processor nodes available.

Example :

$ checkfree

```
**************Frame 1 : spf1n[xx]************
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
 * * * * F F F F * * * * F F F F
**************Frame 2 : spf2n[xx]************
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
 * * * * * * F F * * * * F F * *
********************************************
Total free nodes at Frame 1 :  8
Total free nodes at Frame 2 :  4
$
```

In the above example, "F" means that the indicated node is free and there are total of 12 free nodes. If a user submits a job requiring 16 nodes to run, it will not be started because there are only 12 available free nodes. However , if a user has set the loadleveler statements min-processor to 10 and max-processor to 16, the loadleveler will then start this user's job with the 12 free processors.

For further enquiries about the new software available on HKUSP2, please contact the undersigned.

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HKUSP2 Job Time Limit Measured by Job Elapse Time

The 32 nodes of the University's IBM 9076 SP2 Supercomputer (HKUSP2) are now functionally partitioned into two pools : one consists of 4 processor nodes (spf1n01e - spf1n04e) for supporting interactive login sessions and the other consists of 28 processor nodes (spf1n05e - spf1n16e and spf2n01e - spf2n16e) for running jobs in batch mode through the "Loadleveler" job scheduler.

At present, six classes of batch job queues are defined with different processing time limit. Three of the classes are for serial jobs and three are for parallel jobs. Each of the classes is associated with a processing time limit, i.e. any job run to exceed this limit will be killed by the system.

In the past, the processing time limit was measured in terms of CPU time. However, it has been noted that certain batch

jobs may run for days without reaching the CPU time limit e.g. a parallel program which runs into the deadlock situation and all the processors are in waiting mode. In order to avoid such undesirable situations to happen and to allow our users to have better estimation of the start and finish time of their jobs which are submitted to a batch queue for running, the basis for measuring the processing time limit of the six classes of Loadleveler batch job queues of HKUSP2 have been changed from CPU time to job elapse time starting from August 1, 1996, as summarized below :

Class	Job type	Processing time limit
p_small	parallel small job	10 minutes of elapse time
p_medium	parallel medium job	2 hours of elapse time
p_large	parallel large job	10 hours of elapse time
s_small	serial small job	10 minutes of elapse time
s_medium	serial medium job	2 hours of elapse time
s_large	serial large job	10 hours of elapse time

The elapse time of a job is the wall clock time measured from the start to the end of the job, e.g. if a job starts at 11:00a.m. and its processing time limit is 10 hours (of elapse time), the job will be terminated involuntorily if it cannot run to its end at 09:00p.m. If the required resources are available, the loadleveler will try to start the jobs in the p-small, p-medium, p-large, s-mall, s-medium and s-larger queues in the same order as the job queues just listed.

For more information on the use of the loadleveler for batch job submission, please refer to the web page "http://www.hku.hk/cc/sp2/software/loadl.html".

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UNIX News

ADINA: Finite element software available on HKUSUA

We are pleased to announce that ADINA (Automatic Dynamic Incremental Nonlinear Analysis) package which was previously provided on the VAX6420 is now available on HKUSUA.

ADINA is a suite of finite element software that are used for structure and fluid flow analysis. For analysis of structure problems, basic linear analysis can be performed and nonlinear effects can be included as required to account for the geometric and material nonlinearities and contact conditions. For analysis of fluid flow problems, incompressible or compressible flows can be solved.

The ADINA package includes a pre-processor, a solver and a post-processor. The ADINA-IN pre-processor module is used to define and display the finite element model (e.g. geometry, material properties, boundary conditions, loads, etc. of the model). The solver now consists of the ADINA and ADINA-F modules which are designed for stress analysis and fluid flow analysis respectively. In the next release of ADINA, the ADINA-T module for heat transfer analysis will be available. The available solvers (i.e. ADINA and ADINA-F) can also be used in combination. The ADINA-PLOT post-processor module is used to display the results generated by the solver modules (e.g. deformed meshes, stress or temperature contours etc.).

The current version of ADINA is 6.2. A Graphical User Interface (GUI) is employed for its pre-processor (i.e. ADINA-IN) and post-processor (ADINIA-PLOT). Hence ADINA-IN and ADINA-PLOT modules must be invoked from a workstation supporting X window. X window display is required even when the modules are used in the command mode. The ADINA-IN or ADINA-PLOT modules can be invoked at the Unix prompt with the command below

$ ADINAHOME/aui

The ADINA package on HKUSUA is a special University version which can support problems of up to 700 nodes. For users who wish to learn more about the ADINA software, please refer to the following ADINA manuals which are available for short term loan from the Centre's General Office at Room 223, Run Run Shaw Building.

1. ADINA User Interface Users Guide, February 1995
2. ADINA Verification Manual, February 1995
3. ADINA Theory and Modeling, February 1995

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PC NEWS

Overview Of PC/Mac Laboratories

Login and Logout Procedures

The facilities in the Centre's PCs and Macintoshes laboratories can be used by all University members, including student and staff. To use the PC facilities, a user should first go to "Registration Terminal" in a PC laboratory to register his PC session by specifying his user identification and password and then selecting the PC to be used. This is usually called the "login" process. Users who have logged in for their PC sessions must "logout" the PCs by going to the "Registration Terminal" again and carry out the "logout" process which is quite similar to the "login" process. Instruction for the login and logout processes are displayed at the "Registration Terminal". For Macintosh systems in Room 104, Run Run Shaw Building, the "login" and "logout" processes are not implemented.

New PC and Mac Laboratories

A new PC laboratory is now being set up in Room 201, Run Run Shaw Building and will be available for service by the end of September. There will be 24 Pentium/120MHz PCs for students and one for the instructor. Each PC has 16MB memory, 1GB disk, a SVGA display and a sound card. Switched Ethernet network is employed to allow efficient access to the Campus Network. The laboratory is set up in a classroom setting and teachers can book the room for instructional classes.

Room KK-LG218 which is now housing both PC and Macintosh systems has been converted to a full Macintosh laboratory.

The Centrally Managed PC/Mac Laboratories

The Centre's PC and Macintosh laboratories and their locations are summarised below:

Run Run Shaw Building Room 101	(classroom with 20 PCs)
Run Run Shaw Building Room 103	(open access facility with 47 PCs)
Run Run Shaw Building Room 201	(classroom with 24 multimedia PC systems; available in late September)
Old Library Building Room 134	(open access facility with 60 PCs)
Old Library Building Room 135	(classroom with 29 multimedia PCs)
Knowles Building Room 218	(classroom with 12 PCs)
Run Run Shaw Building Room 104	(classroom with 16 Macs)
K K Leung Building Lower Ground Room 108	(classroom with 16 Macs)

Software Available

The software provided in the Centre's PC Laboratories are summarised below :

Microsoft Access for Windows v2.0
Microsoft Foxpro for Windows v2.6
Microsoft Excel for Windows v5.0
Microsoft Chinese Excel for Windows v4.0
Microsoft Office Professional v4.3
Microsoft PowerPoint v4.0
Microsoft Visual Basic (Standard)
Microsoft Visual C++ (Standard) v1.0
Microsoft Word for Windows v6.0c
Microsoft Chinese Word for Windows v6.0
Microsoft Windows v3.11
Microsoft Chinese Windows v3.1
WordPerfect (Multi-Platform)
SAS v6.1/Base
SAS v6.1/Stat
SAS v6.1/IML
SAS v6.1/Graph
SAS v6.1/ETS
SAS v6.1/FSP Watcom (Multi-Platform)
SPSS for Windows v6.1
— 32-bit software, only available in room Old Library 135
SPSS/PC+ v4.0
Ami-Pro for Windows
Nota Bene
DBase IV
PageMaker v4.0
Harvard Graphics for DOS v3.0
Freelance Graphics
Framework
Lotus 1-2-3
Electronic "Oxford Dictionary"

For more details, please contact the undersigned.

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HKUWIN for Windows 95 supported on the Campus Network environment

Since early 1995, the Computer Centre has been providing HKUWIN for Windows 3.1 to aid our users in using the Network- PCs to gain access to the Internet and the network software and facilities supported by the Centre. This user friendly graphical interface has been very well received by our users because it facilitates easy access to the centrally provided network services, e.g. University Information System (UIS), Netscape for WWW, Eudora for mail, etc. Many users have also enquired when the HKUWIN for Windows 95 will be available. The Computer Centre has been testing various means of integrating the use of Windows 95 with the Novell Netware services on the University Campus Network environment and has been developing convenient procedures for users to upgrade their Windows 3.1 based-PC to use the Windows 95 environment if they so desire. We are now pleased to announce that the Central Network Services of HKUWIN for Windows 95 can now be provided on the University Campus Network.

The Central Network Service provided in HKUWIN for Windows 95 are:

1. Telnet
2. FTP
3. Eudora (window based Email program)
4. NewsXpress (window based News reader)
5. Netscape (WWW browser with Java support)
6. Computer Equipment Maintenance
7. UIS (University Information System)
8. Apply Computer Accounts
9. CWIS (Campus Wide Information Service)
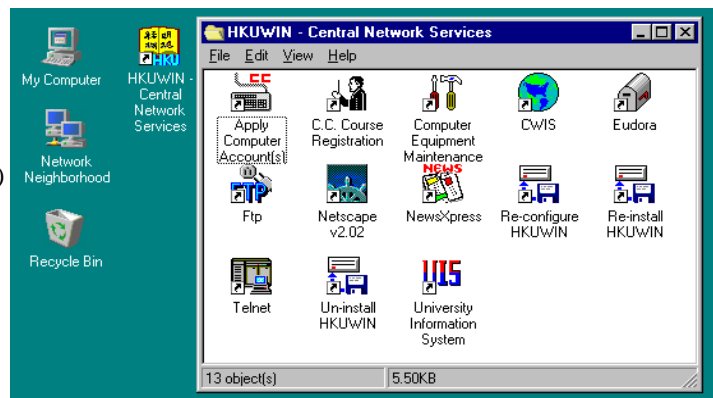
The recommended minimum system requirements for running Windows 95 and HKUWIN for Windows 95 on the University Campus Network are:

1. Hardware:
   i. A networked Pentium PC
   ii. 16M byte of RAM
   iii. 100M byte of free hard disk space (Less powerful configuration may still run the software but poor performance would be expected.)

2. Software:
   i. Windows 95 installation media: CDROM or diskettes

How to get the Installation Guide

Starting from September, 1996, the installation guide "*Installing Windows 95 in the HKU Campus Network Environment*" is obtainable from the Centre's Enquiry Counter in Room RR-223. Electronic version of the guide can be found in the file *w95inst.exe* kept on the ftp server *ftp.hku.hk* under the directory */pub/win95.dir/*. It can also be retrieved through a WWW browser using the URL *ftp:// ftp.hku.hk/win95.dir/w95inst.exe*. The file w95inst.exe is a self-extracting file. By typing **w95inst** at the DOS prompt,

the Microsoft Word document *w95inst.doc* will be generated. Users can then follow the steps described in the installation guide to install *Windows 95* and *HKUWIN for Windows 95.*

Installing HKUWIN on pre-installed with Windows 95 PC

For PCs which have been installed with Windows 95 and configured with access to the Novell Netware services on the University Campus Network already, HKUWIN can be installed by running the command **'f:\win95app\install\hinstall'**.

If there are any questions on the installation procedures for *Windows 95* or *HKUWIN for Windows 95*, please contact the undersigned.

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PC Laboratory Facility Upgrade

We are pleased to announce the following hardware and software upgrade of the PC facilities in Rooms RR-101, RR-103, KB-218 and OLB-134 and OLB-135 :

1. 1 MB Video RAM and 256-color SVGA display driver for all PCs

Since certain older PCs in the Centre were equipped with SVGA cards with only 512 KB of video Ram, they could only support 16-colour SVGA display output. To allow these older PCs to work with the HKUWIN interface in the Centre's PC laboratories, all PCs in the laboratories, including the newer ones, were previously configured to run with the 16-colour VGA display output. With this "low colour resolution" display, the quality of the colour pictures displayed is quite unacceptable. To improve the situation, we have upgraded all display cards to have 1MB of video RAM.

Users can now enjoy the much improved color quality of display output in web surfing and in using other software in the PC Laboratories.

2. Electronic Dictionary for PC Laboratories

The electronic dictionary "Oxford Dictionary" has recently been installed on HKUWIN of the PC Laboratories in Room OLB-134 and OLB-135.

To use the electronic dictionary, users can first choose the menu item "HKUWIN (English version)" from HKUMENU. When Windows 3.1 is started up, the user can find the program group "Oxford Dictionary" with the icon "Oxford Dictionary". The user can then double click on the icon to start up the Oxford Dictionary window from which the user can type in the word and then press the "Enter" key to find its meaning in both English and Chinese. Certain words will be explained with pictures too. If a multimedia PC in Room OLB-135 is being used, the user can even hear the pronunciation of the word when clicking on the appropriate button. (The user has to bring his own earphone in order to use the audio facility of the multimedia PCs in Room OLB-135.)

Since the number of licenses for running the electronic dictionary is limited, users are requested to close the Dictionary window after its use as soon as possible so as to allow other users to have a chance to use the electronic dictionary.

For futher information, please contact the undersigned.

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New version of HKUPPP Installation Package for Windows 95

Since the HKUPPP package for Windows 95 has been released, we have received a number of feedback for improvements of the package. We are pleased to announce that a new version of the package is now available. This enhanced package can either be downloaded from the ftp.hku.hk server obtained from the Centre's General Office (Room RR-223) at a nominal cost of $20.

The new package no longer requires the original Windows 95 installation diskettes or CDROM during the installation. In addition, a list of FAQ (Frequently Asked Questions) has been added at the end of the updated installation guide.

The new HKUPPP for Windows 95 package and updated installation guide are kept under the directory /pub/ppp.dir/win95 in the Centre's ftp server ftp.hku.hk. (If your package already does not require the orginal Windows 95 installation diskettes or CD Rom during the installation, you need not ftp this again.)

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Staff News

New Staff: We are pleased to welcome Mr Chu Man Hang, Tommy and Mr Ho Ka Fai who joined the Centre in early August and September 1996 respectively. Mr Chu was graduated from the University of Hong Kong B. Eng. Degree (Computer Engineering) in 1995 whereas Mr Ho received his Bachelor degree in Computer Science from The Chinese University of Hong Kong in 1995. Both of them are now working in the financial application development projects.

Staff departure: Ms Flora Chan Pui San, Computer Officer, left the Centre in August 1996. We wish her every success in her new venture.

Training News

For the new academic year, we are pleased to announced a series of seminars and workshops to assist our users in using the facilities and services available in the Computer Centre. Some of the seminars and workshops are introductory level for novice users while others are advanced topics for experienced users.

Most of the seminars and workshops are open to all staff and students. For course Cxxxxxxx, C0611796, C0212996, C0213096, C0213196 priority will be given to staff and postgraduate students. Interested users can apply for attending the courses by completing and returning the attached Registration From to the Centre or by filling the electronic "Computer Course Registration" form found on electronic HKUWIN.

Course No. C0311896   Introduction to Unix

This is a 2 1/2 hours of introductory course for users with no or little Unix experience. The course will covers the Unix environment in the University, the Unix file system, the editor, electronic communication and other hints to better use the Unix facilities.

Course No. C0411996   Introduction to PC Network Services

This is a 2-hour introductory course which covers the use of various facilities and services available from the Centre's PC Laboratory. This includes how to login the PCs, use of the facilities available on HKUWIN and HKUMENU such as Telnet, FTP, WWW browsing, News reading, laser printing, dialup access, etc.

Course No. C0210296   Seminar on SAS

The SAS package is an integrated system of software for data analysis. In this 2-hour seminar, users will learn how to create a SAS data set, to retrieve data from the data set and to perform some commonly used statistical procedures. Users are expected to have some statistics background.

Course No. C0210496   Seminar on SPSS

This is a 2-hour seminar for users with some statistics background. Users will learn how to read the input data as well as to perform some simple statistical analysis.

Course No. C0113496   Introduction to Fortran 90 on IBM 9076 SP2 system

This is an introductory course on Fortran 90 programming. It will be conducted in two 3-hour sessions. This course provides an introduction to the structure and syntax of the Fortran 90 language. Demonstration of use of IBM Fortran 90 compiler and debugger will also be provided. Having taken the course, the user can write Fortran 90 programs with array syntax. Users can also write reusable and readable code using data encapulation feature of Fortran 90.

Course No. C0611796   Setting up Information on World Wide Web (WWW) Server

This is a 2-hour seminar for users who would potentially be information providers on the World Wide Web (WWW). The course will cover a brief introduction to the WWW, the steps of using a WWW browser to make connection to WWW and the procedure of preparing hypertext materials to be posted on the Centre's WWW server.

Course No. C0212996   Table, Frames & Clickable Map on the Web

This is a 4-hour seminar on the discussion of the more sophisticated techniques in putting up information on the Web.

The following topics will be covered :

- Tables: overview and techniques
- Frames: overview and techniques
- Clickable map: overview and techniques
- Authoring tools
- Hands-on exercises

Course No. C0213096   WWW Common Gateway Interface

This is a 3-hour seminar for users who have experience in developing a Web page and have knowledge of a programming language. The Common Gateway Interface changes the Web from a simple collection of hypermedia documents to a whole new interactive medium, in which users can enquire for information and run applications. CGI is not a programming language in itself, but is the standard mechanism by which Web browsers interact with programs running on the Web server. Using CGI, a programmer, or webmaster, can dynamically generate information on the Web.

This course is aimed at programmers who are getting started with CGI. The basics of CGI will be discussed and its applications will be illustrated.

Course No. C0213196   Introduction to Javascript

This is a 3-hour seminar on Javascript. JavaScript is a new scripting language embedded in web pages. With JavaScript, a web page can be designed to respond to user-initiated events such as form input and mouse clicks.

Course No. C0113596   SP2 Parallel Operating Environment

This is a 3-hour seminar for both prospective and existing users of the HKUSP2 Supercomputer. It begins with an overview of the University's IBM 9076 SP2 Supercomputer including its architecture and configuration. It then covers the various available tools for development of parallel programs, e.g. compilation, message passing libraries, engineering and scientific libraries, profiling as well as job submission. The use of other parallel application packages, e.g. gamess, gaussian 94, is also mentioned. Demonstrations will be provided.

Course No. C0113696   SP2 Parallel Programming with workshop

This is a 4-hour seminar and workshop for user of the IBM 9076 SP2 Supercomputer. It covers the methodology of writing parallel programs using the message passing library MPI and use of available debugging tools. Sample programs will be given to users for hand-on.

Course No.	Title	Date/Time	Venue
C0311896	Introduction to Unix	October 4, 1996 (Friday) 2:00 p.m. - 5:00 p.m.	Chong Yuet Ming Building, P2
C0411996	Introduction to PC Network Services	October 11, 1996 (Friday) 2:00 p.m. - 5:00 p.m.	Chong Yuet Ming Building, P2
C0210296	Seminar on SAS	October 15, 1996 (Tuesday) 2:30 p.m. - 4:30 p.m.	Old Library Building, first floor, LBO-136

Course	Title	Date/Time	Venue
C0210496	Seminar on SPSS	October 17, 1996 (Thursday) 2:30 p.m. - 4:30 p.m.	Old Library Building, first floor, LBO-136
C0113496	Introduction to Fortran 90 On IBM 9076 SP2 system	October 7, 1996 (Monday)/ October 14, 1996 (Monday) 2:00 p.m. - 5:00 p.m.	Old Library Building, first floor, LBO-136
C0611796	Setting up Information on World Wide Web (WWW) Server	September 25, 1996 (Wednesday) 9:00 a.m. - 12:00 p.m.	Run Run Shaw Building, first floor, RR-101
C0212996	Table, Frames & Clickable Map on the Web	September 27, 1996 (Friday) 2:00 p.m. - 5:00 p.m.	Old Library Building, first floor, LBO-135
C0213096	WWW Common Gateway Interface	October 1, 1996 (Tuesday) 2:00 p.m. - 5:00 p.m.	Old Library Building, first floor, LBO-135
C0213196	Introduction to Javascript	October 4, 1996 (Friday) 2:00 p.m. - 5:00 p.m.	Old Library Building, first floor, LBO-135
C0113596	SP2 Parallel Operating Environment	October 25, 1996 (Friday) 9:30 a.m. - 12:30 p.m.	Old Library Building, first floor, LBO-136
C0113696	SP2 Parallel Programming with workshop	November 1, 1996 (Friday) 9:00 a.m. - 1:00 p.m.	Old Library Building, first floor, LBO-136

Training Course Registration Form

To :   Computer Centre, The University of Hong Kong

I wish to attend the following seminar(s)/workshop(s) which is indicated by a tick.

[ ]   C0311896   [ ]   C0411996   [ ]   C0210296   [ ]   C0210496
[ ]   C0611796   [ ]   C0212996   [ ]   C0213096   [ ]   C0213196
[ ]   C0113496   [ ]   C0113596   [ ]   C0113696

Name : _____   Title : (Prof/Dr/Miss/Mr/Mrs)*

Staff/Student No : _____   Date : _____

E-mail Address : _____   Tel : _____

Department : _____

* Please circle as appropriate