

# Data Backup and Restore Component – Design

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1.0, 28.6.2003  
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## Abstract

The Design Specification involves planning and documenting the global features of the SuSE Backup and Restore Component in preparation for the Development phase. This document should provide the programmers with the necessary information to design and write software routines to perform well-defined tasks within the application. The low level internal features (such as flow of control, variable types, error handling, etc.) are left for the Development phase.

# 1 Description

The component consists of these high level subcomponents:

- YaST Data Backup and Restore module,
- 3rd party subcomponents:
  - star, program to create the archive,
  - openssl, program to encrypt the archive,
  - cron, program to run unattended backups.

YaST subcomponent handles configuration and control of backup and restore using 3<sup>rd</sup> party subcomponents.

## 2 Default scenario

The administrator starts YaST Data Backup and Restore module to configure backup or restore.

Once the configuration is complete, the administrator performs backup or restore.

## 3 Interface

The interprocess communication between YaST module and 3<sup>rd</sup> party subcomponents is handled SCR interface of the YaST framework.

## 4 Subcomponents

### 4.1 YaST Data Backup and Restore module

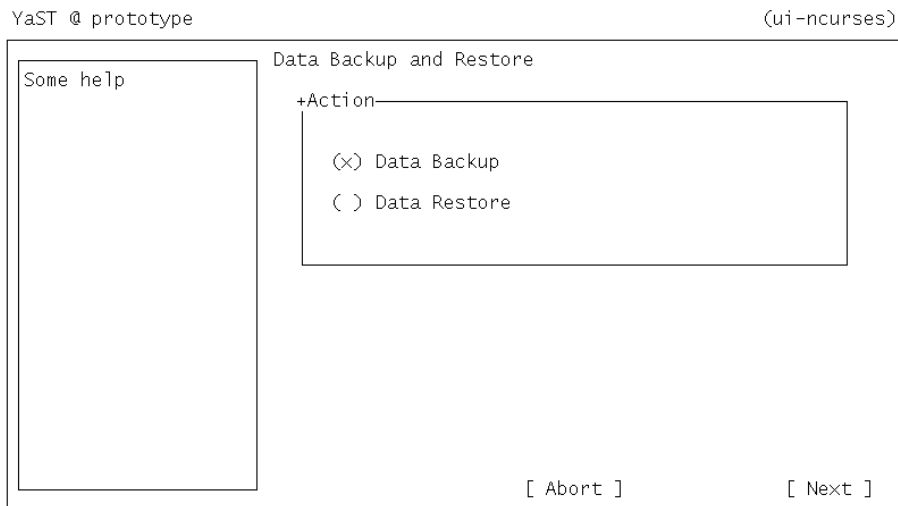
#### 4.1.1 Description

The YaST module is the “frontend” to the 3<sup>rd</sup> party programs configuration and control.

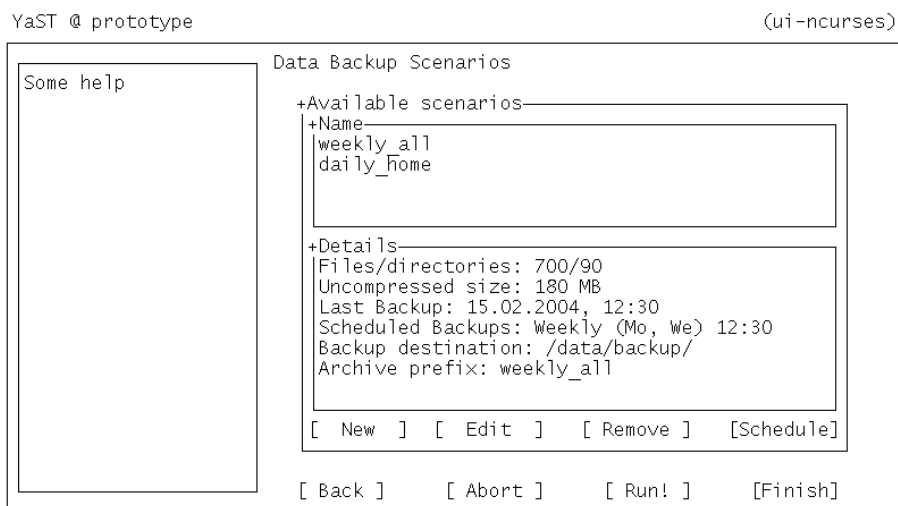
It allows setup of the scenario, i.e. creation of the filelist and properties of the backup and restore.

#### 4.1.2 Default Scenario

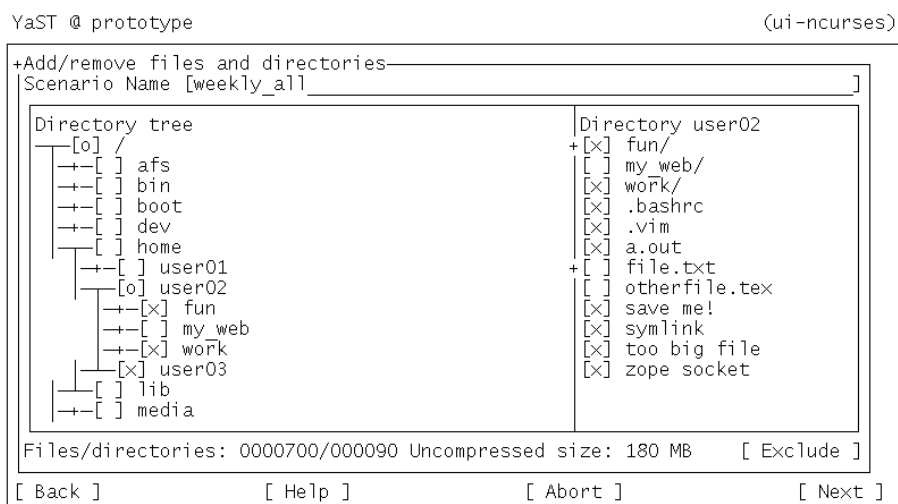
The first step for the administrator is to choose either backup or restore service of the component.



**4.1.2.1 Backup** In case of backup the list of already available backup scenarios is shown allowing the administrator to add new scenario, edit or remove the existing scenarios and finally run them or schedule them to run unattended.



Adding the scenario starts with the name definition, continues with selection of directories and files to backup...



...and finishes with the backup properties configuration.

YaST @ prototype (ui-ncurses)

Some help

General setup

Save backup to  
[/data/backup/\_\_\_\_\_] [ Browse ]

Archive prefix [weekly\_all\_\_\_\_\_]

Archive chunk size [512\_\_\_\_\_] [MB v]

☒ Replace old archive instances

☒ Enable data compression

☐ Enable data encryption

[ Advanced ]

[ Back ]
[ Abort ]
[ Finish ]

Then the administrator returns to the start of the backup process. There the backup can be scheduled...

YaST @ prototype (ui-ncurses)

Some help

Schedule backup

+Periodicity\_\_\_\_\_

( ) Off

( ) Daily Time [\_\_\_\_\_]

(x) Weekly

☒ Mo ☐ Tu ☒ We ☐ Th ☐ Fr

☐ Sa ☐ Su Time [12:30]

( ) Monthly

☐ Jan ☐ Feb ☐ Mar ☐ Apr

☐ May ☐ Jun ☐ Jul ☐ Aug

☐ Sep ☐ Oct ☐ Nov ☐ Dec

Time [\_\_\_\_\_]

[ Back ]
[ Abort ]
[ OK ]

...or run directly.

YaST @ prototype (ui-ncurses)

+Data backup\_\_\_\_\_

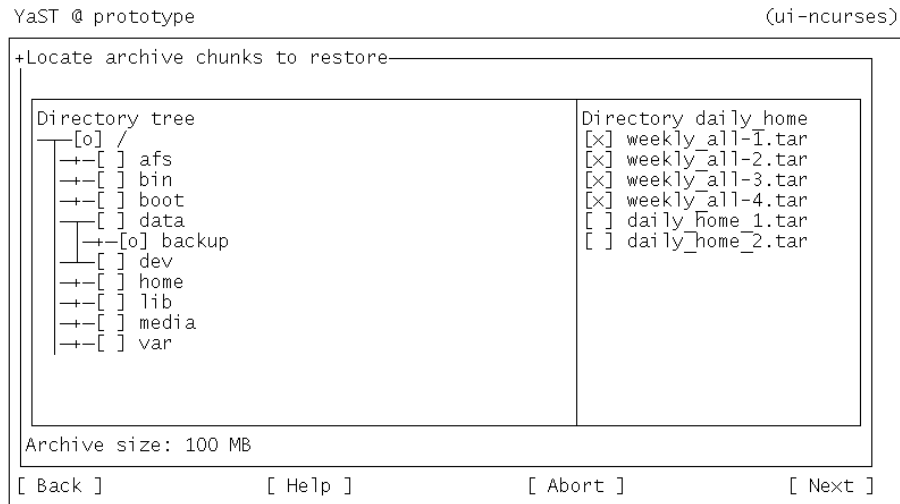
Current chunk: /data/backup/weekly\_all-3.tar

+Progress\_\_\_\_\_

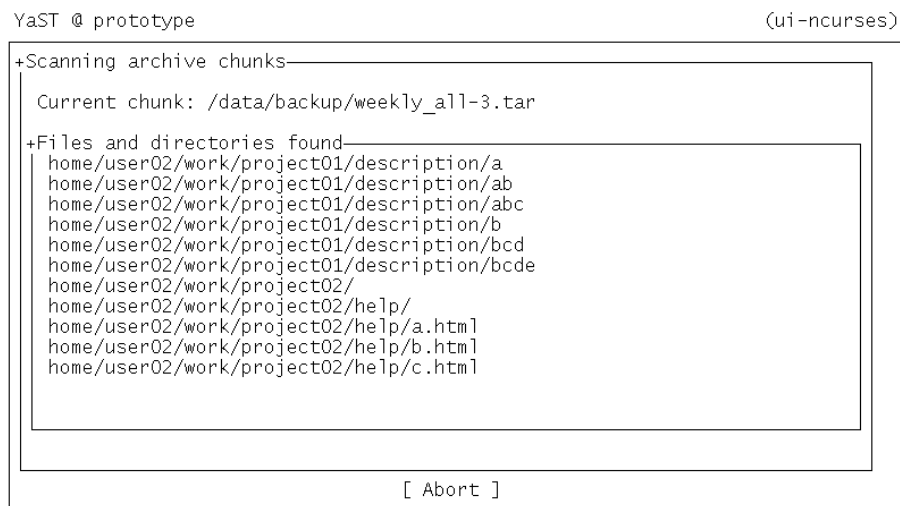
home/user02/work/project01/description/a  
home/user02/work/project01/description/ab  
home/user02/work/project01/description/abc  
home/user02/work/project01/description/b  
home/user02/work/project01/description/bcd  
home/user02/work/project01/description/bcde  
home/user02/work/project02/  
home/user02/work/project02/help/  
home/user02/work/project02/help/a.html  
home/user02/work/project02/help/b.html  
home/user02/work/project02/help/c.html

[ Abort ]

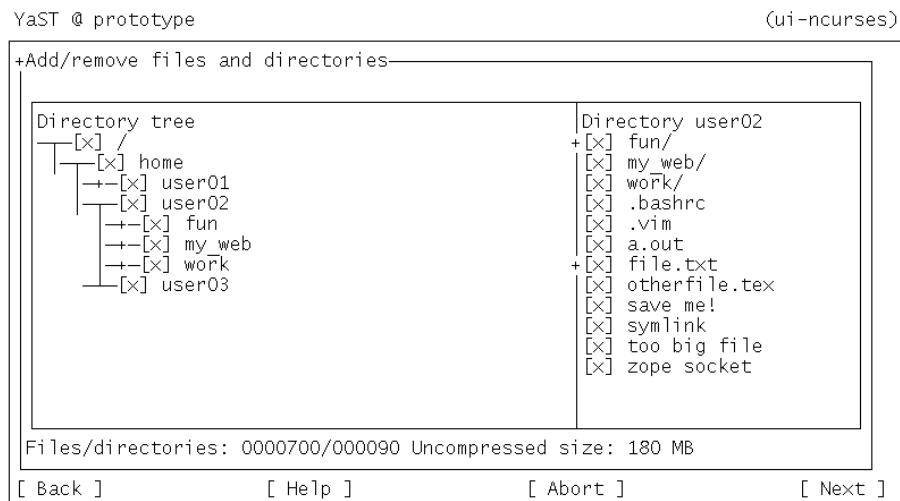
**4.1.2.2 Restore** In case of restore the administrator starts by locating the archive.



Then the list of directories and files is read from the selected archive chunks.



The administrator is presented with the directories and files in a tree view to choose which of them to restore...



...and finishes with the restore properties configuration.

YaST @ prototype (ui-ncurses)

Some help

General setup

Restore data to  
[/tmp/\_\_\_\_\_] [ Browse ]

+Replace files—

☐ Do not replace files

☐ Replace older files

☒ Replace all files

[ Advanced ]

[ Back ]

[ Abort ]

[ Restore! ]

Then the restore is started.

YaST @ prototype (ui-ncurses)

+Data restore—

Current chunk: /data/backup/weekly\_all-3.tar

+Progress—

home/user02/work/project01/description/a  
home/user02/work/project01/description/ab  
home/user02/work/project01/description/abc  
home/user02/work/project01/description/b  
home/user02/work/project01/description/bcd  
home/user02/work/project01/description/bcde  
home/user02/work/project02/  
home/user02/work/project02/help/  
home/user02/work/project02/help/a.html  
home/user02/work/project02/help/b.html  
home/user02/work/project02/help/c.html

[ Abort ]

### 4.1.3 Interface

**4.1.3.1 User interface of backup** Follows the complete list of user interface dialogs for backup:

#### 4.1.3.1.1 yastui\_b02.txt

YaST @ prototype

(ui-ncurses)

Some help

Data Backup Scenarios

+Available scenarios—

+Name—

weekly\_all

daily\_home

+Details—

Files/directories: 700/90

Uncompressed size: 180 MB

Last Backup: 15.02.2004, 12:30

Scheduled Backups: Weekly (Mo, We) 12:30

Backup destination: /data/backup/

Archive prefix: weekly\_all

[ New ]

[ Edit ]

[ Remove ]

[Schedule]

[ Back ]

[ Abort ]

[ Run! ]

[Finish]

#### 4.1.3.1.2 yastui\_b02\_01.txt

YaST @ prototype

(ui-ncurses)

Some help

Schedule backup

+Periodicity—

( ) Off

( ) Daily Time [\_\_\_\_\_]

(x) Weekly

[x] Mo [ ] Tu [x] We [ ] Th [ ] Fr

[ ] Sa [ ] Su Time [12:30]

( ) Monthly

[ ] Jan [ ] Feb [ ] Mar [ ] Apr

[ ] May [ ] Jun [ ] Jul [ ] Aug

[ ] Sep [ ] Oct [ ] Nov [ ] Dec

Time [\_\_\_\_\_]

[ Back ]

[ Abort ]

[ OK ]

#### 4.1.3.1.3 yastui\_b02\_01.01.txt

Confirm

Are you sure you want to  
abort the configuration?  
Current changes will be lost!

[OK]

[Cancel]

#### 4.1.3.1.4 yastui\_b02\_01.02.txt

Notify

Scheduled backups do not  
support encryption  
for security reasons.

[OK]

#### 4.1.3.1.5 yastui\_b02\_02.txt

7

```
YaST @ prototype (ui-ncurses)

+Data backup-----
  Current chunk: /data/backup/weekly_all-3.tar

+Progress-----
  home/user02/work/project01/description/a
  home/user02/work/project01/description/ab
  home/user02/work/project01/description/abc
  home/user02/work/project01/description/b
  home/user02/work/project01/description/bcd
  home/user02/work/project01/description/bcde
  home/user02/work/project02/
  home/user02/work/project02/help/
  home/user02/work/project02/help/a.html
  home/user02/work/project02/help/b.html
  home/user02/work/project02/help/c.html

[ Abort ]
```

#### 4.1.3.1.6 yastui\_b02\_02.01.txt

```
Encryption

Enter the pass phrase to
encrypt the archive:
[*****]
Retype the pass phrase again:
[*****]

[OK] [Cancel]
```

#### 4.1.3.1.7 yastui\_b02\_02.01.01.txt

```
Error

Pass phrases do not match!

[OK]
```

#### 4.1.3.1.8 yastui\_b02\_02.01\_02.txt

```
Notify

No pass phrase. The archive
will not be encrypted.

[OK]
```

#### 4.1.3.1.9 yastui\_b02\_02.02.txt

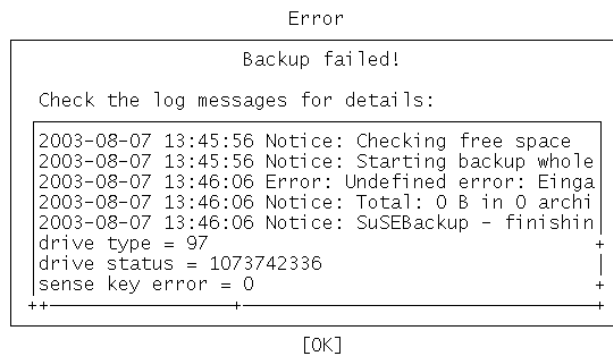
```
Confirm

Are you sure you want to
abort?
The backup is not complete!

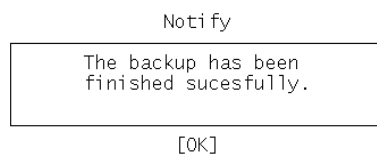
[OK] [Cancel]
```

#### 4.1.3.1.10 yastui\_b02\_02.03.txt

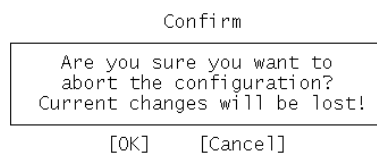




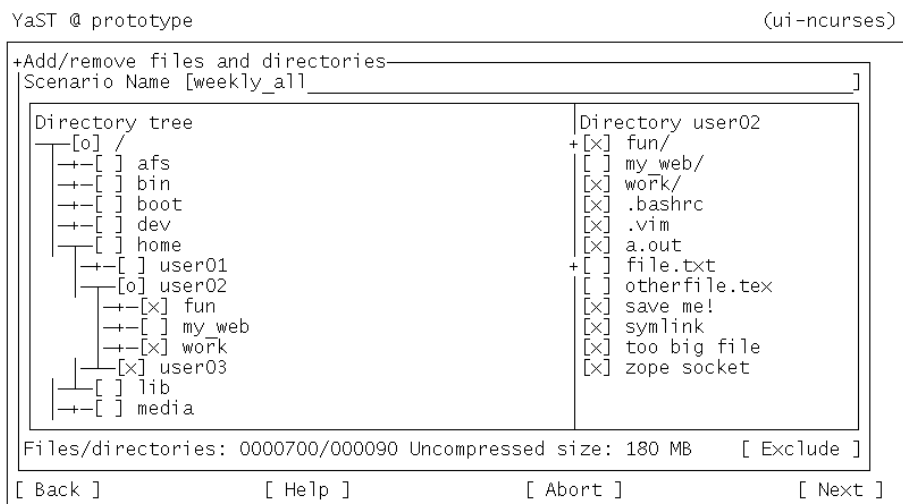
#### 4.1.3.1.11 yastui\_b02\_02.04.txt



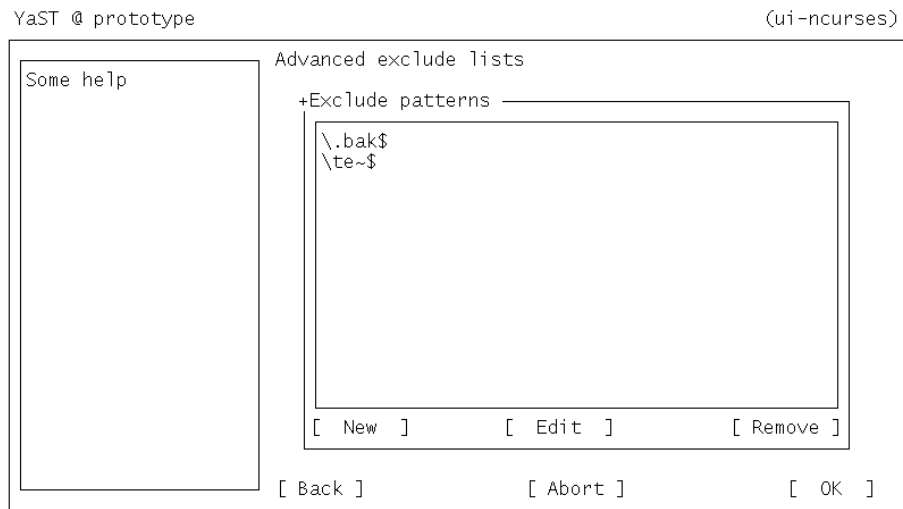
#### 4.1.3.1.12 yastui\_b02\_03.txt



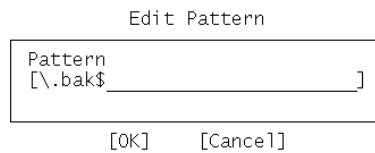
#### 4.1.3.1.13 yastui\_b03.txt



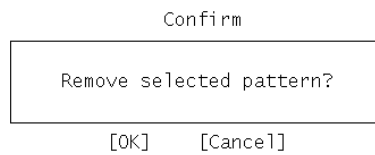
#### 4.1.3.1.14 yastui\_b03\_01.txt



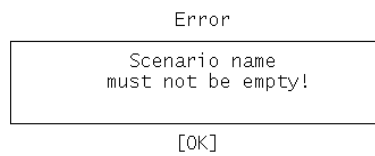
#### 4.1.3.1.15 yastui\_b03\_01\_01.txt



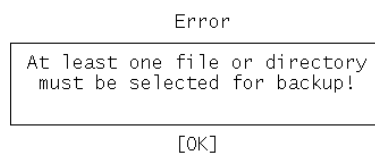
#### 4.1.3.1.16 yastui\_b03\_01\_02.txt



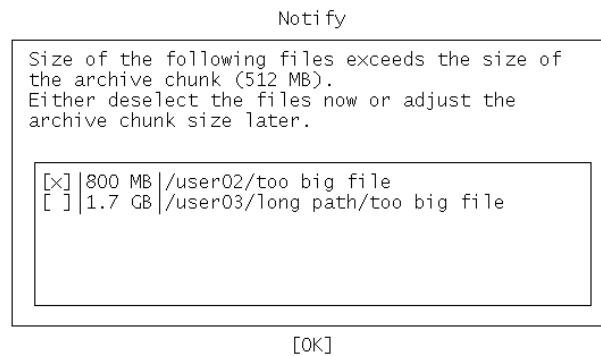
#### 4.1.3.1.17 yastui\_b03\_02.txt



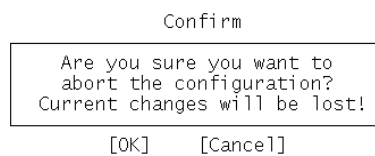
#### 4.1.3.1.18 yastui\_b03\_03.txt



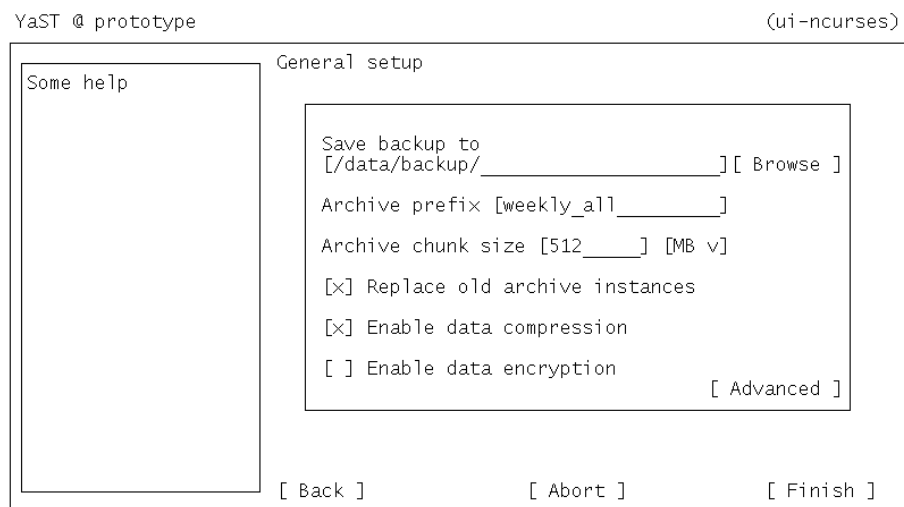
#### 4.1.3.1.19 yastui\_b03\_04.txt



#### 4.1.3.1.20 yastui\_b03\_05.txt



#### 4.1.3.1.21 yastui\_b04.txt



#### 4.1.3.1.22 yastui\_b04\_01.txt

YaST @ prototype (ui-ncurses)

Some help

Advanced setup

☒ Support POSIX ACL
 ☒ Use FIFO
 Backup log [/var/log/databackup.log\_\_\_\_\_]
 ☒ Log all warnings
 IPC Timeout [4\_] [minutes v]
 Temporary directory  
 [/data/backup/\_\_\_\_\_] [ Browse ]

[ Back ]
[ Abort ]
[ OK ]

#### 4.1.3.1.23 yastui\_b04\_01.01.txt

Confirm

Are you sure you want to abort the configuration?  
Current changes will be lost!

[OK]
[Cancel]

#### 4.1.3.1.24 yastui\_b04\_02.txt

Confirm

Are you sure you want to abort the configuration?  
Current changes will be lost!

[OK]
[Cancel]

### 4.1.3.2 User interface of restore Follows the complete list of user interface dialogs for restore:

#### 4.1.3.2.1 yastui\_r02.txt

YaST @ prototype (ui-ncurses)

+Locate archive chunks to restore—

Directory tree

☐ /
 ☒ afs
 ☒ bin
 ☒ boot
 ☐ data
 ☒ backup
 ☐ dev
 ☒ home
 ☒ lib
 ☒ media
 ☒ var

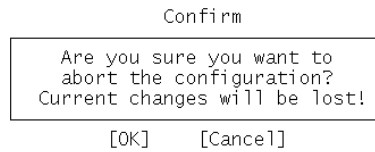
Directory daily home

☒ weekly\_all-1.tar
 ☒ weekly\_all-2.tar
 ☒ weekly\_all-3.tar
 ☒ weekly\_all-4.tar
 ☐ daily\_home\_1.tar
 ☐ daily\_home\_2.tar

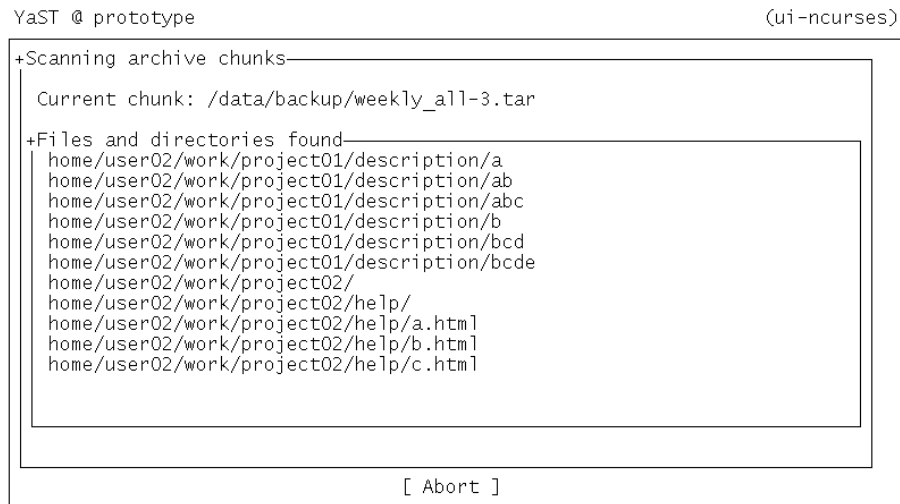
Archive size: 100 MB

[ Back ]
[ Help ]
[ Abort ]
[ Next ]

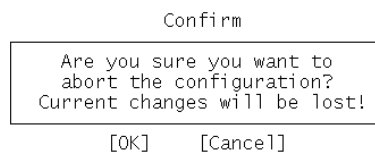
#### 4.1.3.2.2 yastui\_r02\_01.txt



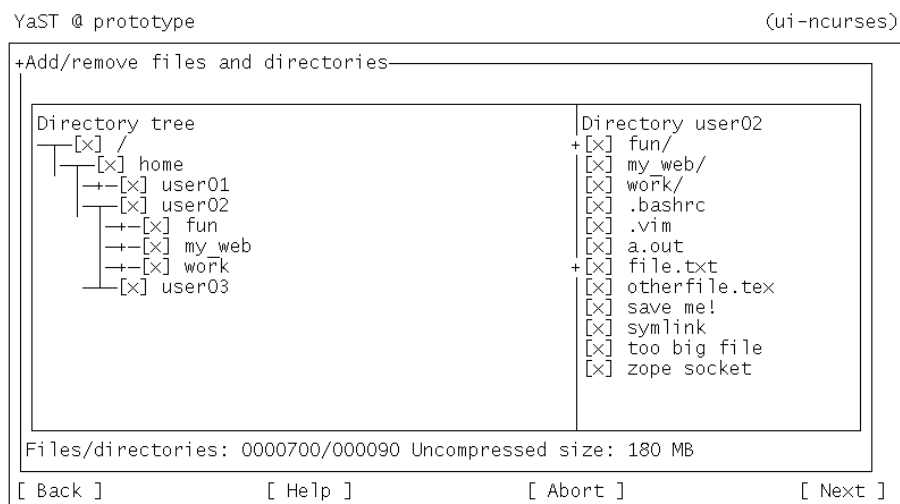
#### 4.1.3.2.3 yastui\_r03.txt



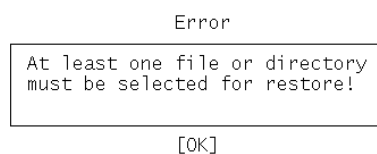
#### 4.1.3.2.4 yastui\_r03\_01.txt



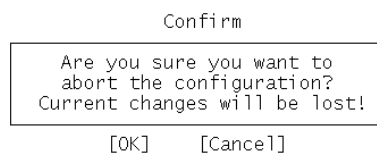
#### 4.1.3.2.5 yastui\_r04.txt



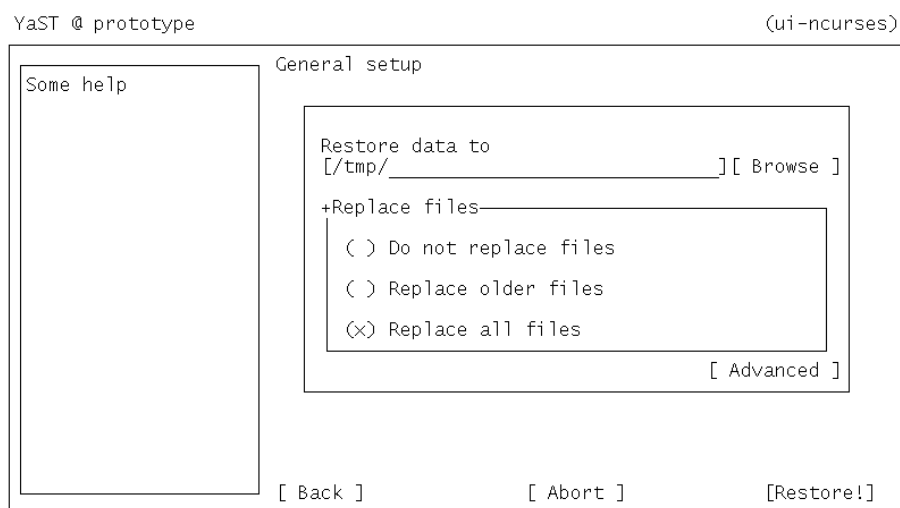
#### 4.1.3.2.6 yastui\_r04\_01.txt



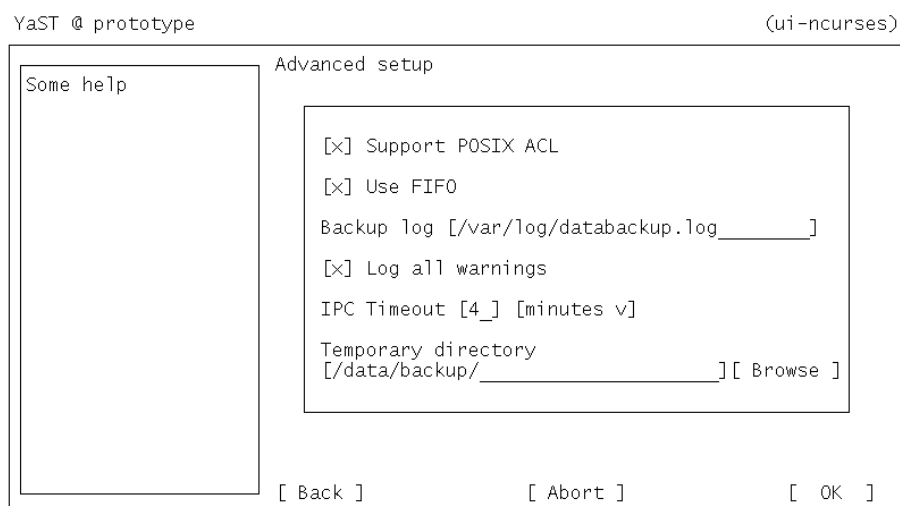
#### 4.1.3.2.7 yastui\_r04\_02.txt



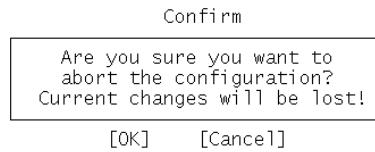
#### 4.1.3.2.8 yastui\_r05.txt



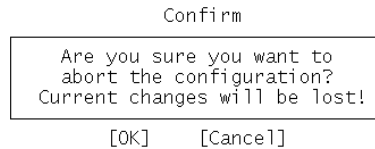
#### 4.1.3.2.9 yastui\_r05\_01.txt



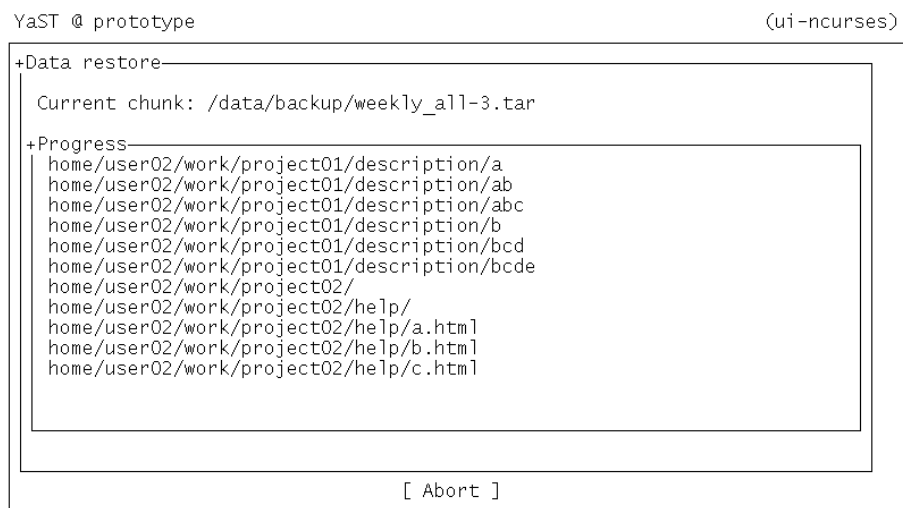
#### 4.1.3.2.10 yastui\_r05\_01\_01.txt



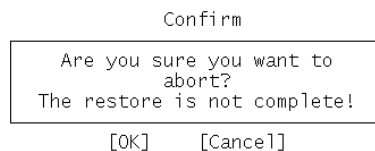
#### 4.1.3.2.11 yastui\_r05\_02.txt



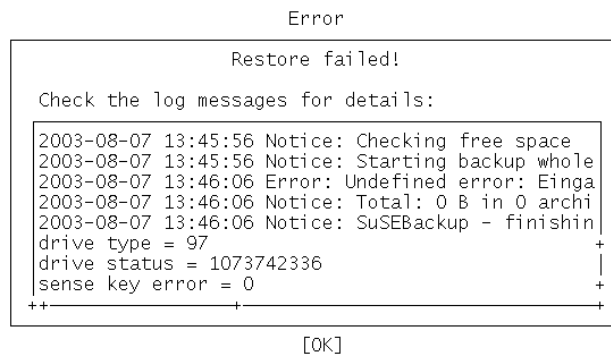
#### 4.1.3.2.12 yastui\_r06.txt



#### 4.1.3.2.13 yastui\_r06\_01.txt



#### 4.1.3.2.14 yastui\_r06\_02.txt



#### 4.1.3.2.15 yastui\_r06\_03.txt



## 4.2 Star

### 4.2.1 Description

Star (Unique Standard Tape Archiver) is an archiving program with POSIX.1-2001 implementation. Supports POSIX ACL, multiple archives, archive – filelist, pattern matching, diff for archives and more.

### 4.2.2 Default Scenario

...

### 4.2.3 Interface

...