

For Linux®

Net COBOL

Runtime System
Installation

FUJITSU

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For NetCOBOL for Linux Version 7.3

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Preface

This installation guide includes information required before and during the installation and use of NetCOBOL for Linux.

NetCOBOL for Linux, which includes a compiler, runtime libraries, and a debugger, is intended for the development of business applications using the COBOL language.

Audience

This guide is intended for programmers who will install and use the NetCOBOL product.

How this Manual is Organized

This manual contains the following information:

- Media on which NetCOBOL is distributed
- Packages that make up the NetCOBOL product
- Input and output devices that are supported by NetCOBOL
- Disk and memory requirements for NetCOBOL
- How to install NetCOBOL and related installation considerations
- Notes on the software and documentation

How to Use This Manual

For optimal use of this guide, readers should have a working knowledge of the Linux operating system, and the COBOL programming language.

Conventions Used in this Manual

This manual uses the following typographic conventions.

Example of convention	Description
Mkdir /cdrom	What you type appears in Courier bold (contrasted with on-screen computer output).
Cobol	The names of commands, directories, files, and variables as well as on-screen computer output are depicted in Courier.
<i>Install_dir</i>	Courier italics indicate a command-line placeholder; replace with a real name or value.
...	Ellipses indicate the item immediately preceding can be specified repeatedly.
[def]	Indicates that the enclosed item may be omitted.
{ABC DEF}	Indicates that one of the enclosed items delimited by is to be selected.
The <i>sheet</i> acts as an application creation form.	Italics are occasionally used for emphasis.
"NetCOBOL User's Guide" See Table 2 "Required Disk Size".	References to other publications or sections within publications are in quotation marks.

Related Manuals

Related documentation is listed below:

- NetCOBOL Language Reference
- NetCOBOL for Linux User's Guide
- NetCOBOL for Linux Web Guide
- NetCOBOL for Linux File Access Routines User's Guide

Security

To ensure security when working in an environment that is connected to the Internet, it is important to correctly set up both the applications created with NetCOBOL and their operating environment.

To safeguard resources (such as databases, and input and output files), and definition and information files required for the operation of programs from illegal access and tampering, you need to restrict access to the resources by OS functions and programs. In particular, keep important resources in an intranet environment in which a firewall has been installed.

Although this product offers different communication functions (such as the simple communication interface facility, and the Web subroutines), only the Web subroutines have been designed for use with Internet services. Therefore, only use these other functions in environments that are not connected to the Internet, or in intranet environments in which firewalls have been installed and which have been constructed to prevent security breaches.

If you are using the Web subroutines with NetCOBOL on a Web server, use the Web server authorization apparatus and encryption communication function (SSL) to prevent illegal access or information being leaked or tampered with. Additionally, use the Web server access log to investigate and pursue any incidents of illegal access. For details, refer to the documentation for the Web server you are using.

You need to test applications created with NetCOBOL to ensure that even if malicious, or careless, data values are provided as input, no important data can be destroyed or sensitive information obtained.

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Chapter 1. Distribution

NetCOBOL for Linux is distributed on CD-ROM.

Packages

The CD-ROM contains the following file:

`/mnt/cdrom/LINUX`

Note that `cdrom` is the name of the directory in which the file is stored.

A *package* is one or more programs that comprise a software function. Table 1.1 lists the product names and functions associated with NetCOBOL for Linux.

Table 1.1. NetCOBOL Packages

Package Name	Function
FJSVcbr	NetCOBOL Runtime System

Prerequisite Software

The platforms currently formally supported by NetCOBOL for Linux are shown in Table 1.2.

Table 1.2. NetCOBOL for Linux Supported Platforms

Distribution	Locale
Red Hat Enterprise Linux (v.4 for x86)	C , en_US.UTF-8
Red Hat Enterprise Linux (v.4 for EM64T) 32-bit mode	C , en_US.UTF-8
Red Hat Enterprise Linux (v.5 for x86)	C , en_US.UTF-8
Red Hat Enterprise Linux (v.5 for Intel64) 32-bit mode	C , en_US.UTF-8

NetCOBOL products have been verified to run with the packages listed in the following tables. The tested release and function for which the package is required are as shown.

Table 1.3. Red Hat Enterprise Linux AS (v.4 for x86)

Package	Tested Release	Required For
kernel	2.6.9-5	Basic NetCOBOL functions
coreutils	5.2.1-31	Basic NetCOBOL functions
bash	3.0-19.2	Basic NetCOBOL functions
tcsh	6.13-9	Basic NetCOBOL functions
glibc	2.3.4-2	Basic NetCOBOL functions
glibc-common	2.3.4-2	Basic NetCOBOL functions
rpm	4.3.3-7_nonptl	Basic NetCOBOL functions
binutils	2.15.92.0.2-10.EL4	Basic NetCOBOL functions
man	1.5o1-9	Reading man manuals
cups	1.1.22-0.rc1.9	Printing forms
httpd	2.0.52-9.ent	Using the www Server
modssl	2.0.52-9	
openssl	0.9.7a-43.1	

Table 1.4. Red Hat Enterprise Linux AS (v.4 for EM64T) Update 4

Package	Tested Release	Required For
kernel	2.6.9-42	Basic NetCOBOL functions
coreutils	5.2.1-31.4	Basic NetCOBOL functions
bash	3.0-19.3	Basic NetCOBOL functions
tcsh	6.13-9	Basic NetCOBOL functions
glibc	2.3.4-2.25	Basic NetCOBOL functions
glibc-common	2.3.4-2.25	Basic NetCOBOL functions
rpm	4.3.3-18_nonptl	Basic NetCOBOL functions
binutils	2.15.92.0.2-21	Basic NetCOBOL functions
man	1.5o1-9.rhel4	Reading man manuals
cups	1.1.22-0.rc1.9.11	Printing forms
httpd	2.0.52-25.ent	Using the www Server
modssl	2.0.52-9	
openssl	0.9.7a-43.10	

Table 1.5. Red Hat Enterprise Linux AS (v.5 for x86) (v.5 for Intel64)

Package	Tested Release	Required For
kernel	2.6.18-8.el5	Basic NetCOBOL functions
coreutils	5.97-12.1.el5	Basic NetCOBOL functions
bash	3.1-16.1	Basic NetCOBOL functions
tcsh	6.14-12.el5	Basic NetCOBOL functions
glibc	2.5-12	Basic NetCOBOL functions
glibc-common	2.5-12	Basic NetCOBOL functions
rpm	4.4.2-37.el5	Basic NetCOBOL functions
binutils	2.17.50.0.6-2.el5	Basic NetCOBOL functions
man	1.6d-1.1	Reading man manuals
cups	1.2.4-11.5.el5	Printing forms
httpd	2.2.3-6.el5	Using the www Server
modssl	2.2.3-6.el5	
openssl	0.9.8b-8.3.el5	

Input and Output Devices

NetCOBOL for Linux supports several input and output devices. Support for storage devices, printers, displays, and keyboards are discussed in this section.

File Output Devices

Magnetic storage devices can be connected to Red Hat Enterprise Linux systems and used with COBOL file systems.

Chapter 2. System Requirements

The disk and memory space required for installation and use of NetCOBOL are shown in Table 2.1 and Table 2.2.

Table 2.1 is an itemization of the disk space required by NetCOBOL for Linux.

Table 2.1. Required Disk Space

Product Name	Size
NetCOBOL Runtime System	7 MB

Table 2.2 lists the memory required to perform certain tasks using NetCOBOL for Linux.

Table 2.2. Required Memory Size

Condition		Minimum Size
Execution	Runtime System	1.0 MB

Chapter 3. Installing NetCOBOL for Linux

Only people who are registered as super users, on systems configured as servers, can install NetCOBOL for Linux and its related packages.

Package Installation

The installation of NetCOBOL for Linux uses the rpm command. Install it after confirming there is enough disk space. For necessary disk space for NetCOBOL for Linux, see Table 2.1 "Required Disk Space."

The standard installation directory is /opt. When the disk space is insufficient for the partition of /opt, it is possible to install it into a different directory structure. However, the symbolic link files are installed at /opt even when installing NetCOBOL for Linux into directories other than /opt.

1. Confirm whether the package has already been installed by the rpm command.

```
# rpm -q FJSVcbr
```

Delete the package by the rpm command if the package has already been installed. For deleting the package, see "Deleting a package".

Note: If your system has a graphical RPM handler, you can use that instead.

2. Install the package using the rpm command.

```
# rpm -U /media/cdrom/LINUX/FJSVcbr-7.3.0-2.0.i486.rpm
```

Use -prefix if you wish to define a directory structure to precede the directory structure of the product.

Note: If your system has a graphical RPM handler, you can use that instead.

Setting Up the User Environment

NetCOBOL for Linux users have several options to select from when configuring their development environment. To specify what paths that libraries, manuals, messages, and other data are to be stored in, follow the examples below for setting the `PATH` and `MANPATH` environment variables.

The examples that are used in this section can be found in the following files:

```
/opt/FJSVcbl/config/cobolrt.sh      (Bourne shell)
/opt/FJSVcbl/config/cobolrt.csh    (C shell)
```

For example, if you are using the C shell (`csh`), you must run:

```
csh
```

and then within the C shell you run:

```
source /opt/FJSVcbl/config/cobolrt.csh
```

to set up the environment.

If you are using the Bourne shell (`sh`), you would run `source` against the `cobolrt.sh` file instead.

The installer creates symbolic links of all files under `/opt/FJSVcbl`. The installation directory, therefore, need not be specified in the environment variables.

Deleting a Package

If you repartition the system, you will have to delete the NetCOBOL for Linux package and reinstall it in a new directory. To delete a package, for this or any other reason, issue the `rpm` command.

```
# rpm -e FJSVcbr
```

Note: If your system has a graphical RPM handler, you can use that instead.