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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'tpm2_evictcontrol.1' command

\$ man tpm2_evictcontrol.1

tpm2_evictcontrol(1) General Commands Manual tpm2_evictcontrol(1)

NAME

tpm2_evictcontrol(1) - Make a transient object persistent or evict a persistent object.

SYNOPSIS

tpm2_evictcontrol [OPTIONS] [ARGUMENT]

DESCRIPTION

tpm2_evictcontrol(1) - Allows a transient object to be made persistent or a persistent object to be evicted. The HANDLE argument controls the index the handle will be assigned to. If the object specified via -c is transient, and a permanent HANDLE is specified, the object will be persisted at HANDLE. If HANDLE is a -, then the object will be persisted at the first available permanent handle location. If the object specified via -c is a permanent handle, then the object will be evicted from its permanent handle location.

OPTIONS

? -C, --hierarchy=OBJECT:

The authorization hierarchy used to authorize the commands. Defaults to the ?owner? hierarchy. Supported options are:

? o for TPM_RH_OWNER

? p for TPM_RH_PLATFORM

? <num> where a raw number can be used.

? -c, --object-context=OBJECT:

A context object specifier of a transient or persistent object. If OBJECT is a transient object it will be persisted, either to the handle specified by the argument or to first available vacant persistent handle. If the OBJECT is for a persistent object, then the object will be evicted from non-volatile memory.

? -P, --auth=AUTH:

The authorization value for the hierarchy specified with -C.

? -o, --output=FILE:

Optionally output a serialized object representing the persistent handle. If untampered, these files are safer to use than raw persistent handles. A raw persistent handle should be verified that the object it points to is as expected.

? --cphash=FILE

File path to record the hash of the command parameters. This is commonly termed as cpHash. NOTE: When this option is selected, The tool will not actually execute the command, it simply returns a cpHash.

? ARGUMENT the command line argument specifies the persistent handle to save the transient object to.

Output

The tool outputs a YAML compliant dictionary with the fields: persistent-handle: action: evicted|persisted

Where persistent-handle is the handle the action occurred to. Where action can either be one of evicted or persisted. If an object is evicted then the object is no longer resident at the persistent-handle address within the TPM. If an object is persisted then the object is resident at the persistent-handle address within the TPM.

References

Context Object Format

The type of a context object, whether it is a handle or file name, is determined according to the following logic in-order:

? If the argument is a file path, then the file is loaded as a restored TPM transient object.

? If the argument is a prefix match on one of:

? owner: the owner hierarchy

? platform: the platform hierarchy

? endorsement: the endorsement hierarchy

? lockout: the lockout control persistent object

? If the argument can be loaded as a number it will be treated as a handle, e.g. 0x81010013 and used directly._OBJECT_.

Authorization Formatting

Authorization for use of an object in TPM2.0 can come in 3 different forms: 1. Password 2. HMAC 3. Sessions

NOTE: ?Authorizations default to the EMPTY PASSWORD when not specified?.

Passwords

Passwords are interpreted in the following forms below using prefix identifiers.

Note: By default passwords are assumed to be in the string form when they do not have a prefix.

String

A string password, specified by prefix ?str:? or its absence (raw string without prefix) is not interpreted, and is directly used for authorization.

Examples

foobar

str:foobar

Hex-string

A hex-string password, specified by prefix ?hex:? is converted from a hexadecimal form into a byte array form, thus allowing passwords with non-printable and/or terminal un-friendly characters.

Example

hex:0x1122334455667788

File

A file based password, specified by prefix ?file:? should be the path of a file containing the password to be read by the tool or a ?-? to use stdin. Storing passwords in files prevents information leakage,

passwords passed as options can be read from the process list or common shell history features.

Examples

```
# to use stdin and be prompted
```

```
file:-
```

```
# to use a file from a path
```

```
file:path/to/password/file
```

```
# to echo a password via stdin:
```

```
echo foobar | tpm2_tool -p file:-
```

```
# to use a bash here-string via stdin:
```

```
tpm2_tool -p file:- <<< foobar
```

Sessions

When using a policy session to authorize the use of an object, prefix the option argument with the session keyword. Then indicate a path to a session file that was created with `tpm2_startauthsession(1)`. Option? ally, if the session requires an auth value to be sent with the session handle (eg policy password), then append a + and a string as described in the Passwords section.

Examples

To use a session context file called `session.ctx`.

```
session:session.ctx
```

To use a session context file called `session.ctx` AND send the authvalue `mypassword`.

```
session:session.ctx+mypassword
```

To use a session context file called `session.ctx` AND send the HEX auth? value `0x11223344`.

```
session:session.ctx+hex:11223344
```

PCR Authorizations

You can satisfy a PCR policy using the `?pcr:?` prefix and the PCR mini? language. The PCR minilanguage is as follows:

```
<pcr-spec>=<raw-pcr-file>
```

The PCR spec is documented in in the section `?PCR bank specifiers?`.

The `raw-pcr-file` is an optional argument that contains the output of

the raw PCR contents as returned by `tpm2_pcrread(1)`.

PCR bank specifiers (`pcr.md`)

Examples

To satisfy a PCR policy of sha256 on banks 0, 1, 2 and 3 use a specifi?

er of:

```
pcr:sha256:0,1,2,3
```

specifying AUTH.

COMMON OPTIONS

This collection of options are common to many programs and provide in?formation that many users may expect.

? -h, --help=[man|no-man]: Display the tools manpage. By default, it attempts to invoke the manpager for the tool, however, on failure will output a short tool summary. This is the same behavior if the ?man? option argument is specified, however if explicit ?man? is requested, the tool will provide errors from man on stderr. If the ?no-man? option if specified, or the manpager fails, the short op?tions will be output to stdout.

To successfully use the manpages feature requires the manpages to be installed or on MANPATH, See `man(1)` for more details.

? -v, --version: Display version information for this tool, supported tctis and exit.

? -V, --verbose: Increase the information that the tool prints to the console during its execution. When using this option the file and line number are printed.

? -Q, --quiet: Silence normal tool output to stdout.

? -Z, --enable-errata: Enable the application of errata fixups. Useful if an errata fixup needs to be applied to commands sent to the TPM.

Defining the environment `TPM2TOOLS_ENABLE_ERRATA` is equivalent. in?formation many users may expect.

TCTI Configuration

The TCTI or ?Transmission Interface? is the communication mechanism with the TPM. TCTIs can be changed for communication with TPMs across different mediums.

To control the TCTI, the tools respect:

1. The command line option -T or --tcti
2. The environment variable: TPM2TOOLS_TCTI.

Note: The command line option always overrides the environment variable.

The current known TCTIs are:

? tabrmd - The resource manager, called tabrmd (<https://github.com/tpm2-software/tpm2-abrmd>). Note that tabrmd and abrmd as a tcti name are synonymous.

? mssim - Typically used for communicating to the TPM software simulator.

? device - Used when talking directly to a TPM device file.

? none - Do not initialize a connection with the TPM. Some tools allow for off-tpm options and thus support not using a TCTI. Tools that do not support it will error when attempted to be used without a TCTI connection. Does not support ANY options and MUST BE presented as the exact text of ?none?.

The arguments to either the command line option or the environment variable are in the form:

<tcti-name>:<tcti-option-config>

Specifying an empty string for either the <tcti-name> or <tcti-option-config> results in the default being used for that portion respectively.

TCTI Defaults

When a TCTI is not specified, the default TCTI is searched for using dlopen(3) semantics. The tools will search for tabrmd, device and mssim TCTIs IN THAT ORDER and USE THE FIRST ONE FOUND. You can query what TCTI will be chosen as the default by using the -v option to print the version information. The ?default-tcti? key-value pair will indicate which of the aforementioned TCTIs is the default.

Custom TCTIs

Any TCTI that implements the dynamic TCTI interface can be loaded. The tools internally use dlopen(3), and the raw tcti-name value is used for

the lookup. Thus, this could be a path to the shared library, or a library name as understood by `dlopen(3)` semantics.

TCTI OPTIONS

This collection of options are used to configure the various known TCTI modules available:

? device: For the device TCTI, the TPM character device file for use by the device TCTI can be specified. The default is `/dev/tpm0`.

Example: `-T device:/dev/tpm0` or `export TPM2TOOLS_TCTI=device:/dev/tpm0`

? mssim: For the mssim TCTI, the domain name or IP address and port number used by the simulator can be specified. The default are `127.0.0.1` and `2321`.

Example: `-T mssim:host=localhost,port=2321` or `export TPM2TOOLS_TCTI=mssim:host=localhost,port=2321`

? abrmd: For the abrmd TCTI, the configuration string format is a series of simple key value pairs separated by a ``,'` character. Each key and value string are separated by a ``='` character.

? TCTI abrmd supports two keys:

1. ``bus_name'`: The name of the `tabrmd` service on the bus (a string).
2. ``bus_type'`: The type of the `dbus` instance (a string) limited to ``session'` and ``system'`.

Specify the `tabrmd` tcti name and a config string of `bus_name=com.example.FooBar`:

```
\--tcti=tabrmd:bus_name=com.example.FooBar
```

Specify the default (`abrmd`) tcti and a config string of `bus_type=session`:

```
\--tcti:bus_type=session
```

NOTE: `abrmd` and `tabrmd` are synonymous. the various known TCTI modules.

EXAMPLES

To make a transient handle persistent at address `0x81010002`

```
tpm2_changeauth -c o ownerauth
```

```
tpm2_createprimary -c primary.ctx -P ownerauth
```

```
tpm2_evictcontrol -C o -c primary.ctx 0x81010002 -P ownerauth
```

To evict a persistent handle

```
tpm2_evictcontrol -C o -c 0x81010002 -P ownerauth
```

To make a transient handle persistent and output a serialized persistent handle.

```
tpm2_evictcontrol -C o -c primary.ctx -o primary.handle -P ownerauth
```

Returns

Tools can return any of the following codes:

? 0 - Success.

? 1 - General non-specific error.

? 2 - Options handling error.

? 3 - Authentication error.

? 4 - TCTI related error.

? 5 - Non supported scheme. Applicable to tpm2_testparams.

BUGS

Github Issues (<https://github.com/tpm2-software/tpm2-tools/issues>)

HELP

See the Mailing List (<https://lists.01.org/mailman/listinfo/tpm2>)

tpm2-tools

tpm2_evictcontrol(1)