DESY Computing Newsletter
No. 8 March 1996

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DESY Computing Newsletter No. 8

Editorial

by Michael Behrens

Nine months have passed since the previous issue of the DESY Computing Newsletter. We had stopped our activities 6 month in 1995 because we could not find the time to produce a new issue. During this time we were always asked for new issues of the Newsletter. Now we are back in the business, willing to achieve the original goal of a quarterly newsletter. We have improved the efficiency of the editing and production process and you are reading just now the very first issue that was produced within schedule.

The central computing facilities at DESY are constantly changing. Currently the HP - Cluster, one of the earlier central Unix systems at DESY is being closed down completely. This task has started slowly quite some time ago. Now we have gained speed and the final closure date is determined to be June 30, 1996. Details have in part been announced in netnews and at various other occasions; a more up-to-date version of the shutdown plan is printed in this Newsletter.

The hardware of the HP Cluster will reappear in new clothes. The machines will be converted into Workgroup Servers for various groups under the AFS file system.

More new systems and platforms are supported by central computing, including NICE for PCs on the desktop, and WindowsNT is yet another operating system that might become important within DESY. You will find an article about WindowsNT in this Newsletter.

When things are changing, not everything will work perfectly from the beginning. In this situation information becomes even more important. Several steps to improve this situation have been taken. This newsletter is part of the information transfer; the first article about problem reporting - a reprint of previous announcements - is another step in this direction. Another article announces how you could learn about the available application software.

On the web you will find a growing repository of information and tools. You will find announcements, information, tools and more if you follow the links to < *Computer Center* > and < *Information Services* > from the DESY homepage. Here you find an interface to the announcements in desy.computing as well

Announcement will in general be made via netnews in *desy.computing* for general announcements and in other specialized newsgroup for more specialized topics.

User Hearings will take place twice per year, the first one will be in March. See the announcement in this Newsletter.

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This DCN is also available on the web as `http://www.desy.de/dcn/dcn8.ps`

Getting Help with Problems and Malfunctions in Central Computing

by Michael Behrens

Recently, the procedures for contacting the Computer Center in case of problems, malfunctions of pieces of equipment, etc., have been straightened out and clarified. The aim was to offer our user community procedures which do not depend on the presence of certain specialists and are available (almost) at all times on every day. After some initial problems, we now cover the full period from 7:00 to 23:00 hours on all days of the week.

In the case of malfunctions or other problems you can address one of the following:

- Central Problem Reception
- Problem Report via E-mail
- UCO (User Consulting Office)

Central Problem Reception

The telephone number 3818 can be reached daily from 7 a.m. until 11 p.m. You can use this number to report your problems or ask about any unexpected interruptions. Your problems will be passed on to the responsible person(s).

Problem Reports via E-mail

The Computer Center provides a number of e-mail service addresses which you can use for various types of problems. Please specify the following as precisely as possible in your e-mail:

- your problem
- the affected equipment or applications
- how you can be reached for further questions

You will find the current list of email addresses at the end of this article or on the web (with a direct mail interface): `http://www.desy.de/UCO/problems.html`

UCO

If you need advice or consultation, please turn to the UCO (User Consulting Office). During the opening times, users of the DESY Computer Center and it's services can address any questions or problems to the UCO, either personally or via telephone. The UCO is located in the user area of the Computer Center, in room 129, building 2b.

Currently the UCO opening times are:

Mon. - Thu. 14:00 - 16:30, Fri. 9:30 - 12:00

During the opening times the UCO can be reached under the telephone number 2510. The UCO also has an e-mail address for user questions: uco@desy.de

Currently the following e-mail address are available:	
x-terminal.service@desy.de	*for problems with X-terminals*
ibm-terminal.service@desy.de	*for problems with IBM terminals*
terminal.service@desy.de	*for all other terminal problems*
print.service@desy.de	*for problems with printers*
noc@desy.de	*for network problems*
osm.service@desy.de	*for problems with OSM*
oracle.service@desy.de	*for problems with Oracle*
desy.service@desy.de	*for all other problems not mentioned above*

Invitation to the 1^{st} User Hearing

by Michael Behrens

In order to improve the possibilities for users of DESY's central computing to address their problems and wishes to the Computer Center, as well as to generally improve communication between users and the Computer Center, the institution of a user hearing was re-invented.

What is the User Hearing

The user hearing will be an open forum for all users of central computing. Everybody is welcome to bring forward his or her problems and wishes on this occasion. We will then publicize what happened at this meeting and will make a subsequent announcement as to what actions were taken in response to the user requests.

Invitation

The first User Hearing will take place on

Monday, 25 March 1996, 16:00 to 18:00
Seminar room 2 in building Lab 2a

Topics to be discussed at this hearing will be collected during the meeting. It is also possible to bring forward topics and problems in advance. You can send them to the UCO - preferably by email - at any time before the meeting.

Transforming the HP-Cluster into Work Group Servers

by Michael Behrens

As announced earlier, the HP-cluster in it's current form is being dissolved and the machines are being transformed into so-called work group servers[1]. The groups M and ZEUS have already moved from the HP-cluster and into the new scheme, while H1 is currently leaving the cluster. Now the remaining groups will have to move within the next months and no new users are admitted to the HP-cluster.

The Computer Center plans to have the transformation completed by

June 30^{th}, 1996

During this process, machines will be removed from the cluster one by one. This means that in order to empty machines prior to removal, users will be moved to other machines as needed. This has no effect on the working environment and will be done without prior announcement.

An overview of the migration plan is outlined below. Please direct all questions in this context to the UCO.

What Will Happen to the Machines in the HP-Cluster?

"Public" machines - All users of these machines will have to leave the HP-cluster during the next months. The Computer Center will remove the machines from the cluster one by one and re-install them as work group servers. In this manner, work group servers for the groups Theory, Hasylab, and for the general public will be created. The first machines should be available by mid-March. Work group servers for M and the H1 and ZEUS experiment are already in operation since last year.

[1] See also the article about the Work Group Server Concept in DCN 7.

CAD-machines - In future, the CAD-machines will be managed by the CAD group. Two machines (ips117, ips118), together with the users on these machines, will move into the W domain as hpw12 and hpw13; the machine ips119 will follow later.

"Private" machines - Several of the HP-cluster machines are owned by the groups H1, HEGRA, and the II. Institute. The private H1 machines will become work group servers for H1. The detailed schedule for the users of these 2 machines (ips110, ips111) is under discussion. The private HEGRA machines will be transformed into work group servers for HEGRA. The machine of the II. Institute will become a work group server in the common pool.

Timetable for the Main User Groups on HP

ZEUS - All but a few remaining accounts have left the cluster already. These remaining accounts will be removed without further announcement on the 30^{th} of June, 1996.

H1 - All users have to leave the HP cluster before the 1^{st} of April, 1996. H1 has given us a list of users who have to stay beyond this date. These remaining accounts will be removed without further announcement on June 30^{th}, 1996.

Hermes - All users should leave the HP cluster before the 1^{st} of April, 1996. Those who need their account for a longer time must make a request before this date, via Hermes or directly in the UCO.

Hasylab - The Computer Center will provide a work group server for HASYLAB users. Users have to get an account there and move their data afterwards. This should start after March 15^{th}. On May 1^{st}, the move should be completed. More details will be announced in March when the new system is ready.

Theory - The Computer Center will provide work group servers for theory users. Users have to get an account there and move their data afterwards. The first two work group servers should be available after March 15^{th} and users can start moving to the new system from then on. On May 1^{st}, the move should be completed. More details will be announced in March when the new system is ready. Finally the Theory group will have four workgroup servers.

HERAB/ARGUS - Users have to move to their new machine, HERA-B. Details will be announced soon.

Private H1 machines - 2 machines in the cluster are owned by H1/Kiel and H1/Wuppertal. Both these machines will become work group servers for H1. The transition for these 2 machines will start in April. Details will be arranged with the users of these 2 machines.

II. Institute - The II. Institute owns one of the machines in the cluster. This machine will become part of the "public" workgroup servers created from the former HP cluster. The users of this machine will have to move in April and May; details will be arranged with the II. Institute.

All others - Many of these users have an account on other systems as well, e.g. on x4u, and have kept their HP account for historical reasons. Those users may copy their valuable files to this other account, remove the remaining files on the HP, and wait until their account is removed automatically by the computer center. Please start these actions as soon as possible; this will make our work easier.

For everybody else, the computer center will provide a set of work group servers. Users can get an account there, once this is set up and move their files to this account. As the replacement machine for these users is not ready yet, we will make a detailed announcement when the time comes.

What do You Have to Do ?

- If you are going to work on a work group server in future: Get an AFS account as soon as work group servers for your group become available (H1: now; Hasylab/Theory: mid-March; II.Institute/general users/"private" machines: April).
- Copy those data that you still need to another account.
- Delete all data afterwards (data will be deleted automatically when your account is removed from the HP-cluster; backups will survive for another 90 days).
- If you used to receive mail on the HP: Tell your correspondents about the change of your email address. Once an account is deleted on the HP, we will bounce all incoming mail. On the bounced mail we will try to indicate what we believe is a replacement email address, but this is not guaranteed to work in all cases.

Software Issues

Currently some software can only be used on the HP cluster. The Computer Center will continue to provide this software after the termination of the HP cluster. The following is a list of all the affected programs the Computer Center knows of.

mathematica	Network license is available on all HP, SGI and SUN workgroup servers
mafia	Is currently available on MINTBAT for M users and will become available on the public HP workgroup servers
gds	Will be available on the HP machines served by the CAD group W1 .
ansys	Will be available on the HP machines served by the CAD group W1 .
opera-2d	Will be available on the HP machine mint2 for M users.

Please keep in mind that in any case the HP-cluster will be switched off on June 30^{th}, 1996.

Oracle Database Announcements

by Harald Falkenberg

The Oracle user environment and concept for the central Oracle database (SID=DESY) on x4u2 at DESY will change soon. In this article we provide details of the planned changes and give some additional rules for the usage of the Oracle database.

Quota and Tablespace Limits

At the beginning of March, the Oracle users will get a quota limit on their default tablespace and the use of other tablespaces will be denied. This is partly due to security reasons, but essentially to ensure the availability of the database resources. Each Oracle user can get information about the space used by a table via the following commands:

- analyze and show the space used by a table
  `SQL> analyze table` **table_name** `estimate statistics;`
  `SQL> select * from user_tables where table_name like '`**table_name**`';`
- show quota values
  `SQL> select * from user_ts_quotas;`

The standard values for the user quotas are 10 MB on his default and temporary tablespaces. If it is needed, all Oracle users in a production environment can ask for a higher quota and/or access to other tablespaces.

Public Account "scott"

The public Oracle account "scott" is a possibility for all computer users at DESY to look into an Oracle database and become familiar with it. It is strongly recommended not to save production data in this account. This Oracle account has a very limited quota and is periodically reconfigured to offer all new Oracle users the environment needed for the examples and exercises in the Oracle manuals. There is no backup available for lost data on this account. People who want their own Oracle production environment should ask their group administrators and fill out the required registration form, available from the User Consulting Office.

Server Availability

In general, the Oracle server is available 24 hours a day. Network problems or maintenance on the x4u2 or the Oracle server may disable the access to the Oracle Database occasionally. Therefore it is recommended that Oracle users running database accessing batch jobs provide data buffering facilities to avoid data loss.

Backup Policy

The Oracle database is configured to guaranty a recovery of the Oracle user data in the case of disk loss or other operating system problems. Backups against user errors (accidentally dropped tables, etc) are however not provided. All Oracle user data can be recovered up to the point where the Oracle user **committed** for the last time. Non-committed transactions are lost. Each Oracle user is responsible for his own data and must make his own backups to avoid data loss in the case of usage errors. This can be done via the Oracle export and import utilities. A description of these Oracle tools is available in the User Consulting Office or on the Web (http://www.desy.de/uco/documentation.html).

Oracle on Workgroup Server Machines

Besides the availability of Oracle software on the x4u2 and on those machines which mount the Oracle software from x4u2, you can find it on the AFS work group server machines. Currently installations are provided for SGI, Sun Solaris, and HP UX.

Problem handling

If you have detected any Oracle software problems, please let us know so that we can help you and also improve the Oracle software availability at DESY. Mail your problem, including the error messages, occurrence time and machine name to the mail address `oracle.service@desy.de`.

Introducing the Application Software Web Pages

by Peter K. Schilling

The Application Software Group (ASG) presents important user information primarily in two places: in the newsgroup `desy.computing` and on the World Wide Web.

Users should check `desy.computing` on a regular basis for short announcements of the ASG, which are normally of short-lived nature and frequently point to information on the ASG Web pages.

Users should also visit the ASG Web pages frequently, especially to look at the information about supported products. Starting from the DESY home page, the ASG Web pages may be reached via the links `<Computer Center>` and `<Application Software Group>` (or directly at the URL `http://www.desy.de/asg/asg.html`). These pages are permanently subject to change. Currently we present information about the following topics:

About ASG - Here you may read the "Manifesto" of ASG, i.e. our working guidelines.

News - In this section we present e.g. the results of the "Software Questionnaire".

Products - This is the place where you may find information about current and future "Supported Products" of ASG.

Hints - This section contains useful hints referring to "Supported Products", which should help to avoid common pitfalls.

Members of the ASG - An up to date list of the permanent and associated members of the Application Software Group.

The ASG may be contacted by sending e-mail to `asg@desy.de`.

Schulungskurse Word und Excel

von Michael Behrens

Das Rechenzentrum - User Support Group - bietet in unregelmäßigen Abständen PC - Kurse an. Wir bieten derzeit Einführungskurse in die Textverarbeitung mit **Word** und in die Tabellenkalkulation mit **Excel** an.

Die Kurse finden bei DESY statt mit einem Umfang von ca. 12 Stunden innerhalb einer Woche. Interessenten wenden sich bitte schriftlich an das Sekretariat von -ZDV- unter Angabe ihres Schulungswunsches. Wir werden dann zum nächstmöglichen Termin ein Schulungsangebot machen.

Voraussetzung zur Teilnahme sind einfache Kenntnisse im Umgang mit Windows. Für Interessenten ohne diese Vorkenntnisse bieten wir eine Einführung in den Umgang mit dem PC und Windows an einem Vormittag an. Bitte weisen Sie bei der Anmeldung für WORD und Excel - Kurse darauf hin, wenn Sie eine solche Einführung benötigen.

Kurse für Fortgeschrittene und Kurse für andere als die oben angeführten Produkte können wir derzeit nicht selbst anbieten. Solche Kurse müssen bei externen Anbietern gemacht werden. Wir versuchen, Adressen von Anbietern zu sammeln und geben darüber gerne Auskunft. Wir bitten auch um Rückmeldung bei guten und schlechten Erfahrungen mit solchen Kursen. Wenden Sie sich dazu bitte direkt an

Michael Behrens -ZDV-
Tel. 2556
email: Michael.Behrens@desy.de

Beachten Sie bitte auch das Angebot der DESY - Fortbildung, die ebenfalls diverse Angebote im Bereich Datenverarbeitung macht.

Central Backup at DESY

by Hans-Peter Sommer

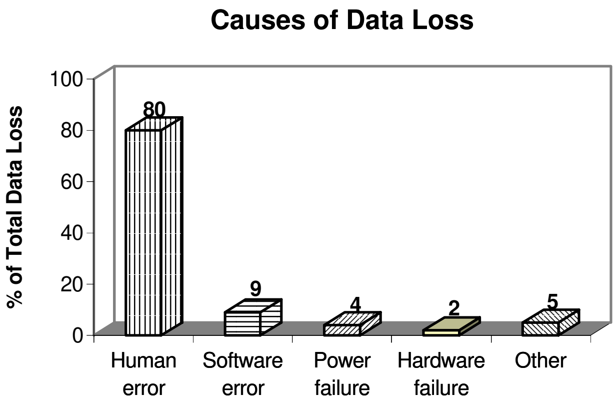
The ADSM Server:

Since 1994, IBM's ADSM (ADSTARs Distributed Storage Manager) has been used at DESY as a central backup system on multiple-user-systems/platforms. It is a pure client/server application, and uses TCP/IP as a communication protocol. Currently 45 ADSM clients are connected to the ADSM MVS-server, "TCPDSM", which runs continuously on the IBM 9221-421, with two exceptions: Saturday evening 20:00 to 23:00 for database on-line dump, and Thursday morning 7:30 to 9:00 for ADSM disk off-line dumps. 6 different Unix and PC platforms are supported.

ADSM clients:

All backup clients should be on-line 24 hours a day and will be backed up automatically during the night. The clients need an Ethernet or FDDI adapter and must be registered with the DESY name server. When the scheduled backup time for a client is reached, the server activates the ADSM scheduler process running permanently on this client. All data is compressed in the client's memory and then stored by the ADSM server into the ACS (Automatic Cartridge System) robot on 3490E cartridges.

Why are Backups Important?



(Data taken from ADSM documentation)

Which DESY Machines are Backed Up?

Currently backups are made for the following multi-user systems:

- dice2 (SGI-IRIX)
- hermes (SGI-IRIX)
- ips*nnn* (HP-UX cluster)
- mint1 (HP-UX work group server)
- x4u2 (SGI-IRIX)
- zarah1 (SGI-IRIX)

Which Files are Backed Up?

Backups are made only for user data (home directories) on multi-user systems, for LAN server user data, for multi-user databases (Oracle, OSM, IDL, ...), for system configurations of multi-user systems, and for other very important clients. File spaces requiring backup should not be greater than 4 GB (preferably max. 2 GB) in order to minimize the time needed for a full file space restore. NO binary experimental data, NO CD-ROM data, etc. and NO simple single user clients will be backed up.

Possible ADSM Client-Platforms:

PC Platforms	Unix Platforms
• Mac OS	• DEC ULTRIX
• Intel x86	• HP HP-UX
• Novell NetWare	• RS6000 AIX
• PS/2 OS/2	• SCO
• Windows	• SGI IRIX
• WinNT	• SunOS

The Backup Policy:

When a file space is backed up for the first time, a full backup of the entire file system is created. After this only incremental backups are made, meaning that only modified and new files are copied.

The normal backup policy for public machines is: incremental backup every work night, i.e. 5 times/week (other backup policies are possible). The server holds up to 10 versions of a backed up file. Removed files are expired from the "ACTIVE" mode during the nightly incremental backup. After file deletion, ADSM retains the last file version 90 days in an "INACTIVE" status. The node administrators should monitor the ADSM scheduler log and the mounts and status of the backup file spaces, as well as ensure the proper operation of the ADSM backup system on their nodes.

A backup filter is active: ADSM ignores e.g. all kinds of /tmp files and all netscape caches with the help of a file filter pattern. If a user or administrator knows of other files or file types which do not need backups, they should ask for an extension of the node backup filter file (only root user access).

Current Status of ADSM at DESY:

425 file spaces	– 600 GB uncompressed space
45 clients	– on 10 different platforms
200 GB ADSM space (total)	– all compressed
5,3 million files	– 38kB/file on Unix platforms
4,0 GB database (80% used)	– 3 IBM 3390 disks (+3 mirror disks)
105 thousand files/night	– 4 GB incremental space/night

Restoring Backups

Every user can start the ADSM X11-GUI application with the **dsmu** command on his specific Unix node in order to restore his own files. Alternatively, the **dsmc** command starts the ADSM command line interface. Online help features are available for both programs. Users should only use the RESTORE feature. Do not initiate your own backups as this is done automatically during the night. The ARCHIVE feature should not be used under the MVS ADSM server, except for tests. User mail files (INBOX) can only be restored by the node administrator.

Further details of the RESTORE feature can be found in the USG/96/07 publication, *Restoring ADSM Backup Files*, which will soon be available in the self-service area of the computer center or from WWW (http://www.desy.de/uco/documentation.html).

What's Coming Next?

- more clients on multi-user systems are welcome (such as: work group servers, LAN servers, ...)
- user-controlled restore for AFS home directories (a special ADSM backup client for AFS is in preparation)
- `USG/96/07` publication: *Restoring ADSM Backup Files*
- WWW page: `http://mufasa.desy.de/adsm`
- a new ADSM server, V2R1 on an AIX RS6000 platform, with FDDI for better network performance

Please send complaints and suggestions to hpsommer@desy.de

Current Mail Setup at DESY and Future Plans

by Jan Hendrik Peters

Electronic mail is a long established way of communication in the scientific area of DESY. With the move of the administration and technical groups into this area (mostly using PC based systems or dedicated work stations) there is an increased need for a more global strategy in the mail area. The reduced importance of the IBM mainframe at DESY will also lead to an ever larger number of people who need mail access on other platforms. In this article and other articles following in the next issues of the DCN, I will try to present some of the strategies that are currently being followed or are being discussed in this area at DESY.

History and Problem Areas

Just a few years ago almost all mails were transported using BITNET. Access to BITNET at

DESY was only available on the IBM and on the central VAX Cluster. With the move to distributed work stations, the Internet became more important and now plays the leading role in message exchange. Consequently, mail exchange using SMTP (the Internet protocol for exchanging mail messages) became the default at DESY, and networks like BITNET are now only accessible via our central mail gateway, vxdesy.

While sending and receiving mail on central systems usually works well, there are some areas were problems show up: workstations around the site are set up by different people and are not always correctly configured for proper mail exchange, which leads to an increased number of undeliverable mails in the mail box of the postmaster on the central gateway. Likewise, PCs and Macintoshes, which are configured by their owners to send and receive mail directly, are quite often switched off and, hence, cannot receive mail during this time. With the introduction of the Work Group Server concept at DESY, based on the network files system AFS, new concepts for receiving mails are needed. Some of the ideas to cope with the above problems are described below.

Many, if not most, people have accounts on more than one system and therefore have to deal with different email addresses. There is no global email address book available at DESY which makes it difficult to locate a specific person's address. Like most of the other laboratories and larger institutions, we are preparing a scheme with which it will be possible to reach anybody at DESY with a unique global address of the form `Firstname.Lastname@desy.de`. Details of this concept and its implementation will be presented in the next DCN.

Configuring Unix Workstations

Every vendor of a Unix workstation provides a different version of the sendmail program with the basic operating system software. For most of the system administrators, the configuration file for sendmail looks frightening and usually this results in an improper configuration, e.g. users on this machine can send but not receive mail, they cannot send faxes by email, cannot reach addresses in BITNET, etc. Since vendor-provided sendmail programs are different from platform to platform and quite often encounter security holes, we suggest that everybody on the site should use the public domain version of sendmail called **Sendmail V8** by Eric Allman, the original author of sendmail. To help administrators setting up their machines, we centrally provide binaries for the sendmail program (currently sendmail 8.7.4) and configuration files which will work in the DESY environment. Currently we provide files for the following operating systems:

SunOS 4.1.3	OSF 3.2
Solaris 2.3	Aix 3.2.5
Solaris 2.4	HP-UX 9.05
Irix 5.3	Ultrix 4.4

If you, as a system administrator of a Unix workstation on the site, would like to change your sendmail version to the recommended one, please contact me under the following email address: `"Jan Hendrik Peters" <petersjh@mail.desy.de>`.

How to Use Mail on the Work Group Servers

The work group servers at DESY provide you with a common setup, which allows you to logon to any server (provided you have an the appropriate account) and still have the same environment. This is achieved by giving you a unique, network-wide home directory in the AFS file system. Likewise, the programs that you execute are also stored in the AFS file tree, which is visible on any of the work group servers. To match this global setup, the mail system needs to be set up differently from other unix systems. All work group servers will be treated in the same manner and will be configured as client-only machines. As a mail relay for outgoing messages and as a mail repository for incoming messages, DESY provides a central mail server. The following sections describe the consequences for incoming and outgoing mails and how to get access to your mails in this environment.

Outgoing Mail

The individual work group servers will be configured as client-only machines. Therefore the work group servers do not have any knowledge about mail addresses but will forward all mails to the central mail server machine called **mail.desy.de**. This is the machine that has all the required knowledge to determine whether any given email address is correct and how to further proceed with the message. The mail server, furthermore, knows all users registered on the work group servers and has access to their home directories. This means that every user is reachable on any of the work group servers with one unique address: *userid***@mail.desy.de**. Since the work group servers will not be able to receive mail themselves all outgoing messages will carry the address *youruserid***@mail.desy.de**. Thus any reply to the message you send will be sent back to the central mail server.

Incoming Mail

Since the work group servers will be configured as client-only machines they cannot receive any mail message. Hence, all mails sent to any of them will be re-routed to the central mail server, **mail.desy.de**. Replies to messages you sent from any of the work group servers will also automatically be sent to the central mail server.

To access the incoming mail on the mail server you need to use a remote access protocol for mail called IMAP or POP. We currently recommend that you use pine as a mail reader which fully supports IMAP.

How to Configure pine to Work with the Mail Server

In order to see the INBOX on the mail server, you have to change the **inbox-path** in the .pinerc file so that it points to the mail server. Before you follow the steps described below, you should first delete all remaining messages in you current INBOX or save them to one of your folders.

From the main menu select **S** (setup), then **C** (config), and move the cursor to the line **inbox-path**. Type **A** (add) if you see `<No Value Set: using "inbox">` or **C** (change) otherwise, and set the value to: {**mail.desy.de**}**inbox**. After exiting with **E** (exit), the new value is active.

Whenever you access the INBOX on the mail server, the IMAP server (imapd) reads in all the messages that are waiting for you in the queue into memory. The more messages you keep in your INBOX, the slower the startup of pine will be. We therefore recommend that you move all read messages into one of your folders and keep only unread (= new) messages in the INBOX.

Once you have pine running on your work group server, you will be automatically informed of new mail coming in. Later we will provide an xbiff-like tool which can be started locally but queries the remote mail server and does not create the overhead of using pine as a mail check program.

How to set your .forward file correctly

If you want to forward all you mail from all other machines to the mail server, or if you want to receive mail on your preferred mail host which is not a work group server or the mail server, you have to tell the mail program on all other machines to forward incoming mail to this host.

The rules for setting up the forwarding mechanism vary with the operating system, with the file system in use on the machine, and with the version of the mail program. These different procedures are not always easy to remember, but have to be strictly followed, otherwise you do no achieve the desired result and mail might be lost or stored on computers you never logon to. To make thing easier, we provide a command on all operating systems at DESY called **mailfwd** which will do the correct setting of the forwarding address for you (for details see **man mailfwd** (on Unix), or **help mailfwd** (on VMS and on the IBM)):

- to set a forwarding address:
  [host] ~$ **mailfwd** *youruserid@preferred.host*
- to see the current forwarding address:
  [host] ~$ **mailfwd -q**
- if you want to receive the mail on the mailserver:
  [host] ~$ **mailfwd** *youruserid***@mail.desy.de**
- to switch off forwarding:
  [host] ~$ **mailfwd -reset**

If you are working on a computer where your home directory resides in AFS, we strongly suggest that you always have a forwarding address set. This will assure that mail is collected in a central place regardless of which host the mail was sent to. If you are working on any of the work group servers provided by the computer center the forwarding address should point to the central mail server.

WindowsNT at DESY

by Till Poser

Since last autumn a task force from FEE and ZDV has been formed to investigate the feasibility of the powerful desktop operating system WindowsNT. WindowsNT has started to be of interest for a number of DESY groups, since it is a network operating system that combines a secure kernel operating system with the MS Windows Graphics User Interface (GUI). This article will provide a short description of the features of WindowsNT, of the ongoing activity at DESY and the future plans of the DESY WindowsNT group.

Introduction

The use of personal computers on the DESY site has been rapidly increasing in the last years, thereby creating the need for a DESY-wide infrastructure and central services. DESY has adapted NICE, the CERN system for installing and configuring PCs with DOS/Windows 3.1 and Novell Netware, and setting up a common user environment. With the advent of more sophisticated PC operating systems like Windows95 and WindowsNT, the necessity arose to investigate how these would fit into the currently operating network infrastructure and operating setup.

Another reason for the use of WindowsNT at DESY was the reported high stability and reliability of the OS. A lot of sophisticated new applications, like “CAD” and “Office” products, will be developed on WindowsNT first, or even exclusively, so that users wishing to run these applications would have no choice but to install on this OS.

Since about 3 years, WindowsNT has existed on the marketplace and has carved itself a niche as a multi-hardware server platform. With the advent of Version 3.5, when WindowsNT was split up into a “Server” operating system and a “Workstation” operating system, the OS has become attractive as an alternative for corporate-wide solutions.

What is WindowsNT?

To use a lot of promotional vocabulary, WindowsNT is a 32-bit, SMP, multitasking, multithreading, object oriented and secure network operating system. What does that mean?

Like other modern kernel-systems, WindowsNT allows the concurrent execution of many processes, each of which is endowed with its own address space. Each process can contain multiple threads that allow concurrent operations within a process and enable one process to execute on different processors simultaneously. WindowsNT also has full support for multiple processors, up to 32 in one computer.

Unlike its precursors, Windows 3.xx et al., WindowsNT was developed completely from scratch, retaining very little of old legacy development.

WindowsNT allows full access to a virtual memory address space of 2 Gbyte. Despite the similarities in the user interface, WindowsNT is a completely different OS.

One of the more striking features of WindowsNT is the fact that it is object oriented. An object in WNT is a standard mechanism for identifying and using a system resource. Each object is endowed with all the information necessary to create, manipulate and ultimately to remove it. Objects can be exchanged between applications.

WindowsNT has been described as a secure operating system which implies a mandatory login for each and every user. This allows the granting of user privileges and the possibilities for granularised file access. WindowsNT systems are grouped in administrative units called domains.

One of the most important resources of WindowsNT is the built-in integrated networking. The native network protocol NETBIOS runs over diverse transports such as TCP/IP, Novell's IPX/SPX, and NETBEUI. WindowsNT allows peer-to-peer networking, cross mounting of file systems and network based administration of users and machines.

WindowsNT comes in two different "Flavours", WNT Workstation and WNT Server. While the "Workstation" system is streamlined for the end user, the "Server" system incorporates both the Workstation capabilities and various service modules that allow the buildup of a distributed centrally administrated network structure over LANs and WANS.

WindowsNT 3.51 features the Windows 3.x GUI, and WindowsNT 4 will have what is known as Windows95 GUI. It allows the execution of older Windows and DOS software that was programmed to Microsoft standards. All new 32-bit applications are being delivered for both Windows95 and WindowsNT, all Microsoft products feature *intel* and Alpha versions. WindowsNT runs on more than one platform, i.e. *intel*, DEC Alpha, PowerPC and MIPS 4000 architectures.

Necessary Considerations

WindowsNT is a true network operating system. Its management functions are based on the network protocol NETBIOS. By default PCs announce their presence through broadcasts on the network and by that means find communication partners. The resultant rapidly growing number of broadcasts can lead to serious bottlenecks and can cripple communications in a routed network such as DESY's. To prevent such a contingency, WindowsNT features a NETBIOS nameserver (a so called WINS server) that uses the routed protocol TCP/IP as underlying transport, which is the preferred network protocol at DESY.

To resolve a name, the requesting client accesses that nameserver directly by its IP-number and receives the IP-number of the machine it tries to access. Broadcasting activity is thus reduced to a minimum. In the course of investigations it became clear quickly that the operation of a WINS server is mandatory for an institution like DESY.

The basic unit of security and centralized administration in WindowsNT is the **domain**. A domain is a group of servers and user workstations that, in some ways, function as a single system. All WindowsNT installations in a domain use the same set of user accounts that are stored and maintained centrally. Users that have been set up in a domain are free to use all offered services, like printers, file services etc., according to the usage policies laid down by the domain administrators. User activity can be monitored and full accounting is possible.

Domains can be arranged in hierarchical structures through the means of "trust-relationships", allowing logical and security separation of groups of machines but facilitating central management and central accounting of a DESY-wide structure. The work necessary to administer different domains and different setups can thus be reduced considerably.

An important feature of WindowsNT is the possibility the have non-machine bound accounts for domain users. This allows any user with a domain account to log into any WindowsNT machine within the domain and be presented with his normal working environment, regardless of the machine he is working on. Indeed, users can be allowed to log into one but not the other machine, can be barred from using attached devices (such as a floppy), or can be prevented from accessing the data of other legitimate users as a security feature.

DESY Infrastructure and Services

As a first step, the DESY WindowsNT Group has investigated the impact of WindowsNT on the network. As outlined above, it was found that the use of a WINS server is necessary in the DESY environment. The DESY WindowsNT Group has therefore set up a WINS server, which will serve as NETBIOS nameserver for all of DESY. This central WINS server and its backup are located in the computing center. The WINS database replication also runs over WANs and thus allows to place one partner WINS server at DESY-Zeuthen, thereby directly merging the Hamburg and Zeuthen namespaces. The WINS service runs over IP, making it mandatory for every WindowsNT installation on DESY site that is expected to connect to the LAN to run TCP/IP as the protocol for the network browser services. At the time of writing, the DESY WindowsNT Group is investigating certain browser problems that occur when using the Netware Client functionality via IPX/SPX.

The next step of the WindowsNT Group will be to provide the following services and infrastructure:

- Creation of a Master Domain, retaining the possibility to create and use subdomains at a later time.
- Installation of a Primary Domain Controller that will also be used as a file and application server. The requisite hardware is expected to arrive soon.
- Definition and creation of a group structure with user groups, user profiles and group administrators.
- The definition and creation of home directories for all users registered in the central domain.
- The creation of a print server to access most DESY printers via WindowsNT.
- The investigation of a backup concept for the user data on the central file server.

Future Developments and Projects

The WindowsNT Group will be investigating a system management tool, SMS, that allows central management of installed systems and program packages, as well as direct user support via a help desk mechanism. Direct user support becomes so much more feasible.

Another avenue to explore will be true multiuser support. While this option is not available under native WindowsNT, there are a number of third party software products that allow multiple users on one WindowsNT host. Some products allow the login to a host from an X-terminal, allowing casual users to get use of "Office" products, while not cluttering up their desk with yet another piece of hardware.

Further Information

The draft document "WindowsNT bei DESY, Voraussetzungen für DESY Installationen" is available in postscript on WWW

`http://www.desy.de/nt/rules.ps`

To contact the DESY WindowsNT Group, just send a EMAIL to:

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For the purpose of informing interested people about ongoing developments and to exchange knowledge, a WindowsNT user meeting is held regularly every 6-8 weeks at DESY in German. For exact dates, contact the WindowsNT Group.

User Support Group Publications

Document №	Title	Current Version
USG/93/01	Reference Card for the *vi* Editor on Falcos and X-terminals	June 28, 1993
USG/93/02	Pico - a very Simple Editor on Unix	June 21, 1993
USG/93/03	How to use the Previewer *xdvi* and *ghostview*	June 29, 1993
USG/93/04	The UCO Diskette Copying Facility	February 19, 1996
USG/93/05	X-Terminal *Choosers*	November 23, 1994
USG/93/06	Introduction to *NCSA Mosaic*	December 14, 1993
USG/93/07	*Emacs* Mini-Reference Card	August 4, 1993
USG/93/08	Introduction to *Unix* at DESY	August 5, 1994
USG/93/09	How to Send a FAX Using Email from any Computer at DESY	June 22, 1995
USG/93/10	Remote Login Without a DESY Computer Account	October 22, 1993
USG/93/11	Compiling *FORTRAN* and *C* Programs on *Unix* Machines	December 14, 1993
USG/94/01	Basic Introduction to SQL*PLUS	September 5, 1994
USG/94/02	Das DESY-Rechenzentrum/The DESY Computer Center	November 18, 1994
USG/94/03	How to Include PostScript and Encapsulated PostScript into LaTeX	September 5, 1994
USG/94/04	Emacs Commands for NEWLIB Users	August 16, 1994
USG/94/05	How to use X-Terminals	August 18, 1994
USG/95/01	Introduction to Lynx	April 27, 1995
USG/95/02	Introduction to LOADLEVELER	August 10, 1995
USG/95/03	emacs and vi Commands for VM/XEDIT Users	August 24, 1995
USG/96/01	Mail on the Work Group Servers	March 1, 1996
USG/96/02	Using LaTeX with emacs	*in preparation*
USG/96/03	Introduction to SQL*LOADER	*in preparation*
USG/96/04	The Oracle Export/Import Utilities	*in preparation*
USG/96/05	Using the Scanner	*in preparation*
USG/96/06	How to use the Public CD and Tape Drives	*in preparation*
USG/96/07	Restoring ADSM Backup Files	*in preparation*
USG/96/08	AFS Basics	*in preparation*

These publications are available in the self-service area of the computer center and from WWW under the URL `http://www.desy.de/uco/documentation.html`