

EXPRESSCLUSTER X SingleServerSafe for Linux

User's Guide (The Rootless Version)

1. Preface

1.1. Who should use this guide

The *EXPRESSCLUSTER X SingleServerSafe for Linux User's Guide (The Rootless Version)* is intended for the following:

- Systems engineers who introduce EXPRESSCLUSTER-based cluster systems
- System administrators who maintain and operate the cluster systems

This guide describes the procedure for setting up EXPRESSCLUSTER X SingleServerSafe for Linux rootless as well as notes and restrictions on it.

The description illuminates the differences between EXPRESSCLUSTER X SingleServerSafe for Linux rootless (hereinafter called "the Rootless Version") and EXPRESSCLUSTER X for Linux (hereinafter called "the Normal Version"). For topics common to the Normal Version, which are not covered by this guide, see its corresponding guides.

1.2. How this guide is organized

- [EXPRESSCLUSTER X SingleServerSafe for Linux User's Guide \(The Rootless Version\)](#)
 - [1. Preface](#)
 - [1.1. Who should use this guide](#)
 - [1.2. How this guide is organized](#)
 - [1.3. Conventions](#)
 - [1.4. Contacting NEC](#)
 - [2. Setup](#)
 - [2.1. Overview of the Rootless Version](#)
 - [2.2. Setup procedure](#)
 - [3. Notes and restrictions](#)
 - [4. Legal notice](#)

- [4.1. Disclaimer](#)
- [4.2. Trademark information](#)

1.3. Conventions

The following conventions are used in this guide.

Convention	Usage	Example
Bold	Indicates the names of graphical objects (e.g., menu and setting items).	Click Start . Heartbeat timeout
Code block, inline code	Indicates path names, command lines, system output (e.g., messages, prompts), directory names, and file names.	<code>\$ python</code> <code>/opt/nec/clusterpro</code>
Square brackets in a command line	Indicates that the value specified inside the brackets can be omitted.	<code>\$ python [--version]</code>

1.4. Contacting NEC

For the latest product information, visit our website below:

<https://www.nec.com/global/prod/expresscluster/>

2. Setup

2.1. Overview of the Rootless Version

For the Normal Version, all the relevant processes to control cluster are run by a root user, who are required to execute commands. For the Rootless Version, they are run not by the root user but by a normal user, who can execute most commands.

When the Rootless Version is installed with its rpm package, the following group and normal user are created:

- clpadm group
- clpadm user

The clpadm group and clpadm user are used as the group and user to run EXPRESSCLUSTER-related processes. When using the clpadm user to, for example, execute cluster commands, you can set a password for the clpadm user as a login user.

Uninstalling the Rootless Version deletes the clpadm group and clpadm user.

The following shows package files of the Rootless Version:

File name	Description
clusterprosss-rtl-<version>.x86_64.rpm	Package of the Rootless Version (Japanese)
expressclssss-rtl-<version>.x86_64.rpm	Package of the Rootless Version (English)

2.2. Setup procedure

This section briefly explains the procedure for installing a package of the Rootless Version and configuring a cluster. For details, see the *EXPRESSCLUSTER X SingleServerSafe for Linux Installation Guide*.

1. As a root user, execute the `rpm` command to install a package of the Rootless Version.

```
# rpm -ivh <path to a package file of the Rootless Version> [--prefix <install path>]
```

2. As the root user, execute the `passwd` command to set a password for the clpadm user.

```
# passwd clpadm
```

3. For a configuration with SELinux:Enforcing: As the root user, execute the `clpselctrl` command to add SELinux rules.

```
# clpselctrl --add
```

4. As the root user, execute the `clplcncs` command to register the license. (The detailed registration command line is omitted because it varies according to the license type.)

```
# clplcncs ...(omitted)...
```

5. As the root user, restart the OS.

```
# systemctl reboot
```

6. As the root user, check that EXPRESSCLUSTER-related processes are run by the clpadm user.

```
# ps aux|grep clp|grep -v grep
clpadm      1271  0.0  0.0 14944 2440 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      1272  0.1  0.1 17292 4608 ?        S    13:46   0:00 clpevent
clpadm      1768  0.0  0.0 14916 2700 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      1769  0.0  0.2 295332 9500 ?       Sl   13:46   0:00 clpnm
clpadm      1803  0.0  0.1 146400 4608 ?       S<L  13:46   0:00 clplanhb
clpadm      1872  0.0  0.0 15200 2904 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      1873  0.0  0.2 566696 10524 ?      Sl   13:46   0:00 clptrnsv
clpadm      2214  0.0  0.0 14936 2564 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      2218  0.6  0.4 334000 16332 ?      Sl   13:46   0:01 clpibsv
clpadm      2250  0.0  0.1 119492 5376 ?       SsL  13:46   0:00 /opt/nec/cl
clpadm      2259  0.0  0.2 334844 8576 ?        Sl   13:46   0:00 clprc
clpadm      2260  0.0  0.1 14932 4480 ?        S    13:46   0:00 clpmonpm
clpadm      2358  0.0  0.2 402736 7808 ?        Sl   13:46   0:00 clprm
clpadm      2362  0.0  0.0 15088 2892 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      2363  0.5  0.3 309460 14168 ?      Sl   13:46   0:00 clpwebmc "-
clpadm      2364  0.0  0.0 14964 2536 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      2389  0.0  0.1 22172 4932 ?       SLs  13:46   0:00 /opt/nec/cl
clpadm      2446  0.0  0.0 14956 2572 ?        Ss   13:46   0:00 ./clpmonp -
clpadm      2447  0.0  0.1 19500 7092 ?        Sl   13:46   0:00 clpaltd
clpadm      2503  0.0  0.1 41652 4736 ?       S<   13:47   0:00 clpuserw --
root        2515  0.0  0.0      0      0 ?        S    13:47   0:00 [clpka]
```

7. Following the description in the *EXPRESSCLUSTER X SingleServerSafe for Linux Configuration Guide*, configure a cluster.

8. Following the description in the *EXPRESSCLUSTER X SingleServerSafe for Linux Configuration Guide*, check the operation of the cluster.

3. Notes and restrictions

- The following features are not supported:
 - EXPRESSCLUSTER X Database Agent
 - EXPRESSCLUSTER X Internet Server Agent
 - EXPRESSCLUSTER X Application Server Agent
 - EXPRESSCLUSTER X File Server Agent

- EXPRESSCLUSTER X Java Resource Agent
- EXPRESSCLUSTER X System Resource Agent
- The following commands can be executed not by normal users (clpadm) but by root users:
 - `clplcncsc` command
 - `clpfwctrl.sh` command
 - `clpselctrl.sh` command
 - `clpsvcctrl.sh` command
- For a normal user to control cluster, Linux Capabilities and `sudo` command are available.
- Do not delete a clpadm group or a clpadm user.
- Do not edit or delete `/etc/sudoers.d/clpadm`.
- You cannot update a rpm package from the Normal Version to the Rootless Version.

4. Legal notice

4.1. Disclaimer

- The information in this document is subject to change without notice.
- No part of this document may be reproduced or transmitted in any form by any means, electronic or mechanical, for any purpose, without the express written permission of NEC Corporation.

4.2. Trademark information

- EXPRESSCLUSTER is a registered trademark of NEC Corporation.
- Linux is a registered trademark of Linus Torvalds in the United States and other countries.
- Other product names and slogans written in this guide are trademarks or registered trademarks of their respective companies.