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Rocky Enterprise Linux 9.2 Manual Pages on command 'pkexec.1'

\$ man pkexec.1

PKEXEC(1) pkexec PKEXEC(1)

NAME

pkexec - Execute a command as another user

SYNOPSIS

pkexec [--version] [--disable-internal-agent] [--help]

pkexec [--user username] PROGRAM [ARGUMENTS...]

DESCRIPTION

pkexec allows an authorized user to execute PROGRAM as another user. If PROGRAM is not specified, the default shell will be run. If username is not specified, then the program will be executed as the administrative super user, root.

RETURN VALUE

Upon successful completion, the return value is the return value of PROGRAM. If the calling process is not authorized or an authorization could not be obtained through authentication or an error occurred, pkexec exits with a return value of 127. If the authorization could not be obtained because the user dismissed the authentication dialog, pkexec exits with a return value of 126.

AUTHENTICATION AGENT

pkexec, like any other polkit application, will use the authentication agent registered for the calling process or session. However, if no authentication agent is available, then pkexec will register its own textual authentication agent. This behavior can be turned off by passing the `--disable-internal-agent` option.

SECURITY NOTES

Executing a program as another user is a privileged operation. By default the action to check for (see the section called `?ACTION AND AUTHORIZATIONS?`) requires administrator authentication. In addition, the authentication dialog presented to the user will display the full path to the program to be executed so the user is aware of what will happen.

The environment that PROGRAM will run it, will be set to a minimal known and safe environment in order to avoid injecting code through `LD_LIBRARY_PATH` or similar mechanisms. In addition the `PKEXEC_UID` environment variable is set to the user id of the process invoking pkexec. As a result, pkexec will not by default allow you to run X11 applications as another user since the `$DISPLAY` and `$XAUTHORITY` environment variables are not set. These two variables will be retained if the `org.freedesktop.policykit.exec.allow_gui` annotation on an action is set to a nonempty value; this is discouraged, though, and should only be used for legacy programs.

Note that pkexec does no validation of the ARGUMENTS passed to PROGRAM.

In the normal case (where administrator authentication is required every time pkexec is used), this is not a problem since if the user is an administrator he might as well just run `pkexec bash` to get root.

However, if an action is used for which the user can retain authorization (or if the user is implicitly authorized) this could be a security hole. Therefore, as a rule of thumb, programs for which the default required authorization is changed, should never implicitly trust user input (e.g. like any other well-written `suid` program).

ACTION AND AUTHORIZATIONS

By default, the `org.freedesktop.policykit.exec` action is used. To use another action, use the `org.freedesktop.policykit.exec.path` annotation on an action with the value set to the full path of the program. In addition to specifying the program, the authentication message, description, icon and defaults can be specified. If the `org.freedesktop.policykit.exec.argv1` annotation is present, the action will only be picked if the first argument to the program matches the value of the annotation.

Note that authentication messages may reference variables (see the section called `?VARIABLES?`), for example `$(user)` will be expanded to the value of the user variable.

WRAPPER USAGE

To avoid modifying existing software to prefix their command-line invocations with `pkexec`, it's possible to use `pkexec` in a she-bang wrapper[1] like this:

```
#!/usr/bin/pkexec /usr/bin/python
import os
import sys
print "Hello, I'm running as uid %d"%(os.getuid())
for n in range(len(sys.argv)):
    print "arg[%d]='%s'"%(n, sys.argv[n])
```

If this script is installed into `/usr/bin/my-pk-test`, then the following annotations

```
[...]
<annotate key="org.freedesktop.policykit.exec.path">/usr/bin/python</annotate>
<annotate key="org.freedesktop.policykit.exec.argv1">/usr/bin/my-pk-test</annotate>
[...]
```

can be used to select the appropriate polkit action. Be careful to get the latter annotation right, otherwise it will match any `pkexec` invocation of `/usr/bin/python` scripts.

VARIABLES

The following variables are set by `pkexec`. They can be used in authorization rules and messages shown in authentication dialogs:

program

Fully qualified path to the program to be executed. Example:

?/bin/cat?

command_line

The requested command-line (do not use this for any security checks, it is not secure). Example: ?cat /srv/xyz/foobar?

user

The user name of the user to execute the program as. Example:

?davidz?

user.gecos

The full name of the user to execute the program as. Example:

?David Zeuthen?

user.display

A representation of the user to execute the program as that is suitable for display in an authentication dialog. Is typically set to a combination of the user name and the full name. Example:

?David Zeuthen (davidz)?

AUTHOR

Written by David Zeuthen <davidz@redhat.com> with a lot of help from many others.

BUGS

Please send bug reports to either the distribution or the polkit-devel mailing list, see the link

<http://lists.freedesktop.org/mailman/listinfo/polkit-devel> on how to subscribe.

SEE ALSO

polkit(8), polkitd(8), pkaction(1), pkcheck(1), pkttysagent(1)

NOTES

1. she-bang wrapper

[http://en.wikipedia.org/wiki/Shebang_\(Unix\)](http://en.wikipedia.org/wiki/Shebang_(Unix))

polkit

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