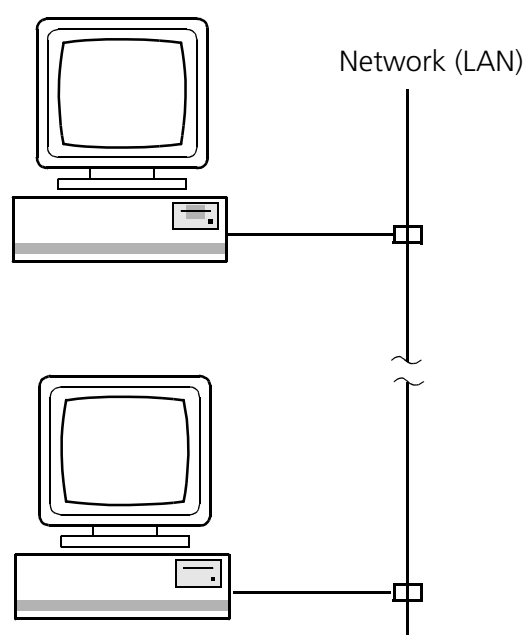


# UMESS

## **Option 13 Data backup in a network for UNIX and LINUX**



## **Operating instructions**



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# Preface

This manual describes the function, operation and application possibilities of the **UMESS Option 13** measuring program.

It is here assumed that the user is familiar with the coordinate measuring machine and the **UMESS** basic software. Please keep all printed materials delivered with the measuring machine ready to hand at all times.

All rights pertaining to changes in the measuring machine version, scope of delivery, the software packages and the pertaining documentation reserved.

## Principles in this operating manual

Before starting to work with this manual, the user has to familiarize himself with the applied principles.

In the following, you will find information on the used font types, signs and symbols.

### Typographic principles

The font types and font schemes used in this manual have the following meaning:

- **bold face**
  - Dialog element on the screen  
Example: "... the button **<TERMIN>**"
  - Term  
Example: "During calculation the location of a **measuring element** in relation to a **reference element** is determined."
  - File and directory names  
Example: **/home/zeiss/UB**
- *italic*
  - Highlighted text of which the contents are very important  
Example: "Click with the *right* mouse button ..."
  - Cross reference  
Example: "..., see also ► *"Signs and symbols" on page -4*"

- **Courier bold face**

Text in dialog windows and records

## Signs and symbols

Special signs and symbols are used in this manual.

### Symbols for warnings and information



#### **Danger!**

In this case, special care is called for. The warning triangle indicates risk of injury. Non-observance of this warning may cause personal injury.



#### **Note!**

This symbol warns against situations which may lead to loss of data, measuring errors, errors in the measuring run, collisions or damage to the machine and workpiece.



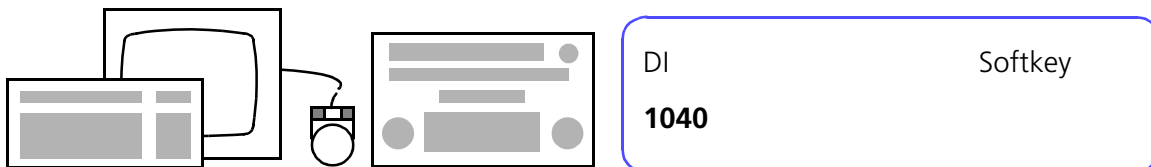
The **Note** symbol is shown next to important text and helpful additional information.

### Symbol for function call

There are several possibilities:

- Direct input by means of the DI number
- Function selection by means of the pull-down menu
- Selection by means of icons

Example:



### Symbol for softkey

Reference to softkeys in dialogs.

# Overview of chapters

This manual describes the function, operation and application possibilities of the UMESS Opt. 13 measuring program.

The following subjects are described:

- *chapter 1 "General" on page 1-1<Default Pa>*
- *chapter 2 "Calling the data backup" on page 2-1<Default Pa>*
- *chapter 3 "Operation" on page 3-1<Default Pa>*
- *chapter 4 "Restoring a data backup manually" on page 4-1<Default Pa>*



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# Chapter



## General

---

### **This chapter contains:**

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## General

The data backup of CZ-Utilities supports DAT-Drives, optical disks (MO). HP's **FBACKUP** format has been selected as the data backup format. This format offers the following advantages:

- Support of all the devices mentioned above.
- Relatively simple operation when using LAN for the data backup.
- Support of a selective data backup by specifying directories and files which are to be included/excluded.
- Selected data can be restored.
- The original attributes of files and directories are restored when they are reloaded.

The following tables offer an overview of the devices and formats supported.

## Devices and formats which are supported during the data backup

The data backup can take place locally on all devices supported. When making a backup via LAN, the optical disk (MO) and the floppy disk cannot be used. When making a backup to cartridge tape, an input/output from or to tape is forwarded by the TCIO command.

Data backup	DAT, /dev/dat	Optical disk, (MO/dev/rdsk/mo)
Local	● FBACKUP	● FBACKUP
Remote (via LAN)	● FBACKUP	-

● completely supported – not supported

## Devices which are supported when restoring data

### Restore

Restore	DAT DAT, /dev/dat		Optical disk (MO) /dev/rdisk/mo
	saved locally	saved (via LAN)	saved locally
Local	●	●	●
Remote (via LAN)	●	●	—

When restoring data to the local system, all devices are completely supported. An unrestricted restore via LAN is only possible via DAT. Optical disk (MO) is not supported.

# Chapter

# 2

## Calling the data backup

Always start the tools as one of the following users: root, kd1 or ut16.  
The data back up tools can be called in different ways.

- Calling from the CZ Utilities:

First start the CZ Utilities. Select the item **CZ UTILITIES--CZ-DATASAVE** in the main menu. You will then be in the data backup menu.

- Direct call of the data backup menu via the root menu:

Select in the **Root menu** first the menu item **CZ Menu**, then the item **CZ UTILITIES--CZ--DATASAVE**.

You obtain the root menu by clicking a free spot on the screen background).

- Direct call of the data backup menu under CZ terminal  
**/opt/zeiss/tool/cz\_datsich**

- Direct call for creating a data backup  
(**save\_cz-userdada**):  
(see also: ► *"Backup of CZ-Userdata" on page 3-4*)  
**/opt/zeiss/tool/cz\_save save**

- Direct call for restoring CZ user data:  
(see also: ► *"Restoring a data backup" on page 3-11*)  
**/opt/zeiss/tool/cz\_save restore**

- Direct call for creating a full backup:  
(see also: ► *"Creating a complete data backup (Fullbackup)" on page 3-14*)  
**/opt/zeiss/tool/cz\_backup**

### NOTE

We recommend you terminate all active UMESS sessions before a data backup. It is then possible to save all files. The data backup is also faster!

# Chapter 3

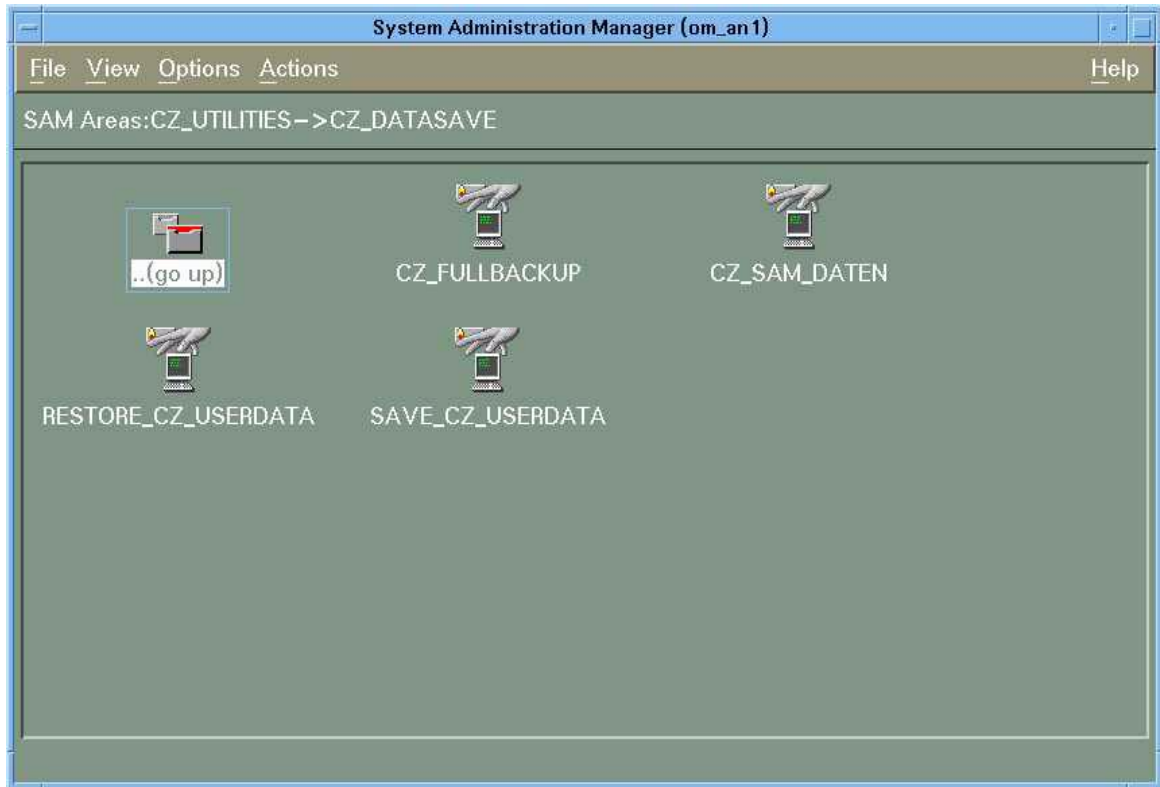
## Operation

---

### **This chapter contains:**

Backup of CZ-Userdata .....	3-4
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Creating a complete data backup (Fullbackup) .....	3-14

After calling CZ Utilities you are in **SAM Areas**. Select **CZ\_Utilities** and then **CZ\_Datasave**



### Selection

- 1 You only save user data. User data is data which occurs during UMESS operation (e.g. CNC programs, ...).
- 2 You create a complete backup of your system (i.e. operating system, UMESS and user data).
- 3 You restore data saved either completely or selectively (individual files or directories).
- 4 Call of the tools for SAM ASCII backup.

**End**

You end the data backup tool with this function key.



After confirmation of input 1 the window CZ User data appears with input of the data backup medium.

\*\*\*\*\*  
\*\*  
\*\* CZ-Utilities 8.3 - Data backup \*\*  
\*\*  
\*\*\*\*\*

Input: Data backup medium  
  
1 DAT (DDS)  
  
Selection: 1  
  
Specify the computer from which the fullbackup is to take place  
  
Name of local system: om\_an1  
  
Name of computer om\_an1

Back	End	Select back	Select next	CZ-Utilities	Help			

After this the window for input of the computer will appear.  
Confirm with **<YES>**.

## Backup of CZ-Userdata

Using this menu item, data can be saved selectively; i.e. not all data is saved (see Full backup); but only data which is constantly changed.  
The data which is saved is defined in the **opt/zeiss/tool/cz\_save.list**

```

Enter the name of the computer from which the data should be backed up.

Name of computer om_anl

List of data to be saved being created ..o.k.

Do you want to check the list or print it (y/n): y
i /var/opt/zeiss/SSB
i /home/zeiss/U1
i /home/zeiss/UB
i /home/zeiss/UC
i /home/zeiss/UE
i /home/zeiss/UF
i /home/zeiss/UG
i /home/zeiss/UI
i /home/zeiss/UL
i /home/zeiss/UM
i /home/zeiss/UO
i /home/zeiss/UP
i /home/zeiss/UR
i /home/zeiss/UT
i /var/opt/zeiss/ASCII/K1
i /var/opt/zeiss/ASCII/K2
i /var/opt/zeiss/ASCII/K3
i /var/opt/zeiss/ASCII/K4
i /var/opt/zeiss/AUTO
i /home/zeiss/CAA
i /home/zeiss/UC/MODSYSSTAT_10B
i /home/zeiss/UC/MODSYSSTAT_20B
i /home/zeiss/UT/PRGDEF_____S
i /home/zeiss/UE/UMESS_1000
i /home/zeiss/UE/UMESS_300
i /home/zeiss/UE/UMESS_36

Do you want the text to be printed (y/n) n
Do you want to modify the list (y/n) n
  
```

	YES	NO		CZ-Utilities				

This list is created during the installation as shown in the figure, but can be adapted to the user's requirements using the vi editor. An adaptation is however not usually necessary!

### NOTE

A user data backup should be made once a week. We also recommend you make a backup of the CZ user data if you have carried out extensive CNC programming.

## Input of the backup medium

The data backup media available are offered in another menu (Fig.).

<pre> ***** **                                     ** **   CZ-Utilities 8.3 - Data backup   ** **                                     ** *****  Input: Data backup medium  1      DAT (DDS) 2      Optical disk (MO)  Selection: _ </pre>								
Back	End			CZ-UTILITIES	Help			

### SELECT

- 1 You save the data on a DAT drive connected locally (60 m: 1,2 GB/DAT; 90 m: 2 GB/DAT).
- 2 You save your data on optical disk (MO) (300MB / side).

### NOTE

A data backup via LAN on optical disk (MO) is not supported.

Input of the computer name

Once you have determined the backup medium, you are prompted for the computer name of the system from which the data is to be saved (Fig.). Here the name of the local system is always given as default. You can confirm this name by pressing the return key or by means of **select.next** (F4) and **selec.back** (F3) keys, to determine the computer desired and then confirm with return.

\*\*\*\*\*  
\*\*  
\*\* CZ-Utilities 8.3 - Data backup \*\*  
\*\*  
\*\*\*\*\*

Enter the name of the computer from which the data is to be saved

Name of local system: system\_70

Name of computer: system\_70

		Select back	Select next	CZ Utilities				

SELECT BACK

SELECT NEXT

With these function keys you can page backwards and forwards in the list of computer names available. With **Return** you accept the computer name displayed.

If you are carrying out a data backup via LAN for the first time from the computer specified, you are requested for the **password of the superuser** on this computer. This is required to prepare the computer for the data backup via LAN.

## Outputting / editing the list of data to be saved

The list `/opt/zeiss/tool/cz_save.list` (Wildcards) is now edited and converted to a list with complete path names without wildcards. The list edited in this way is used as input list for the backup command. The list is displayed if desired and can be printed out or edited later.

```

*****
**                                     **
**   CZ-Utilities 8.3 - Data backup   **
**                                     **
*****

Enter the name of the computer from which the data is to be saved

Name of local system: system 70

Name of computer: system 70

List of data to be saved being created ... o.k.

Do you want to check the list or print it (y/n): n

```

	YES	NO		CZ-Utilities				

**NO**

The list of data to be saved is accepted unchanged and is not printed out.

**YES**

If you want to look at, print or change the list of the data to be saved then select **<y>**.

### NOTE

You do not have to change the list of data to be saved later!

If you want to edit the list of data to be saved, this is loaded to the vi editor of the operating system. The f1 to f8 function keys are assigned special commands which are frequently used. When confirming with **<Yes>** appears

```

i:/opt/zeiss/SSB
i:/home/zeiss/U1
i:/home/zeiss/UB
i:/home/zeiss/UC
i:/home/zeiss/UE
i:/home/zeiss/UG
i:/home/zeiss/UI
i:/home/zeiss/UO
i:/home/zeiss/UP
i:/home/zeiss/UR
i:/home/zeiss/UT
i:/home/zeiss/ASCII/K1
i:/home/zeiss/ASCII/K2
i:/home/zeiss/ASCII/K3
i:/home/zeiss/ASCII/K4
i:/var/zeiss/AUTO
i:/home/zeiss/CAA
e:/home/zeiss/CZ_MES_UT/PRGDEF_____S
~
~
~
~
~
~
~
~
~
"/tmp/cz_backup_list" 18 lines, 444 characters

```

Backup	End	Find	Find rep.	CZ-Utilities	Line delete	Charact. delete	Line insert	Cancel
--------	-----	------	--------------	--------------	----------------	--------------------	----------------	--------

Start of data backup

You are now prompted to insert the backup medium in the corresponding drive (Fig.). Insert the medium and wait until the busy lamp on the drive goes out. Only then start the data backup by pressing the Return key.

NOTE

Only start the data backup when the busy lamp on the drive has gone out (DAT or MO).

```
*****
**                                     **
**      CZ-Utilities 8.3 - Data backup (CZ User Data)      **
**                                     **
*****

Data being prepared.....o.k.

Data backup from local system (om_anl).

Medium: DAT Tape (/dev/dat)
Format: FBACKUP

Total size: 13841 kBytes

Please insert a DAT tape.
Wait until the BUSY lamp on the drive has gone out.

Continue with <Return>, cancel with <q>
```

	YES	NO		CZ-Utilities				

RETURN

Wait until the backup medium has been loaded completely. Then start the backup with Return.

Q

Quit

By entering **q (quit)** , the backup can be cancelled here. You then return to the data backup menu (Fig). You may be requested to **insert a new backup medium**, if the amount of data exceeds the storage capacity of the medium (see input of backup medium, Fig.). Follow this prompt and then continue with the data backup by pressing the **Return** key.

## Ending the data backup

A log file is recorded during the data backup. This contains any error messages and warnings which have occurred during the fback program. If files with S bit are not saved as well, the list of files not saved is also included in this logfile. This logfile is displayed at the end of the data backup and can be printed out if desired.

When saving on cartridge tape, the tape is unloaded automatically. Remove the medium and store it in a safe place.

Label the medium corresponding to the following example:

Data backup		
<input checked="" type="checkbox"/> CZ-User data	<input type="checkbox"/> Fullbackup	
Date:	<b>1.1.2000</b>	Name: Depping
Computer name backup data	:	<b>mace 4</b>
Computer name backup medium	:	<b>mace 4</b>
Data backup:	<input checked="" type="checkbox"/> local	<input type="checkbox"/> (via LAN)



## Restoring a data backup

### NOTE

Using this menu item, saved data can be restored to the local system or via the LAN to any other system, either completely or selectively.

- You should not restore a fullbackup (i.e. includes operating system) using these tools.
- If the hard disk is defective, saved data (fullbackup) should be restored manually ► *“Restoring a data backup manually” on page 4-1.*
- Restore the saved data always as root user.

Saved data should generally be restored on the local system and as privileged user (root). Exceptions should only be made if there is no suitable medium available on the local system.

When restoring saved data from cartridge tape via LAN the **root user** has no write authorization for the remote system. In this case, restore the data as kd1 user. Please note that not all the files can be restored (e.g. files with root owner which have no write enable for other users such as **/etc/rc**, **/etc/passwd**, ...).

Input of the backup medium

Select in the menu the medium on which the saved data exists.

\*\*\*\*\*  
\*\*  
\*\* CZ-Utilities 8.3 - Data backup (CZ User Data) \*\*  
\*\*  
\*\*\*\*\*

Input example: Data backup medium  
  
1 DAT (DDS)  
2 Optical disk (MO)  
  
Selection:1

	YES	NO		CZ-Utilities	Help			

Input

- 1-2 Input corresponding to the data backup medium available.
- If the device you require is not available locally, proceed as follows:
- Connect the device required to the local system.
  - If the device cannot be operated locally, (e.g. no port available) carry out the restore on another computer which has the device required available. Restore the data via LAN.

NOTE

Restoring saved data from optical disk (MO) is not possible via LAN.

Changing the computer name

You can restore data to another computer by first answering the query whether the data is to restored with n (**NO**) (Figure). Answer the query whether you want to change the computer name with y (**YES**). Now enter the name of the computer to which the data is to be restored. The selection keys support you.

**NOTE**

Please note that data from optical disk (MO) cannot be restored via LAN.

\*\*\*\*\*  
\*\*  
\*\* CZ-Utilities 8.3 - Data backup \*\*  
\*\*  
\*\*\*\*\*

Enter the name of the computer to which the data is to be restored

Name of local system: system 70

Name of computer: system 70

		Select back	Select next	CZ Utilities				Cancel

SELECT BACK

SELECT NEXT

With these function keys you can page backwards and forwards in the list of computer names available. With **Return** you accept the computer name displayed.

If you are carrying out a data backup via LAN for the first time from the computer specified, you are requested for the **password of the superuser** on this computer. This is required to prepare the computer for the data backup via LAN.

## Creating a complete data backup (Fullbackup)

On principle with a fullbackup *all data* on the computer specified is saved. The only exception is the directory **/tmp**, which is only intended as temporary storage for files.

The procedure for creating a fullbackup corresponds to a greater extent to the backup of CZ user data with the restriction that you *have no influence on the extent of data to be saved*.

➤ *"Input of the backup medium" on page 3-5*

The floppy disk is not offered for the input of the backup medium for a fullbackup as its low storage capacity is not suitable for a fullbackup.

```

*****
**                                     **
**   CZ Utilities 8.3 - Data backup (Fullbackup)   **
**                                     **
*****

Input: Data backup medium

      1      DAT (DDS)

Selection:1

```

Back	End			CZ-Utilities	Help			

### Input

- 1 Locally connected DAT drive, storage capacity 1,2 GB /60 m DAT;  
2 GB/90 m DAT.

➤ *"Input of the computer name" on page 3-6*

If you are carrying out a data backup via LAN for the first time from the computer specified , you are requested for the **password of superusers** on this computer. This is required to prepare the computer for the data backup via LAN.

\*\*\*\*\*  
\*\*  
\*\* CZ-Utilities 8.3 - Data backup (Fullbackup) \*\*  
\*\*  
\*\*\*\*\*

Input: Data backup medium  
  
1 DAT (DDS)  
  
Select: \_  
  
Specify the computer from which the fullbackup is to take place  
  
Name of local system: systm\_70  
  
Name of computer: systm\_70

Back	End	Select back	Select next	CZ-Utilities	Help			

SELECT BACK

SELECT NEXT

With these function keys you can page backwards and forwards in the list of computer names available. With Return you accept the computer name displayed.

➤ “Start of data backup” on page 3-9

```
*****
**          CZ-Utilities 8.3 - Data backup (Fullbackup)          **
**          ****                                                  **
Fullbackup from local system (system_70)

Medium: DAT Tape (/dev/dat)
Format: FBACKUP

Total size: 306088 kBytes

Please insert a DAT tape.
Wait until the BUSY lamp on the drive has gone out.

Continue with <Return>, cancel with <q>
```

				CZ-Utilities				

**RETURN**

Wait until the backup medium has been loaded completely. Then start the backup with return.

**Quit**

**Q**

By entering **q (quit)** , the backup can be cancelled here. You then return to the data backup menu (Fig).

➤ *“Ending the data backup” on page 3-10*

**NOTE**

You should carry out a fullbackup of each machine at least once a month. We also recommend you make a fullbackup after each new installation or after every software update.

# Chapter

# 4

## Restoring a data backup manually

---

### NOTE

Restoring a data backup manually is only possible on the local system!

Restore a data backup if possible using the CZ data backup tools. If this is not possible, or if you have to restore a complete backup, then use the following commands for restoring the data backup:

- 1 Log on as root user:  
**Console login: root [Return]** or  
**su root [Return]** (in the current window)
- 2 Download your computer to the Single User Mode:  
**shutdown 0 [Return]**  
Wait until the **Console Login** appears and log on as **root user**.
- 3 Insert the medium in the corresponding drive and wait until it is completely loaded (busy lamp on drive goes out).
- 4 Start the program **frecover**.

a) when restoring from **DAT**:

You may have to recreate the device file **/dev/dat**. To do this use the mknod command:

**HP 9000 SERIE 300, 400: mknod /dev/dat c 54 0 x 0e0302**

**HP 9000 SERIE 700: mknod /dev/dat c 121 0 x 201306**

**/etc/frecovery -xov -f /dev/dat**

→ complete data backup is restored

**/etc/frecovery -xov -f /dev/dat -i <File> [-i <File> ...]**

→ individual files or directories are restored (see above).

b) When restoring from **optical disc (MO)**:

You may have to recreate the device file **/dev/rdisk/mo**. To do this use the mknod command:

**HP 9000 SERIE 300, 400: mknod /dev/rdisk/mo c 47 0 x 0e0200**

**HP 9000 SERIE 700: mknod /dev/rdisk/mo c 47 0 x 201200**

**/etc/frecovery -xov -f /dev/rdisk/mo**

→ complete data backup is restored

**/etc/frecovery -xov -f /dev/rdisk/mo -i <File> \ [-i <File> ...]**

→ Individual files or directories are restored (see above).



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