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VEOS User Guide

VEOS is a Linux-based operating system designed for managing telecom equipment and services. This guide contains basic instructions for working with the system, information about common commands, and usage techniques.

Key user features:

- Multi-user operation with permission separation
- Execution of standard Linux commands and utilities
- Access to the built-in help system (man, info)
- File and process management from the command line
- Installation of additional software using the package manager (dnf)

1. System boot and login

1.1. Booting VEOS

VEOS starts automatically after the computer is powered on. The **GRUB** bootloader menu appears on the screen, listing the available boot options.

Action	Key
Select a boot option	Up / Down arrow keys
Immediately boot the selected option	Enter
Edit boot parameters	E
Switch to graphical boot display mode	Esc

During the boot process, messages about starting various services are displayed on the screen. Each line begins with the status **[Message]** and either OK or FAILED.



If any boot stage finishes with the FAILED status, administrator intervention may be required.

Main boot stages:

- Kernel loading
- Mounting file systems
- Starting system services
- (If required) checking file systems for errors

1.2. Logging into the system

After boot is completed, the system switches to console mode and displays a login and password

prompt.

```
Login: _  
Password: _
```

Credentials are provided by the system administrator. After successful authentication, a command shell (usually bash) is opened.



Important: Use the Ctrl+Alt+F1 ... Ctrl+Alt+F6 key combinations to switch between virtual consoles.

2. Built-in documentation

VEOS includes an extensive built-in help system.

2.1. The "man" utility

The man command (short for manual) is used to view manual pages for commands, configuration files, and other system objects.

Action	Command
View help for the <code>ls</code> command	<code>man ls</code>
Search for a command by keyword	<code>apropos <keyword></code>
Search for a command by keyword (short form)	<code>man -k <keyword></code>
Help for the man utility itself	<code>man man</code>

Navigation inside a manual page:

Key	Action
Space	Go to the next page
q	Exit viewing mode

2.2. The "info" utility

Unlike linear man pages, the info system provides hypertext-style documentation.

Command	Action
<code>info</code>	Display the list of all info documents in the system
<code>info info</code>	Open the navigation guide for info
<code>h</code>	Show navigation help (inside info)

3. Software installation and updates

The dnf (or yum) package managers are used to manage software. Installation and updates require superuser privileges.

3.1. Basic package operations

Operation	Command (as root)
Install a package from a repository	<code>dnf install <package_name></code>
Remove a package	<code>dnf remove <package_name></code>
Update all system packages	<code>dnf update</code>
Install a local rpm package	<code>rpm -ih <path_to_file.rpm></code>
Update a local rpm package	<code>rpm -Uh <path_to_file.rpm></code>

Example of installing the fastdpi (DPI) package:

```
dnf install fastdpi
```



VEOS is preconfigured with access to the official VAS Experts repositories, so company packages can be installed without additional repository configuration.

4. Basic commands for working with the system

All commands listed in this section are standard Linux commands and can be executed from the command line.



Most short command options start with a single hyphen (-l), after which multiple letters can be specified consecutively (for example: `ls -lF` instead of `ls -l -F`).

4.1. User management

Command	Action	Note
<code>su -</code>	Obtain superuser (root) privileges	The root password will be requested
<code>exit</code>	Exit the superuser session	Returns to the regular user
<code>id</code>	Display information about the current user	Shows UID, GID, and group list
<code>id <login></code>	Display information about another user	
<code>passwd</code>	Change the current user's password	The old password must be entered
<code>passwd <login></code>	Change another user's password	Only root can execute this

4.2. Navigation and file operations

Command	Description	Examples / Notes
ls	View directory contents	ls -la — show all files with detailed information
cd	Change the current directory	cd /usr/bin — switch to an absolute path, cd .. — move one level up, cd - — return to the previous directory
pwd	Show the absolute path to the current directory	
mkdir <directory>	Create a new directory	mkdir -p path/to/dir — create a directory with parent directories
rmdir <directory>	Remove an empty directory	rm -rf is often used for non-empty directories
rm <file>	Remove a file	rm -i — request confirmation, rm -rf — recursive deletion use with caution!
cp <source> <target>	Copy a file or directory	cp -rp dir1 dir2 — recursive copy preserving permissions
mv <source> <target>	Move or rename	mv file.txt dir/ — move a file into a directory
cat <file>	Display file contents in the console	cat -n file.txt — with line numbering
head <file>	Display the first lines of a file	head -n 20 file.txt — show the first 20 lines
less <file>	View a file page by page	q — exit



Warning: The rm and rmdir commands permanently delete files during normal operation, bypassing the Trash. Be especially careful with recursive deletion (-r).

4.3. Searching for files and commands

Command	Description	Example
grep <pattern> <file>	Search for a string in a file	grep error /var/log/messages
find [path] [expression]	Search for files by condition	find . -name "*.conf" — find all .conf files in the current directory
whereis <command>	Show the location of a program, source files, and documentation	whereis bash
which <command>	Show the full path to a command executable	which ls

4.4. Access permissions

Command	Description	Example
chmod <mode> <file>	Change file permissions	chmod +x script.sh — make the file executable for everyone
chown <owner>:<group> <file>	Change the owner and group of a file	chown test:users file.txt

4.5. System and process monitoring

Command	Description	Example
ps	Display the list of the current user's processes	ps aux — detailed list of all processes
kill <PID>	Stop a process by its identifier	kill -9 <PID> — force termination
df	Show disk space usage	df -h — human-readable format
du	Estimate disk space used by files and directories	du -sh ~/ — total size of the home directory
&	Run a program in the background	./long_task.sh &
bg	Resume a stopped job in the background	
fg	Bring a background job to the foreground	

5. File archiving and compression

The **tar command** is used to create archives (without compression). Additional programs (gzip, bzip2, xz) are used for archive compression.

Operation	Command
Archive a directory	tar -cf <archive.tar> <directory>
Extract an archive	tar -xf <archive.tar>
Extract a compressed archive (.tar.gz or .tgz)	tar -xzf <archive.tar.gz>
Create a compressed .tar.gz archive	tar -czf <archive.tar.gz> <directory>

Example:

```
# Archive the Documents directory into my_docs.tar
tar -cf my_docs.tar Documents/

# Extract a gzip-compressed archive into the current directory
tar -xzf archive.tar.gz
```

6. Frequently asked questions (FAQ)

Question: How do I obtain superuser (root) privileges?

Answer: Run the `su -` command. You will be prompted for the root user password. Use the `exit` command to return to the regular user.

Question: How do I officially install a VAS Experts package?

Answer: `dnf install <package_name>`. Search for packages using: `dnf search <keyword>`.

Question: Where can I find help for the `ls` command?

Answer: Use the built-in documentation: `man ls` or `info ls`.

Question: How do I run a program in the background?

Answer: Add the & symbol at the end of the command, for example: `./backup_script.sh &`.

Question: Can I search within file contents?

Answer: Yes, use the grep command. Example: `grep -r "error" /var/log/`.

□ Technical document information

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