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Description of Contents:

FINAL REPORT FOR TRAINING "Sun Unix and Basic Administration"

Project No. and Title:

Proj. No.: US/GLO/92/017
**"Strengthening UNIDO's Capability for Initiation & Operation of an Advisory
Service & Info Network for Enviromentally Sound Applicaitons of Biotechnology"**

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Final Report for

Training "Sun Unix and Basic Administration"

for Operating System "SunOS 4.1.x"

also called "Solaris 1.x"

1.) Introduction

The training took place from 1 February 1995 to 10 February 1995 every working day from 9:00am until 1:00pm.

Since usually this training is a four day course this report will resemble this four part structure.

The participants of this first level training have learned to understand Unix filesystems, how to activate and deactivate individual user permissions, how to use basic unix commands and have received insights into networking services.

2.) Course Protocol:

Equipment:

- 1 SPARCstation 10 from UNIDO with SunOS 4.1.3
connected to the inhouse Token Ring net and also to Internet
- 1 SPARCstation Classic from Bacher Systems with SunOS 4.1.4
- 1 Mac whit local ethernet with TCP/IP Software (MacTCP)
- 1 Mini-HUB and TP Cables - to connect all other three parts together

1. Day:

In order to get knowledge of the actual situation of this department, it was necessary to inspect the current working enviroment:

.) Networking situation:

- Routing
- Name service (DNS)
- File transfer
- PC connection
- Mail service

.) User enviroment:

- Login scripts
- Mail setting
- Used Tools and utilities

.) Other system settings:

- Openwindows

The main system is connected to the the inhouse Tokenring network. It was necessary to connect the MAC via MacTCP software to the local Ethernet. This was not successfull, because the routings in the VIC are not all consistent.

The first lesson dealt with the structure of the filesystem and how file permission influences the work of

- a) the superuser
- b) the "normal" user

The session was continued with details about commands used to change permissions and owners in the filesystem.

2.Day:

The lesson started with the explanation of commands for copying files or directories and commands for removing files or whole directorie trees.

The next step was to look more closely into the directory tree of Sun's operation system SunOS 4.1.x (x=1..4)

Finding files in the filesystem with "find" command (dealing also with "name", "owner" and "size" of a file) continued this lesson.

how to integrate a new hard disk drive (HDD) into the filesystem and how to utilize this HDD successfully, using the disk administration commands:

- .) Hardware pre-requisites for connecting a SCSI Disk to a Sun
- .) Labeling
- .) Partitioning
- .) Creating a new filesystem
- .) Mounting it to a new directory

After having acquired knowledge about the Sun filesystem, it was possible to compare it's structure with other important filesystems:

- .) PCFS - DOS Filesystem
- .) HSFS - CDROM Filesystem

The lesson was closed with an exercise on how to put data from a DOS floppy diskette to SunOS:

- .) Mounting diskette
- .) copying data to other directories

3.Day:

The lesson started with detailed information on user Administration:

What happens during adding a user ?

Which elements are needed for a user:

- .) Username
- .) User ID
- .) Group ID
- .) Password
- .) Home directory
- .) Shell

The lesson was continued with information on working with shells:

- .) What is a shell,
- .) Different versions of shells: csh / sh
- .) advantages/disadvantages of the possible shells.
- .) Commands and environment of a shell
- .) Environment settings
- .) customizing your login shell
- .) Using "alias" and wildcards

The third lesson ended with information about links:

Why are links needed?

Difference Hardlink / Symbolic link.

4.Day:

The lesson started with the discussion of backup, with the specific explanation of the TAR and DUMP command:

Tar: Backup for user's data, whole directory trees

Dump: command for backup up the whole system disks.
Possibility of doing incremental Backups.

Restore: Opposite command of "Dump" . Doing individual selected files restoring.

The lesson was continued with the discussion of different backup algorithms and the participants learned how to write a script for doing daily backup at a predefined time.

The last part of the training was devoted to the ethernet. It was dicussed how the interface of the SPARCstation 10 has to be configured to enable file transfer from the MAC to the Sun and in the opposite direction.

Due to adress specification routing to the internet was not possible.
Troubleshooting was dicussed accordingly.

3.) Final Situation

The participants are now able to perform the daily administrative tasks on operating System " Sun Solaris 1.x" . This includes:

- .) Adding user, passwords and permissions
- .) customizing user environments
- .) Providing different files and directories for different users
- .) Doing file transfer and logins to and from foreign systems.
- .) Backing up the whole system and restoring individual files
- .) Mounting diskettes, Harddisks, CDROMs
- .) Knowing many commands and tools for monitoring this OS
- .) Finding out why are some network connections are not working
(DNS, Routing)
- .) Finding a file in the filesystem