Cobra Command Tool a Smart Terminal Emulator User's Guide

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Abstract

When working as a hardware or software designer most of your work is spent in front of your computer using a terminal emulator program. From a terminal window you do a lot of file manipulations (editing, moving, deleting and running) necessary in your daily work. Having a smart way to perform all these operations and many others can save you a lot of time. That's where the Cobra Command Tool comes in handy. This document describes all the functions available in the Cobra program and how you can speed up your work. Welcome to take the tour.

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Contents

1 Introduction

This document describes how to setup and use the Cobra Command Tool, a smart terminal emulator. Cobra can replace an xterm program or any other terminal emulator program and will add a lot of new functionality. The Cobra program is part of the Zoo Design Platform, which contains a number of productivity tools for the ASIC/FPGA designer.

2 Installation

The Cobra program is available for both Linux and Mac OS X. The program can be downloaded from here: **www.zoocad.com/zoo_design_download.html**

2.1 Installing the Linux version

1. Make sure you have the xview libraries installed.
2. Unzip and unpack the downloaded file using the command: tar zxfv file_name into a temporary directory.
3. Copy the executable, the .intro and the .info files to a system directory of your choice.
4. Edit the startup script file and make the changes necessary.
5. Copy the startup script file to the /usr/bin directory or your own bin directory.
6. To start the Cobra program use the command: cobra &

2.1.1 Startup script

Here is an example of a Linux bash startup script to be used to start the Cobra program

```
#!/bin/bash
# Set command to open a pdf file
export OPENPDF=acroread
# Set command to open Web Browser
export OPENHTML=firefox
# Set command to open JPG picture
export OPENJPG=gimp
# Set command to open Open Office
export OPENOFFICE=ooffice
# Set default editor
export DEFAULT_EDITOR=gedit
# Set diff program
export DIFF=diff
# Set path to Cobra User Manuals
```

```
export MANUALS=/home/svenand/root/zoo/documents/cobra
# Set path to help files for Cobra
export HELPPATH=/home/svenand/root/zoo/cobra_9.83
# Set path to Cobra program
export COBRA_HOME=/usr/sbin
# Start the Cobra user interface
exec /home/svenand/root/zoo/cobra_9.83/Cobra.exe $1 $2 $3 $4 $5 $6 $7 -Wp 70 10
```

2.2 Installing the Mac OS X version

1. Double-click on the downloaded file to unzip and unpack the package.
2. Move the package to a directory of your choice (INSTALL_DIR).
3. Edit the startup script file and make the changes necessary.
4. To start the Cobra program double-click the startup script: Cobra.command

2.2.1 Startup script

Here is an example of a MAC OS X bash startup script to be used to start the Cobra program.

```
#!/bin/bash
# Cobra Command Tool startup script
# Edit this file to fit your installation
# Set installation directory. Change to match your installation.
export INSTALL_DIR=/Applications/cobra_9-1.9macosx
# Set command to open a pdf file
export OPENPDF=/Applications/Preview.app
# Set command to open jpg file
export OPENJPG=/Applications/Preview.app
# Set command to open Web Browser
export OPENHTML=/Applications/Firefox.app
# Set command to open Open Office
export OPENOFFICE=/Applications/OpenOffice.org.app
# Set default editor
export DEFAULT_EDITOR=/Applications/TextEdit.app
# Set diff program
export DIFF=diff
# Set path to Cobra User Manuals
export MANUALS=$INSTALL_DIR/document
# Set path to Cobra program
export COBRA_HOME=$INSTALL_DIR/executable
# Set path to shared libraries
```

```
export DYLD_LIBRARY_PATH=$INSTALL_DIR/libraries
# Start the Cobra Command Tool
exec $INSTALL_DIR/executable/CobraMac.exe $1 $2 $3 $4 $5 $6 $7
```

3 Setting Xresources

Xresources and **Xdefaults** are user-level configuration *dotfiles*, typically located at `~/.Xresources` and/or `~/.Xdefaults`. They can be used to set **X resources**, which are configuration parameters for X client applications.

They can do many operations, including:

- defining terminal colours
- configuring terminal preferences
- setting DPI, antialiasing, hinting and other X font settings
- changing the Xcursor theme
- timing xscreensaver
- altering preferences on low-level X applications (xclock (**xorg-xclock**), **xpdf**, **rxvt-unicode**, etc.)

To control the Cobra fonts the following .Xresources file can be used:

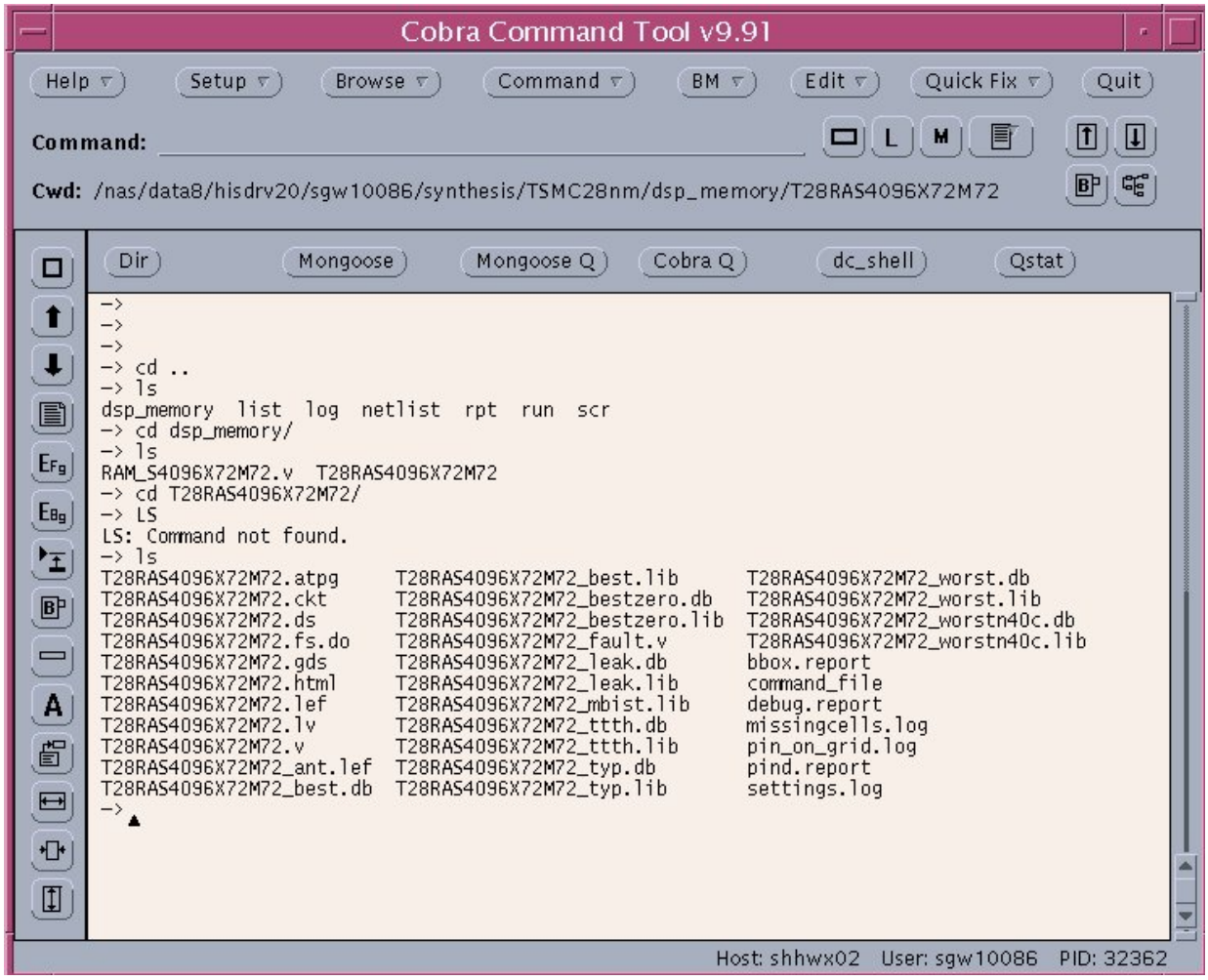
```
! Define font type for buttons
font.name                  : lucidasans-bold-8
! Define font type in command window
Cobra.FontName             : fixed
! Define delimiting characters when doing selections
text.delimiterChars        : () \011!\/{}[],;:*#&
```

Place the .Xresources file in your home directory. It will be executed when logging in to the system. Use this command when changing the setup after logging in:

→ xrdb .Xresources

4 Starting Cobra

Here is what the startup window looks like:



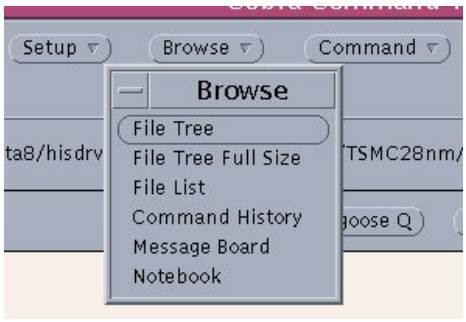
You can use this window as a normal text terminal to input commands at the prompter or using the command line at the top.

When you use Cobra you can save most settings in the program in a file called .cobra-setup. This file will be saved in the directory where Cobra is started. The next time you start Cobra from the same directory this file will be read and settings will be remembered. For that reason you should start Cobra from your home directory every time.

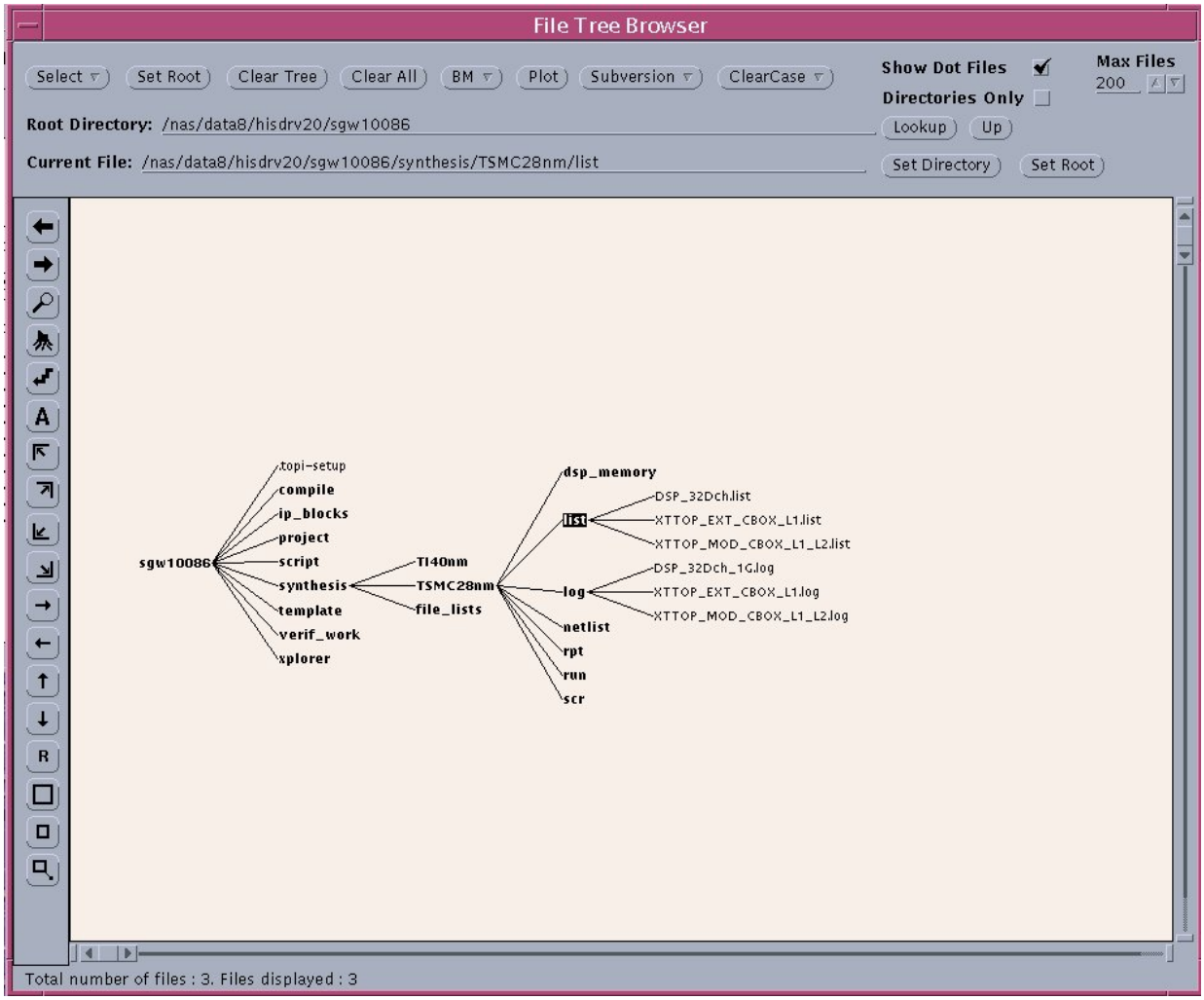
4.1 Getting help

From the Help menu you can open the <To Get Started> document. This document describes how to setup and use the Cobra Command Tool. For more information about Cobra read this document.

5 Using the file tree browser



One of the most time saving features in the Cobra program is the File Tree Browser. It lets you perform all kind of file operations in a simple and intuitive way. You open the File Tree Browser from the Browse menu found at top of the terminal window. Select File Tree form the Browse menu to open the File Tree Browser. In the File Tree Browser you can display as many file trees as you like. To display a file tree just enter the full directory path to the start directory in the Root Directory text line and click the <Set Root> button. The root directory and the next level of files and directories will be displayed. Double-clicking on directory will open the next level of files and directories.



5.1 Selecting files

You use the mouse to select files and directories in the file tree. Here is how it works:

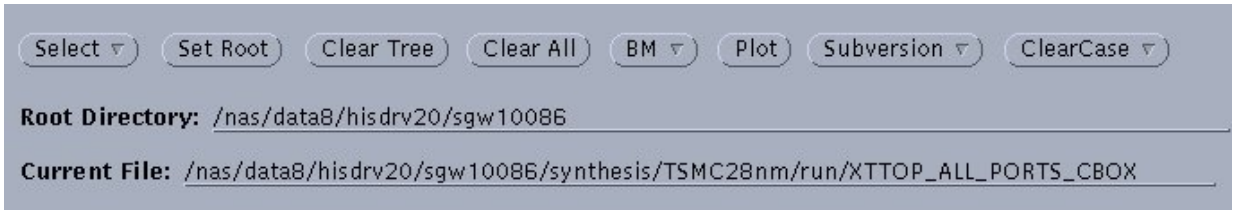
- ➔ Using the left mouse button will select the file pointed at and clear all other selection.
- ➔ Using the middle mouse button will select the file pointed at and leave all other selections.
- ➔ Using the right mouse button will open the file operations popup menu.
- ➔ To clear all selections left-click somewhere in the window

5.2 Setting the font size

To change the font size used in the File Tree Browser you select Setup Menu->File List Browser and select the font size you prefer from this window.

5.3 Header buttons and menus

This is what upper part of the file tree browser window looks like. Here follows a description of the buttons and menus are used for.



From the Setup menu you can select a directory to be the root directory. You have the following choices.

- Current directory is the directory currently used in the terminal window.
- Parent directory is the parent directory to current directory
- Selected directory is a directory name you have selected somewhere in Cobra
- Home directory is your own home directory (Ex. /home/sgw10086)

When you have selected a root directory you click the <Set Root> button to display the file tree starting with the root directory.

The <**Clear Tree**> button only clears the file tree browser window from the tree you selected. NO files will be deleted.

The <**Clear All**> button clears all the trees in the file tree browser. NO files will be deleted.

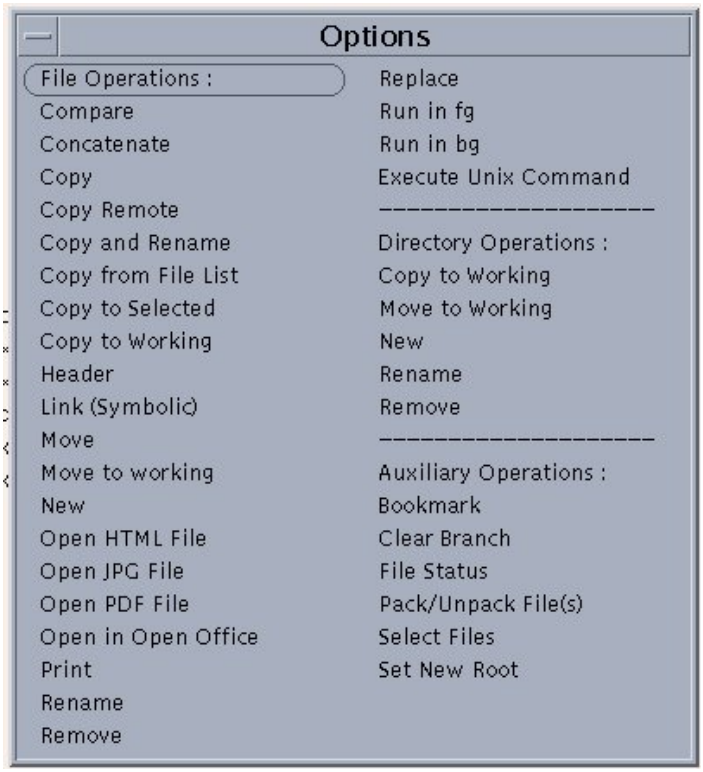
The <**BM**> menu selects one directory bookmark and displays the file tree in the file tree browser. See “Using Bookmarks” for more information on how to use and setup bookmarks.

The <**Plot**> button opens the Plot Setup window.

The <**Subversion**> menu adds full Subversion revision handling to the file tree browser. Almost all Subversion commands are available from this menu.

The <**ClearCase**> menu adds full ClearCase revision handling to the file tree browser. Almost all ClearCase commands are available from this menu.

5.4 File operations



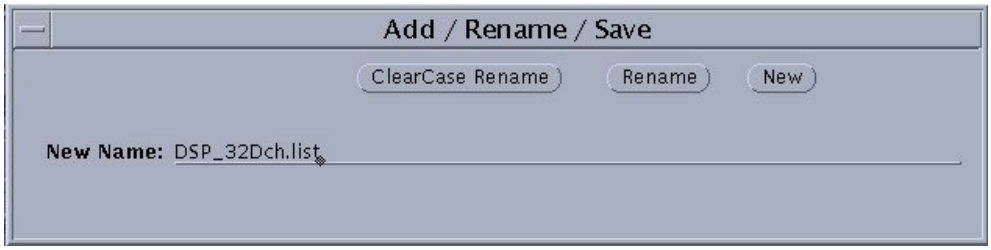
Using the file tree browser you can perform all kinds of file operations only using the mouse. You use the popup menu to perform these operations. Right-clicking in the file tree browser will bring up the popup menu.

Some of these commands will operate on single files, other operations needs at least two files selected. Here are some examples.

The commands listed under File Operations will operate on regular files only. The commands listed under Directory Operations will operate on directories only.

5.5 Renaming a file

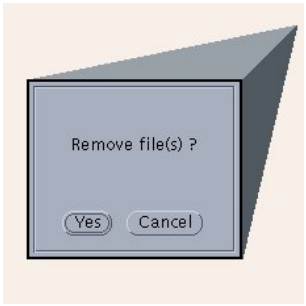
To rename a file select the file using the left mouse button and click open the popup menu and select <Rename File>.



Enter a new name and click the <Rename> button.

5.6 Deleting files and directories

Select all files you would like to delete and select <Remove> from the File Operation's part of the popup menu. This notice window will popup and give you the possibility to cancel the operation.



To delete directories do the same thing but select <Remove> from the Directory Operation. For safety reasons only empty directories can be removed.

5.7 Copying a file

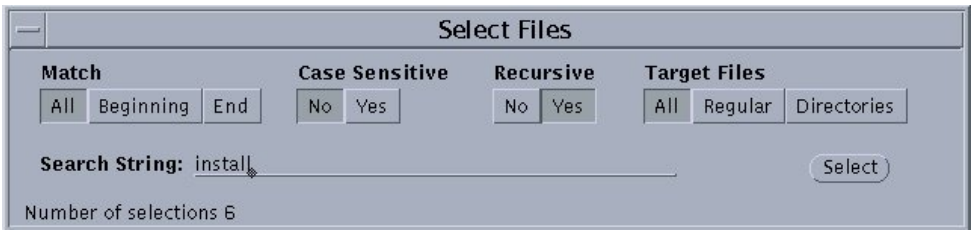
To copy a file, first select the destination directory using the left mouse button and then select the file to be copied with the middle mouse button. Now click open the popup menu and select <Copy File> to copy the file to the destination directory. It is that simple.

5.8 Copying and moving files to the working directory

You can copy or move files and directories to your current (working) directory. The working directory is the directory you are currently using in the terminal window. To move a file or directory select the file and choose <Move to Working> and to copy a file or directory select the file and choose <Copy to Working> from the popup menu. Make sure no program is running in your terminal window. The move and copy will be executed in the terminal window using a <mv> or <cp> command .

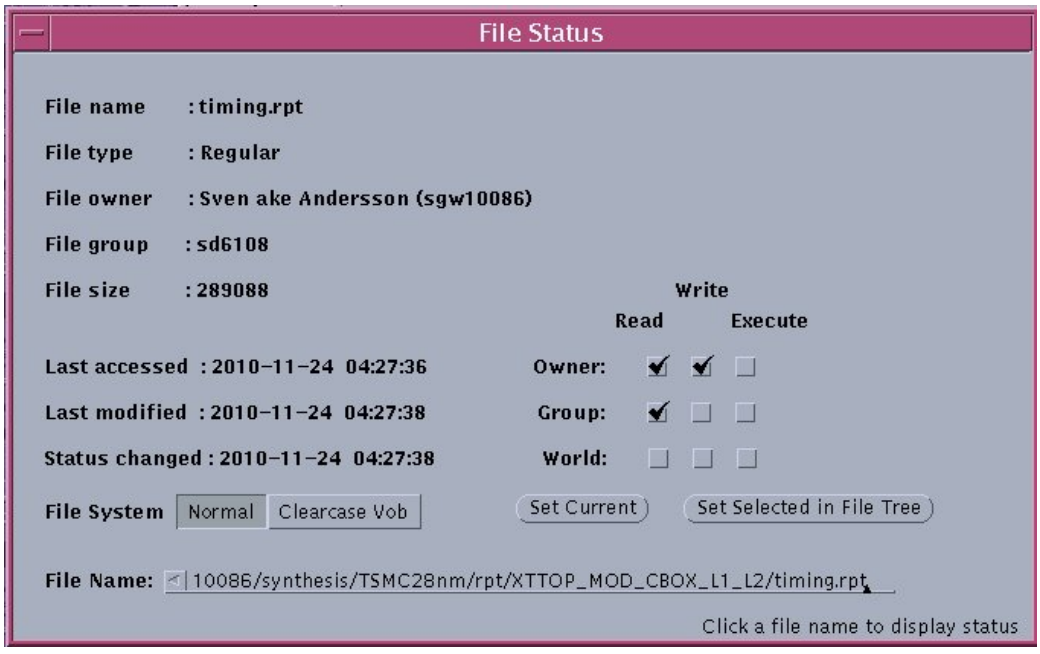
5.9 Selecting files by name

To select all files in the file tree containing a certain text string open the <Select Files> window.



5.10 Displaying file status

To display information about a file or directory, select that file in the file tree and choose File Status from the popup menu. In this window you can also change the permissions for the file or for all files selected in the file tree.



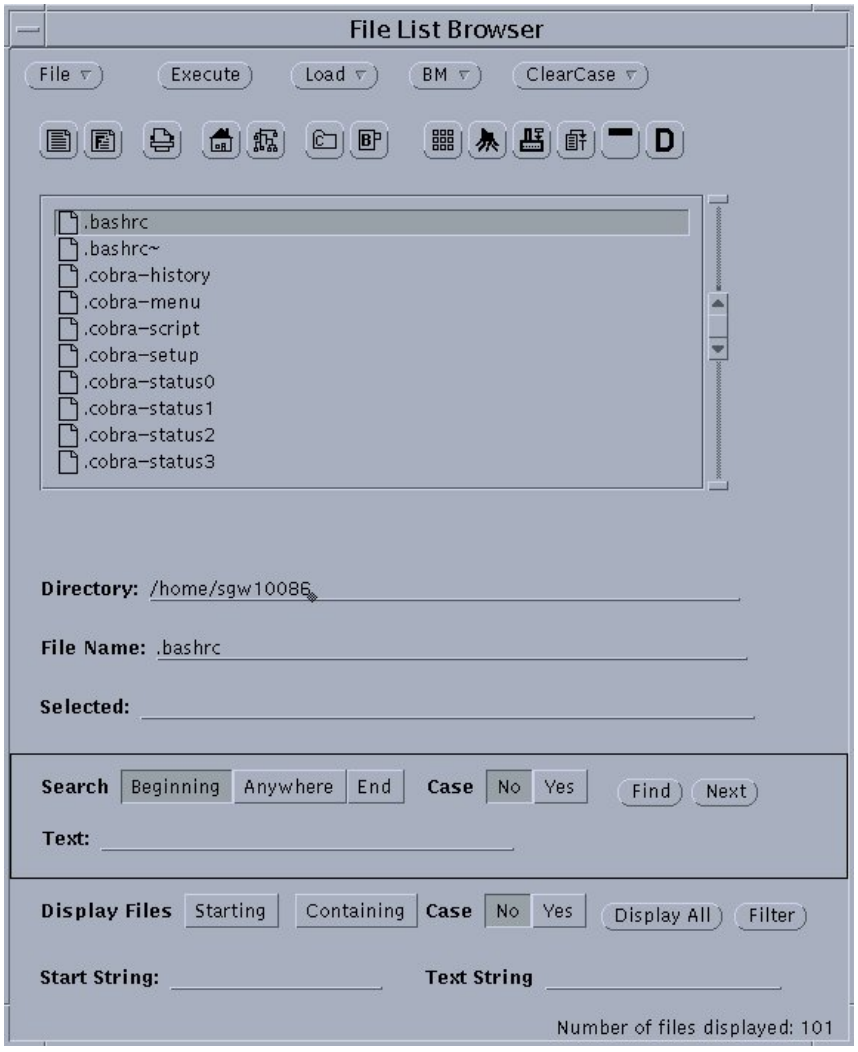
6 Using the file list browser

When displaying directories with many files (more than 100) the file tree browser will be overcrowded and not useful for file manipulations. In the File Tree Browser there is a <Max Files> setting that will decide what is the maximum number of files that will be displayed for one directory. If there are more files in a directory the File List Browser will be opened instead. The File List Browser will display files in a scrolling list only displaying 10 files at any time. You can also open the File List Browser from the Browse menu yourself.

Enter the directory path and hit return to display all files and directories. Directories will be listed first and then regular files. They will be sorted in alphabetical order.

There is a built-in search function that lets you search for files by entering a search text string. You can specify to search for this string in the beginning, end or anywhere in the file name.

There is also a filter function that lets you filter out only the files you are interested in. You can specify a start string and/or text string as your filter.



6.1 File list browser buttons

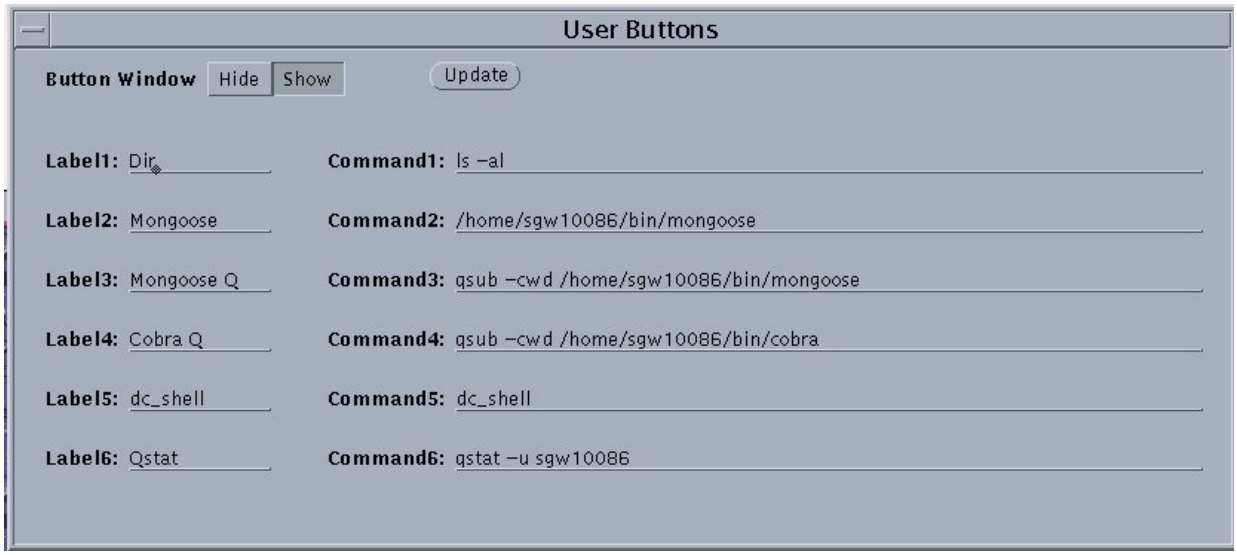
Here is a description of the usage of the file list browser buttons.

1 2 3 4 5 6 7 8 9 10 11 12 13

Pos	Description
1	Edit the selected text file. Open the selected text editor and load the file.
2	Display an html file. Open the selected HTML viewer and display the file.
3	Print the file.
4	Display all files in the home directory.
5	Not used.
6	Display all the files in the current working directory.
7	Bookmark the selected file.
8	Open the file status display window.
9	Make the selected directory the root in the file tree browser and display all the files in this directory.
10	Copy selected file to the current working directory in the terminal
11	Copy selected file to a file tree browser directory
12	Display the first 10 lines of the text file
13	Go to the selected directory. Execute a cd <selected dir>

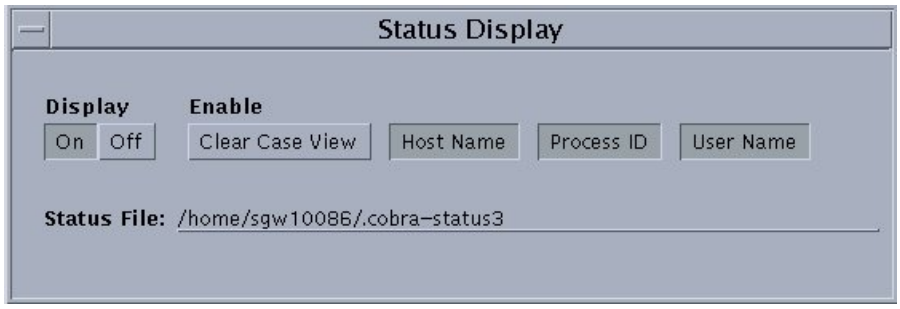
7 Defining user buttons

You can easily setup your own defined user buttons. Select User Buttons from the Setup menu to open this window. Define the button label and the command to execute when clicking this button and set the Button Window selection to show.



8 Status display

The Status Display window is used to setup the status display in the right lower corner of the main terminal window. You can select to have the host name, process ID and user name displayed. Don't forget to enable the display by setting the Display On. The values are found by executing the command **precmd** and store the result in the status file specified here below.



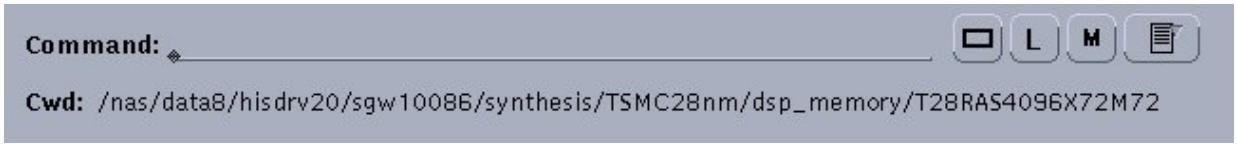
The precmd is a built-in command executed before a normal command is executed in the terminal window. This alias is used to define the precmd command:

alias precmd 'printf "P:%s\nC:%s\nH:%s\nV: NotUsed\n" "$prompt" "$cwd" "$HOST" "$USER" >!

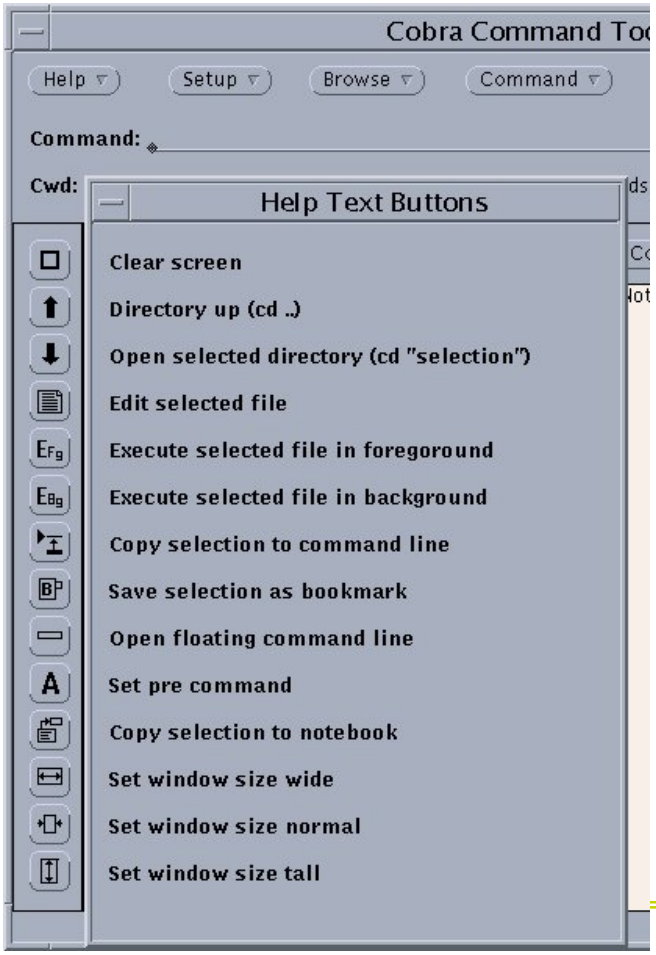
/home/sgw10086/.cobra-status3'

8.1 Display current directory

Many times the terminal prompt is setup to display the current directory. This can be very confusing when the directory path is very long. A better solution is to display the current directory in the terminal window header. The Cobra program will display the current directory here.



8.2 Left side buttons



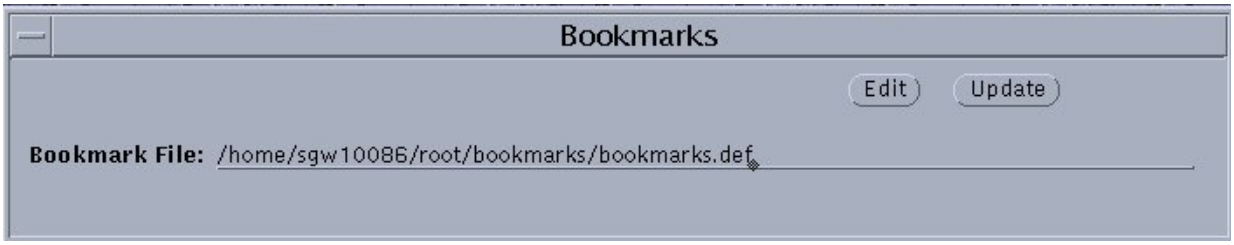
To find out the function of the left side buttons, go to the Help menu and select <Buttons>. This window will popup and explain what the button icons means.

9 Using bookmarks

Bookmarks are perfect for remembering different things. In Cobra you can bookmark the following things:

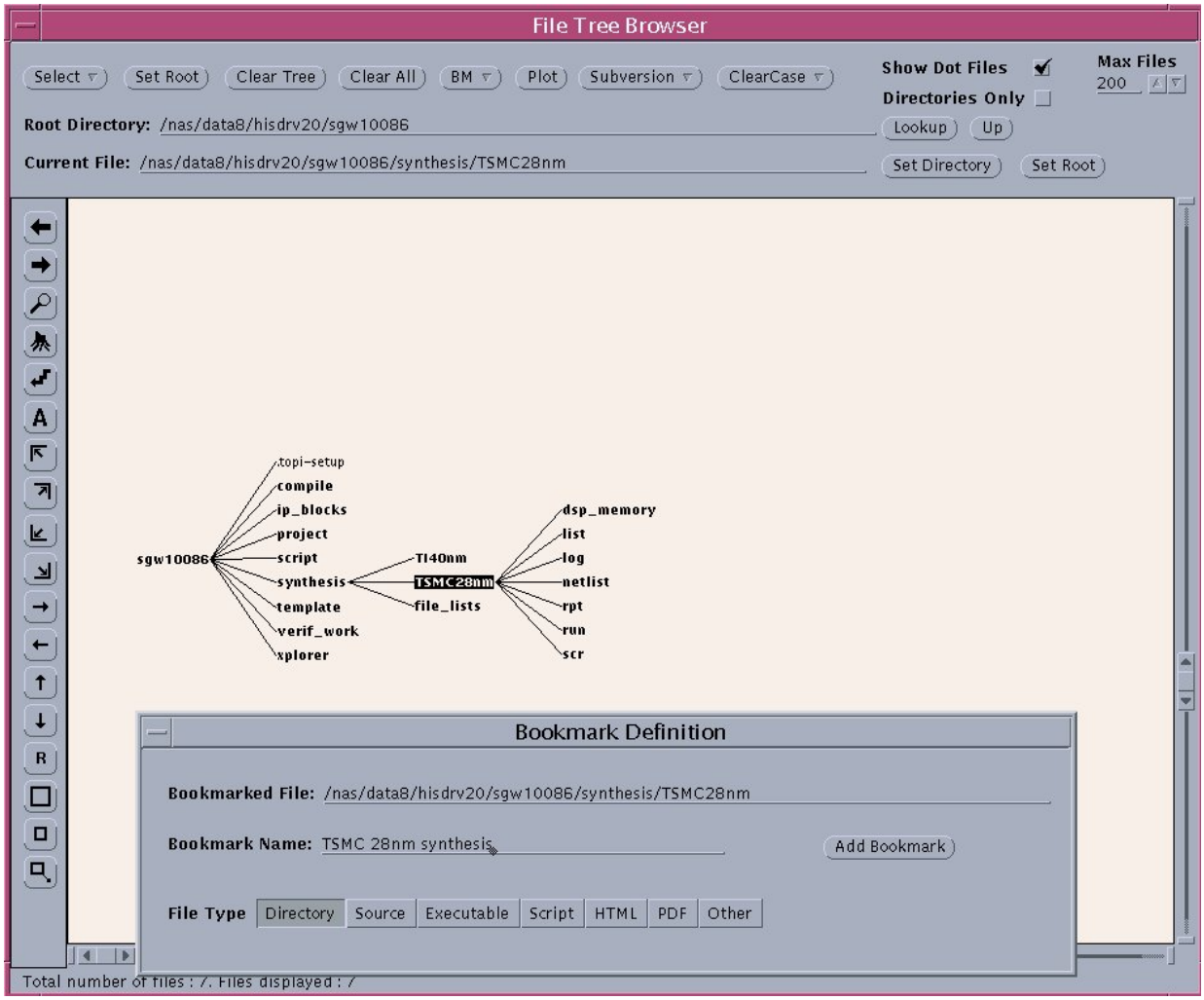
1. Directories
2. Source files (ASCII)
3. Executable Files
4. Script Files
5. HTML Files
6. PDF Files

Before you can start using bookmarks you have to specify a file where to store all bookmarks. You do this from the Setup menu. Select Setup Menu->Bookmarks to open this window. Enter the full path name of the non-existing bookmark file. Don't create the file it will be created the first time you save a bookmark.

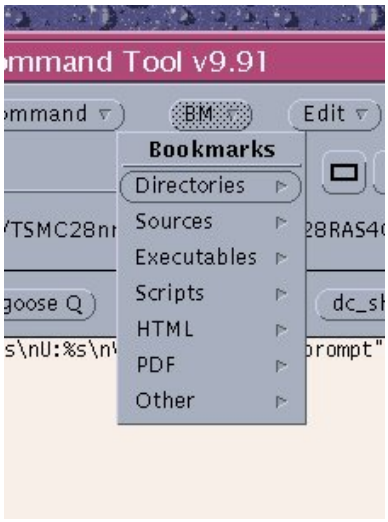


9.1 Saving bookmarks

You can save bookmarks from the terminal window, the file tree browser and the file list browser. To save a bookmark in the file tree browser select the file or directory to bookmark and choose Bookmark from the popup menu. The Bookmark Definition Window will open and you only have to add a name for the bookmark and click <Add Bookmark>.

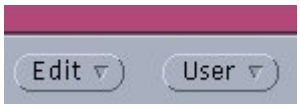


9.2 Selecting a bookmark



To select a bookmark go to the BM menu in the terminal window, the File Tree Browser window or the File List Browser window and select the bookmark you wish to use.

10 User defined menu



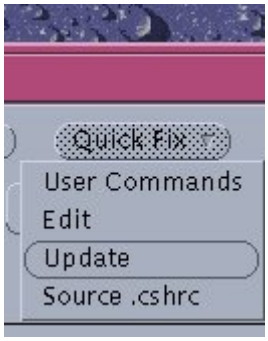
The User menu can be found in the top button row. You can define your own menu adding commands to the user menu. You add your own menu definition file called **.cobra-menu** in your home directory. This file has the following format:

$COBRA_MENU
$BUTTON_NAME, <button name>
$MENU_TITLE, <menu title name>
<Command Name>, <Command>

Here is an example

```
$COBRA_MENU
$BUTTON_NAME,Quick Fix
$MENU_TITLE,User Commands
Source .cshrc, source ~/.cshrc
```

$COBRA_MENU is an identification tag and must be the first line in the .cobra-menu file.
$BUTTON_NAME defines the text displayed on the button.
$MENU_TITLE is the text displayed at the top of the popup menu.
<Command Name>is the text displayed in the menu
<Command> is the command executed in the terminal emulator when selecting this menu entry.



After you created the .cobra-menu file, use the <Update> function to include the new menu.

10.1 Defining function keys

Functions keys can be used to simplify your terminal work activities. Function keys F1 to F6 have been predefined and F7 to F9 can be

defined by the user in the Function Keys setup window found in the Setup menu.

Function Key	Command Executed
F1	Execute selected command in foreground
F2	Execute selected command in background
F3	Edit selected file
F4	cd ..
F5	cd <selected directory>
F6	Copy selection to command line

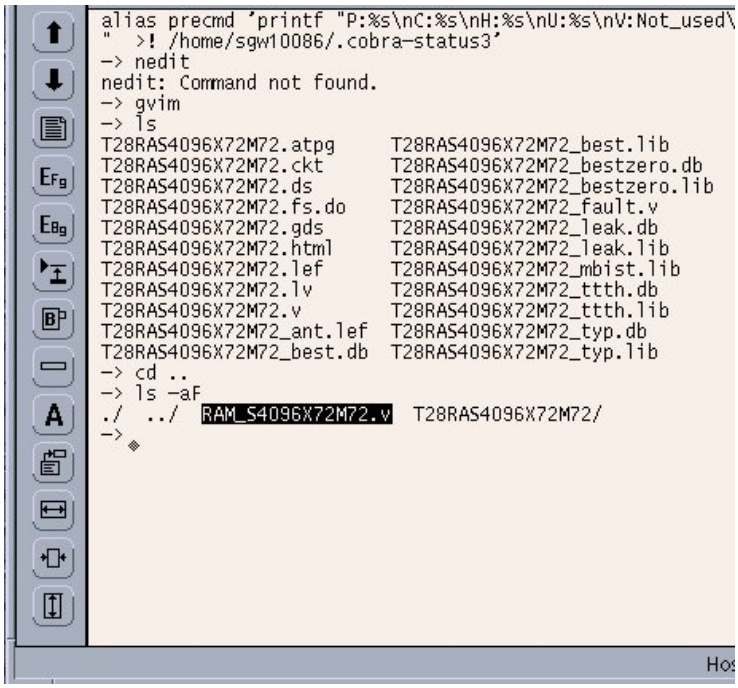
11 Editing text files

One of the most common tasks when working as a hardware or software designer is editing or looking at text files. In the Cobra program there are many ways to initiate a text editing session. But before you start editing files you have to choose your preferred text editor from the menu Setup->Text Editor.

You can choose one of the editors from the list or you can choose <user def> and enter the command to start an editor. The selection will be saved in the setup file.

11.1 Starting an edit session

Editing session can start from the terminal window, the file tree browser and the file list browser. To start from the terminal window you can select a file name displayed and click the edit button  at the left side. The text editor will be started in the terminal. The file edited must reside in the current directory.



To start an editing session from the file tree browser or from the file list browser you just double-click the file name.

12 Command list manager

Command lists are text files that contain a number of commands you often use and want them to be easily executed. When double-clicking a command in a command list that command will be executed in the terminal window. You can have many command lists and choose which one to use at any time. Before you start using command lists you have to decide in which directory they are going to be stored.

1. From the Setup menu open the Command List Setup window.
2. Enter the name of the directory where you are going to store the command lists.

12.1 Create a command list file

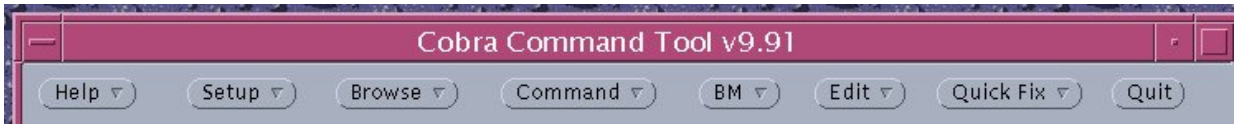
Now you are ready to create your first command list file and store it in the command list directory. Here is an example:

```
$$COBRA_COMMANDS
Housekeeping commands
-------------------------------------------
--Display all groups--
groups
--Display groups you belong to--
id -a
--Set default group
newgrp sdrv200
--Change to executable if already set--
chmod -R a+rX ???
--Add read permissions for others--
chmod -R o+r ???
--Set group ID
chmod g+s ???

chgrp -R sdrv200 ???
chgrp sdrv200 ???
```

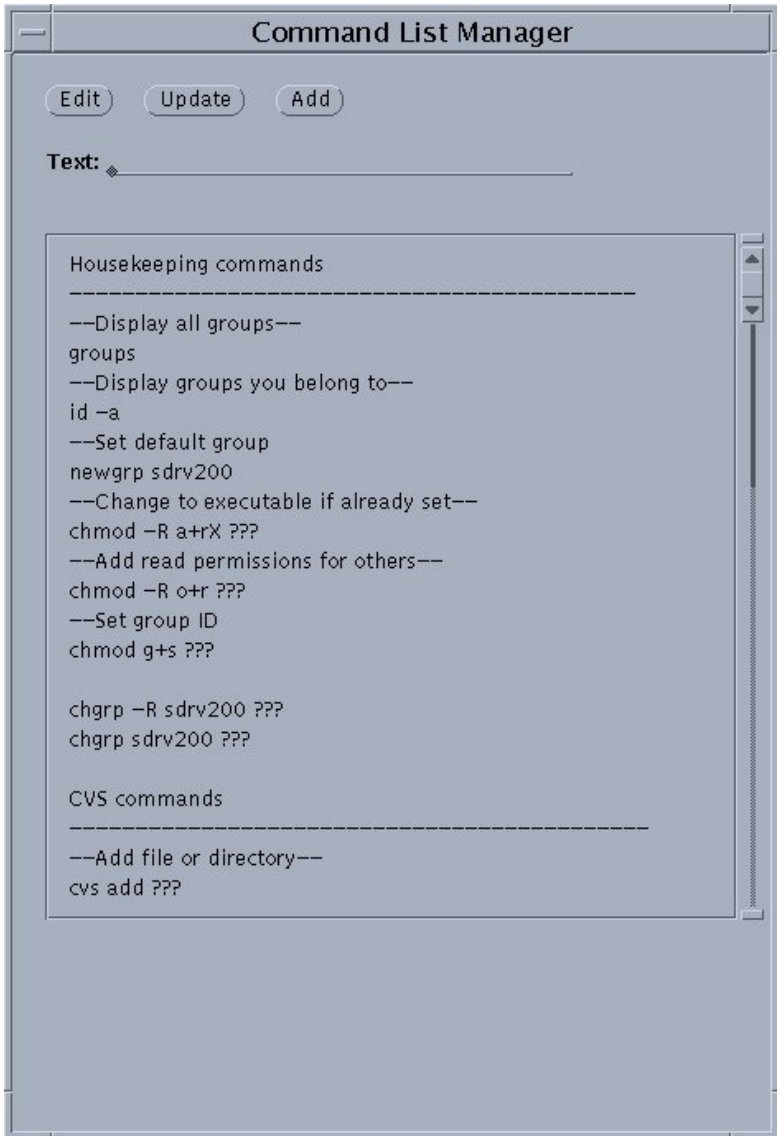
The first line in the file must be $$COBRA_COMMANDS for the file to be recognized as a command list. The rest of the file can have the format you prefer. You can mix commands and comments and even add comments after the command. In that case the comment must look like this: /* Comment */. When you double-click a command with a comment, the comment will be stripped of before the command is executed.

You can find an example command file here: **/home/sgw10086/root/commands/linux_commands**

When you have the command list ready and stored in the command directory you are ready to open the Command List Manager. Right-click the <Command> button and select the command list you want to use.



This will open the Command List Manager.



12.2 Using command lists

Commands in a command list can include different selection tags. These tags will be replaced with a selection from the terminal window, the file tree browser, the file list browser or the text field in the command list window before the command is executed. Here is a description of the different tags that can be used.

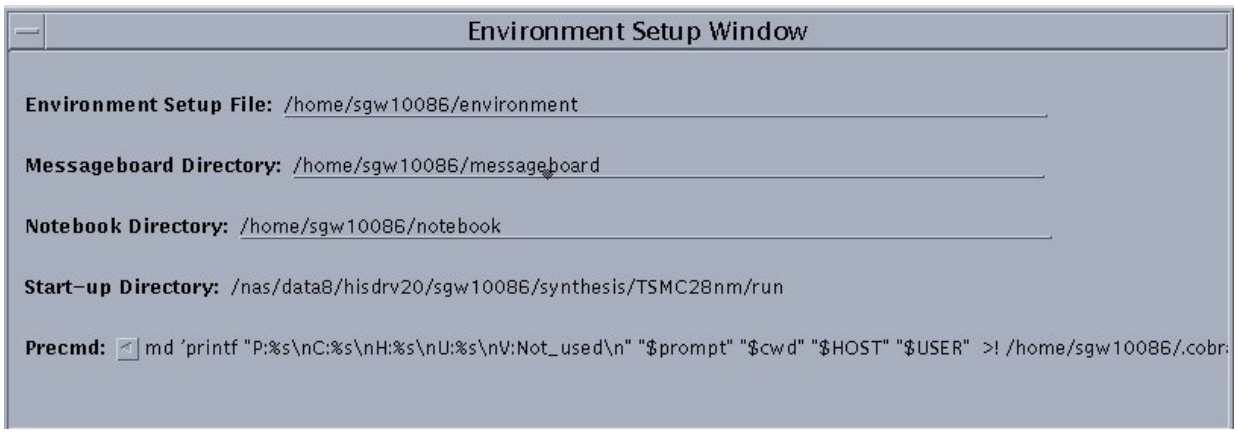
Selection Tag	Description
$$$	Is replaced with selected text anywhere inside Cobra
%%%	Is replaced with text specified in the Text textline in the Command List window
###	Is replaced with the file name selected in the File List Browser
&&&	Is replaced with the full path name selected in the File List Browser
@@@	Is replaced with current directory name

???	Is replaced with the full path name of the file selected in the File Tree Browser
!!!	Is replaced with the file name of the file selected in the File Tree Browser

You have up to two selection tags in one command.

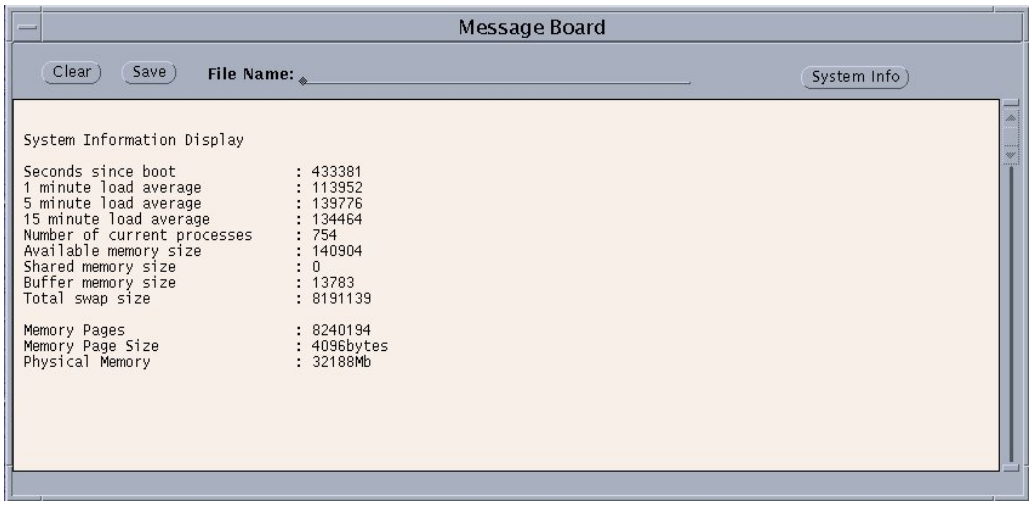
13 Environment setup window

In this window you can specify an environment setup file that will be sourced when the Cobra program starts. You can also specify where data from the message board and the notebook windows will be saved. To open the Environment Setup Window choose Environment from the Setup menu.



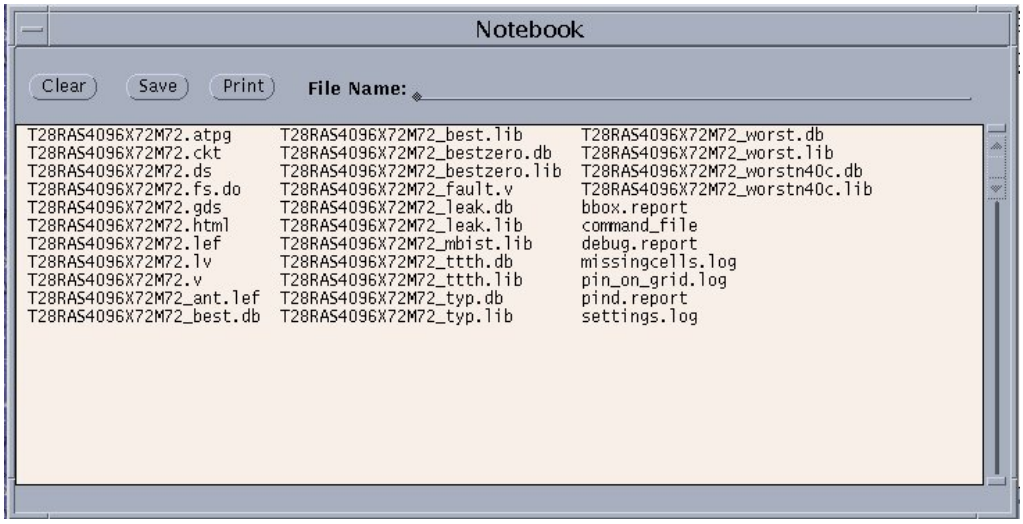
14 The message board

The message board will display different information and error messages. You open the message board from the Browse menu. Clicking the System Info button will display some information about the computer you are currently using.



15 The notebook

The notebook can be used for saving small pieces of text from the terminal display. To save text to the notebook you select text from terminal screen and click the <Transfer to notebook> button  . You open the notebook from the Browse menu.



16 Saving the setup

Before you quit the Cobra program you should save your Cobra setup. Select the <Save Setup> entry in the Setup menu to save the setup in the file .cobra-setup in the startup directory.

17 Exiting the Cobra program

Always use the <Quit> button to exit the program.

18 Tips and tricks

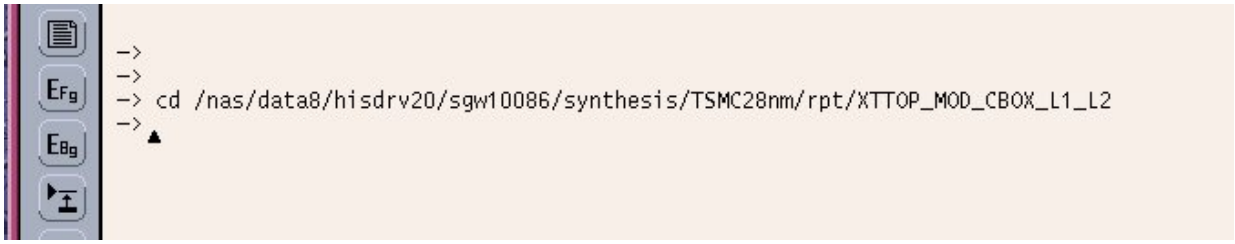
Use these tips and tricks to save time and be more productive by using Cobra. Try them out!

18.1 Fast directory switching

Moving between different directories can be a tedious and time consuming job. Here is way to make this work much more pleasant using the File Tree Browser.

1. Start by displaying the file tree with all directories you need to access in the File Tree Browser.
2. Select the directory you want to go to.
3. Click the Set Directory button.

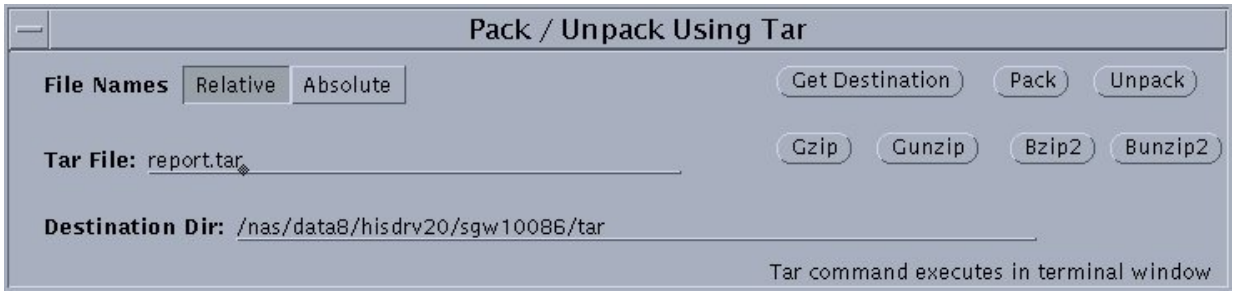
In the terminal window a <cd> to this directory will be executed.



18.2 Create a tar file

Here is an easy way to package a number of single files at different locations into one tar file.

1. Select Pack/Unpack Files from the popup menu.
2. Select a directory to store the tar file
3. Click <Get Destination> to move the selection to the Destination Dir.
4. Enter a name for the tar file.
5. Select all the files you want to put in the tar file in the File Tree Browser
6. Click the <Pack> button to generate the tar file
7. When finished click the <Gzip> button to compress the tar file



18.3 Create a cvs database handler

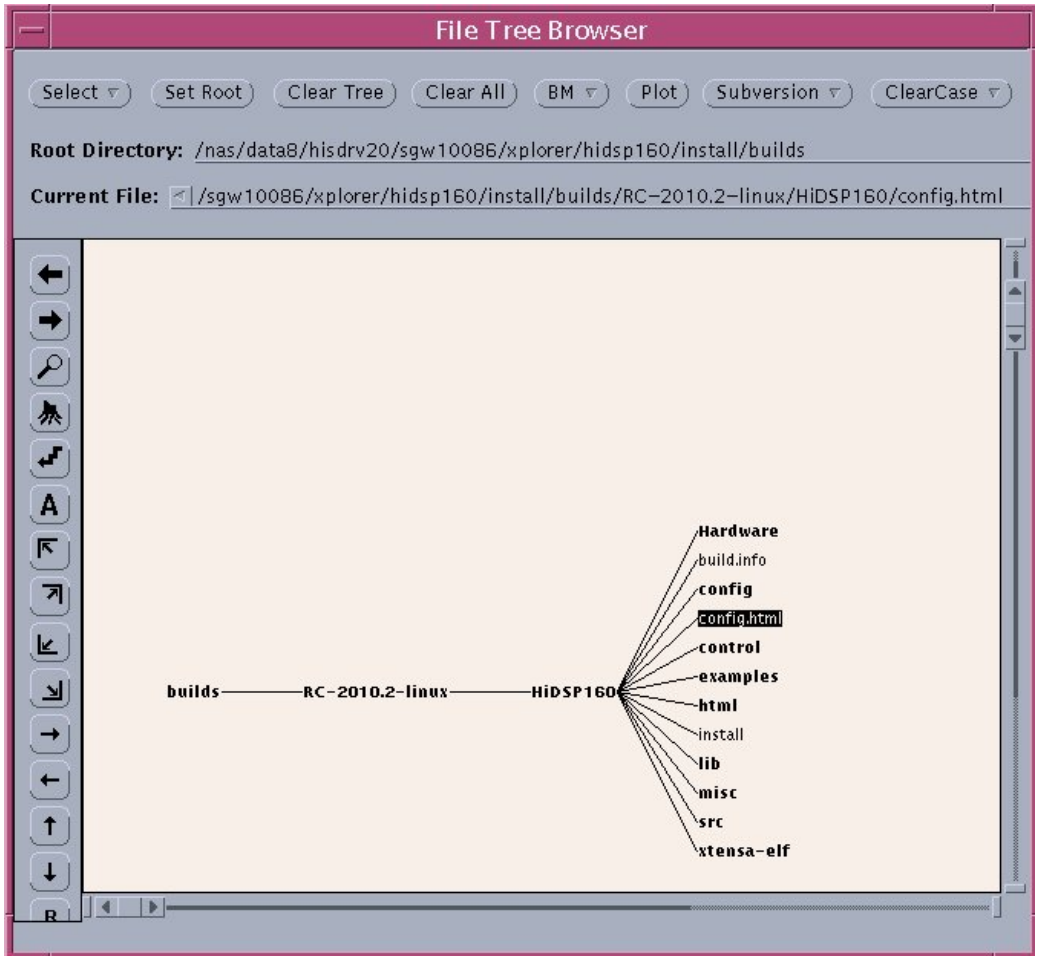
It is very easy to create a command list that will handle all cvs commands used when working with CVS repository. Here is an example using selections in the File Tree Browser:

```
$$COBRA_COMMANDS
CVS commands
--- Add file or directory to repository
cvs add ???
---Display changes. No commit
cvs -n commit ???
--- Commit changes. Add message from text field here above
cvs commit -m %%% ???
--- Display status
```

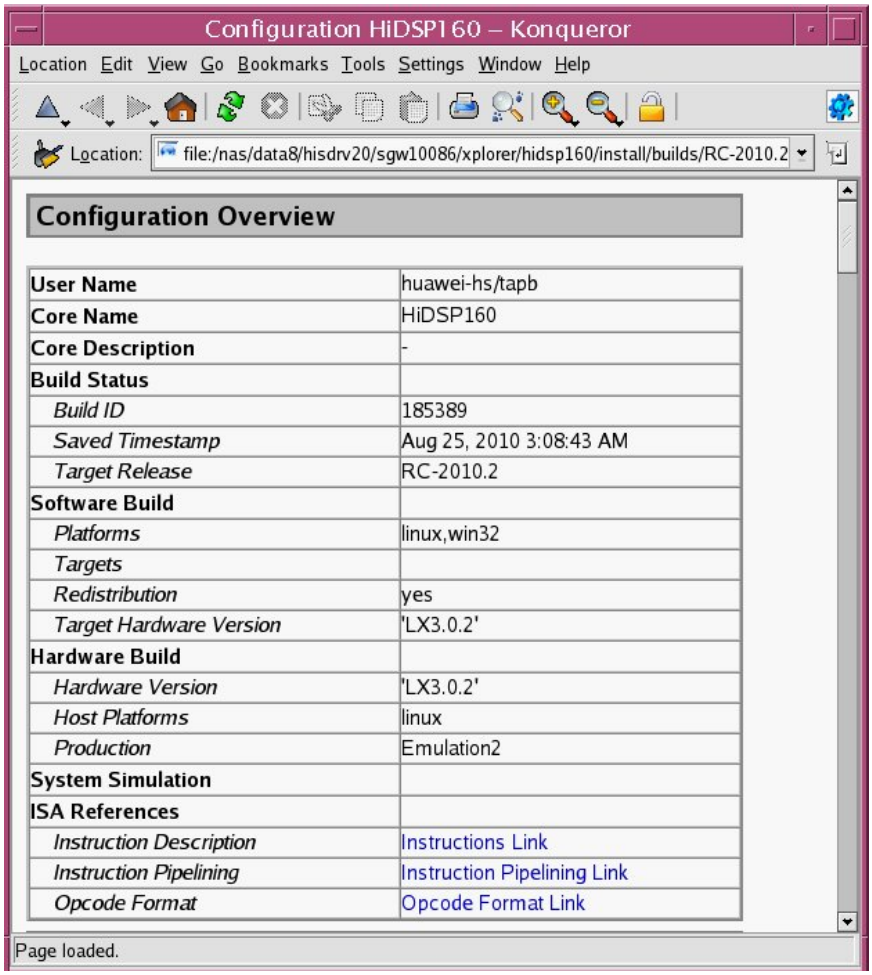
```
cvs status ???

--- Update your local copy

cvs update –d ???

--- Display changes no update

cvs –n –q update ???

--- Remove file

cvs remove ???

--- Checkout local copy

cvs checkout ???
```

18.4 Display a html file

Select the html file you want to look at in the File Tree Browser. Choose <Open HTML File> from the popup menu.



The html file will displayed.

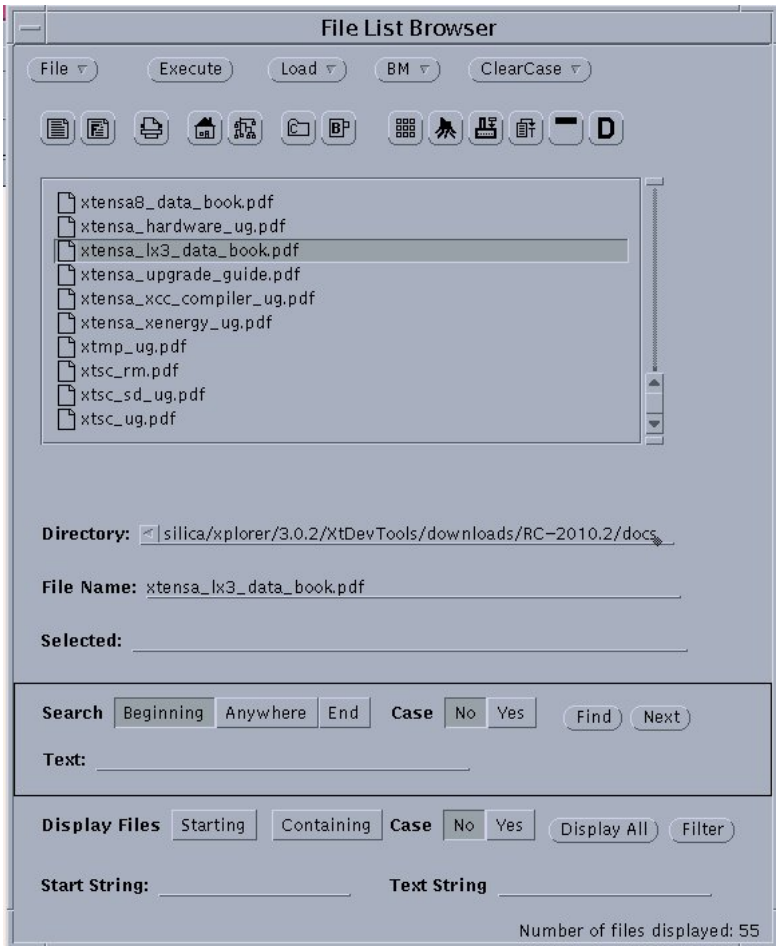


You can do the same for PDF and JPG files.

18.5 Display a file header

You can display the first 10 lines of text in a text file by selecting the file in the file tree browser and choose <Header> from the popup menu. The header will be displayed in the message board window.

18.6 Copying a file from the file list to the file tree



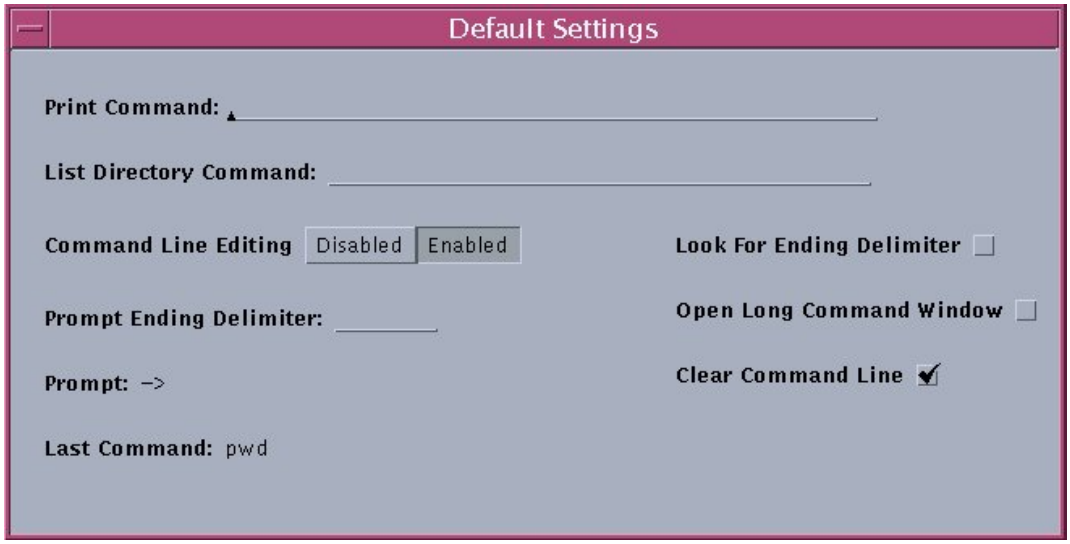
Sometimes it can be necessary to copy a single file displayed in the file list browser to the file tree browser. Here is an explanation on how to do that. Find and select the file you want to copy in the file list browser.

Select a destination directory in the file tree browser and click the file transfer button  in the file list browser window. The file will be copied to the directory selected in the file tree browser.

18.7 Entering long commands

When you need to enter long commands it can be convenient to use the Command Window. In this window you enter very long commands and have them executed in the terminal screen window. Click this left side button  to open the Command Widow.

You can decide if the command line will be cleared after executing a command or if the command should stay. Open the Default Settings window from the Setup menu and mark the <Clear Command Line> checkbox if you want the command line to be cleared.



19 References

[1] Zoocad Consulting www.zoocad.com/zoodesign_cobra.html

[2] New Horizon Blog: svenand.blogdrive.com