Red Hat Enterprise Linux Release 9.2 Manual Pages on 'nm-settings-keyfile.5' command

$ man nm-settings-keyfile.5

NM-SETTINGS-KEYFILE(5)   Configuration   NM-SETTINGS-KEYFILE(5)

NAME

   nm-settings-keyfile - Description of keyfile settings plugin

DESCRIPTION

   NetworkManager is based on the concept of connection profiles that

   contain network configuration (see nm-settings(5) for details). The

   profiles can be stored in various formats. NetworkManager uses plugins

   for reading and writing the data. The plugins can be configured in

   NetworkManager.conf(5).

   The keyfile plugin is the generic plugin that supports all the

   connection types and capabilities that NetworkManager has. The files

   are in a .ini-style format and located in

   /etc/NetworkManager/system-connections/,

   /usr/lib/NetworkManager/system-connections/ and

   /run/NetworkManager/system-connections/. This plugin is always enabled

   and will automatically be used to store any connections that are not

   supported by any other active plugin. For security, it will ignore

   files that are readable or writable by any user other than 'root' since

   private keys and passphrases may be stored in plaintext inside the

   file.

FILE FORMAT

   The keyfile config format is a simple .ini-style format. It consists of

   sections (groups) of key-value pairs. Each section corresponds to a

setting name as described in the settings specification (nm-settings(5)). Each configuration key/value pair in the section is one of the properties listed in the settings specification. The majority of properties of the specification is written in the same format into the keyfile too. However some values are inconvenient for people to use. These are stored in the files in more readable ways. These properties are described below. An example could be IP addresses that are not written as integer arrays, but more reasonably as "1.2.3.4/12 1.2.3.254". More information of the generic key file format can be found at GLib key file format[1] (Lines beginning with a '#' are comments, lists are separated by character ; etc.).

Users can create or modify the keyfile connection files manually, even if that is not the recommended way of managing the profiles. However, if they choose to do that, they must inform NetworkManager about their changes (for example via nmcli con (re)load).

Examples of keyfile configuration.

A sample configuration for an ethernet network:

[connection]
id=Main eth0
uuid=27afa607-ee36-43f0-b8c3-9d245cdc4bb3
type=802-3-ethernet
autoconnect=true
[ipv4]
method=auto
[802-3-ethernet]
mac-address=00:23:5a:47:1f:71

A sample configuration for WPA-EAP (PEAP with MSCHAPv2) and always-ask secret:

[connection]
id=CompanyWIFI
uuid=cdac6154-a33b-4b15-9904-666772cfa5ee
type=wifi
autoconnect=false
[wifi]

```
ssid=CorpWLAN

mode=infrastructure

security=802-11-wireless-security

[wifi-security]

key-mgmt=wpa-eap

[ipv4]

method=auto

[ipv6]

method=auto

[802-1x]

eap=peap;

identity=joe

ca-cert=/home/joe/.cert/corp.crt

phase1-peapver=1

phase2-auth=mschapv2

password-flags=2
```

A sample configuration for openvpn:

```
[connection]

id=RedHat-openvpn

uuid=7f9b3356-b210-4c0e-8123-bd116c9c280f

type=vpn

timestamp=1385401165

[vpn]

service-type=org.freedesktop.NetworkManager.openvpn

connection-type=password

password-flags=3

remote=ovpn.my-company.com

cipher=AES-256-CBC

reneg-seconds=0

port=443

username=joe

ca=/etc/openvpn/ISCA.pem

tls-remote=ovpn.my-company.com
```

```
[ipv6]

method=auto

[ipv4]

method=auto

ignore-auto-dns=true

never-default=true
```

A sample configuration for a bridge and a bridge port:

```
[connection]                          [connection]

id=MainBridge                         id=br-port-1

uuid=171ae855-a0ab-42b6-bd0c-60f5812eea9d    uuid=d6e8ae98-71f8-4b3d-9d2d-2e26048fe794

interface-name=MainBridge             interface-name=em1

type=bridge                           type=ethernet

                                      master=MainBridge

[bridge]                              slave-type=bridge

interface-name=MainBridge
```

A sample configuration for a VLAN:

```
[connection]

id=VLAN for building 4A

uuid=8ce1c9e0-ce7a-4d2c-aa28-077dda09dd7e

interface-name=VLAN-4A

type=vlan

[vlan]

interface-name=VLAN-4A

parent=eth0

id=4
```

DETAILS

keyfile plugin variables for the majority of NetworkManager properties
have one-to-one mapping. It means a NetworkManager property is stored
in the keyfile as a variable of the same name and in the same format.
There are several exceptions to this rule, mainly for making keyfile
syntax easier for humans. The exceptions handled specially by keyfile
plugin are listed below. Refer to nm-settings(5) for all available
settings and properties and their description.

Name aliases. Some of the NetworkManager setting names are somewhat hard to type or remember. Therefore keyfile introduces aliases that can be used instead of the names.

```
setting name            keyfile alias
802-3-ethernet        =  ethernet
802-11-wireless       =  wifi
802-11-wireless-security  =  wifi-security
```

Table 1. 802-11-wireless setting (section)

???
???????

| ?Property | ? Keyfile Variable | ? Format | ? Description | ? |

???
???????

?ssid	?	? string (or	? SSID of Wi-Fi	?
?	?	? decimal-byte	? network.	?
?	?	? list - obsolete)	?	?
?	?	?	? Example:	?
?	?	?	? ssid=Quick Net	?

???
???????

?mac-address	?	? usual	? MAC address in	?
?	?	? hex-digits-and-colons	? traditional	?
?	?	? notation	? hex-digits-and-colons	?
?	?	?	? notation (e.g.	?
?	?	?	? 00:22:68:12:79:A2),	?
?	?	?	? or semicolon	?
?	?	?	? separated list	?
?	?	?	? of 6 bytes	?
?	?	?	? (obsolete) (e.g.	?
?	?	?	? 0;34;104;18;121;162).	?

Property	Keyfile Variable	Format	Description
cloned-mac-address		usual hex-digits-and-colons notation	Cloned MAC address in traditional hex-digits-and-colons notation (e.g. 00:22:68:12:79:B2), or semicolon separated list of 6 bytes (obsolete) (e.g. 0;34;104;18;121;178).
mac-address-blacklist		list of MACs (separated with semicolons)	MAC address blacklist. Example: mac-address-blacklist= 00:22:68:12:79:A6;00:22:68:12:79:78

Table 2. 802-3-ethernet setting (section)

Property	Keyfile Variable	Format	Description

?mac-address	?	? usual	? MAC address in	?
?	?	? hex-digits-and-colons	? traditional	?
?	?	? notation	? hex-digits-and-colons	?
?	?	?	? notation (e.g.	?
?	?	?	? 00:22:68:12:79:A2),	?
?	?	?	? or semicolon	?
?	?	?	? separated list	?
?	?	?	? of 6 bytes	?
?	?	?	? (obsolete) (e.g.	?
?	?	?	? 0;34;104;18;121;162)	?

???
???????

?cloned-mac-address	?	? usual	? Cloned MAC address in	?
?	?	? hex-digits-and-colons	? traditional	?
?	?	? notation	? hex-digits-and-colons	?
?	?	?	? notation (e.g.	?
?	?	?	? 00:22:68:12:79:B2),	?
?	?	?	? or semicolon	?
?	?	?	? separated list of 6	?
?	?	?	? bytes (obsolete)	?
?	?	?	? (e.g.	?
?	?	?	? 0;34;104;18;121;178).	?

???
???????

?mac-address-blacklist	?	? list of MACs	? MAC address	?
?	?	? (separated with	? blacklist.	?
?	?	? semicolons)	?	?
?	?	?	? Example:	?
?	?	?	? mac-address-blacklist=	?
?	?	?	? 00:22:68:12:79:A6;00:22:68:12:79:78	?

Table 3. bridge setting (section)

Property	Keyfile Variable	Format	Description
mac-address		usual hex-digits-and-colons notation	MAC address in traditional hex-digits-and-colons notation, or semicolon separated list of 6 decimal bytes (obsolete)
			Example:
			mac-address=00:22:68:12:79:A2
			mac-address=0;34;104;18;121;162;

Table 4. infiniband setting (section)

Property	Keyfile Variable	Format	Description
mac-address		usual hex-digits-and-colons notation	MAC address in traditional hex-digits-and-colons notation, or or semicolon separated list

?	?	?	? of 20 decimal	?
?	?	?	? bytes (obsolete)	?
?	?	?	?	?
?	?	?	? Example:	?
?	?	?	? mac-address=	?
?	?	?	? 80:00:00:6d:fe:80:00:00:00:00:00:00:00:02:55:00:70:33:cf:01 ?

??
????????????????????????

Table 5. ipv4 setting (section)

Property	Keyfile Variable	Format	Description
dns		list of DNS IP addresses	List of DNS servers.
			Example:
			dns=1.2.3.4;8.8.8.8;8.8.4.4;
addresses	address1, address2, ...	address/plen	List of static IP addresses.
			Example:
			address1=192.168.100.100/24
			address2=10.1.1.5/24
gateway	gateway	string	Gateway IP addresses as a string.
			Example:
			gateway=192.168.100.1
routes	route1, route2, ...	route/plen[,gateway,metric]	List of IP routes.

			Example:	
			route1=8.8.8.0/24,10.1.1.1,77	
			route2=7.7.0.0/16	

Table 6. ipv6 setting (section)

Property	Keyfile Variable	Format	Description	
dns		list of DNS IP addresses	List of DNS servers.	
			Example:	
			dns=2001:4860:4860::8888;2001:4860:4860::8844;	
addresses	address1, address2, ...	address/plen	List of static IP addresses.	
			Example: address1=abbe::cafe/96	
			address2=2001::1234	
gateway	gateway	string	Gateway IP addresses as a string.	
			Example: gateway=abbe::1	

routes	route1, route2, ...	route/plen[,gateway,metric]	List of IP routes.
			Example:
			route1=2001:4860:4860::/64,2620:52:0:2219:222:68ff:fe11:5403

Table 7. serial setting (section)

Property	Keyfile Variable	Format	Description
parity		'e', 'o', or 'n'	The connection parity; even, odd, or none. Note that older versions of NetworkManager stored this as an integer: 69 ('E') for even, 111 ('o') for odd, or 110 ('n') for none. Example: parity=n

Table 8. vpn setting (section)

Property	Keyfile Variable	Format	Description
data	separate variables named		The keys of the data dictionary

	after keys of	are used as
	the dictionary	variable names
		directly under
		[vpn] section.
		Example:
		remote=ovpn.corp.com
		cipher=AES-256-CBC
		username=joe

secrets	separate		The keys of the
	variables named		secrets dictionary
	after keys of		are used as variable
	the dictionary		names directly under
			[vpn-secrets]
			section.
			Example:
			password=Popocatepetl

Table 9. wifi-p2p setting (section)

Property	Keyfile Variable	Format	Description
peer		usual hex-digits-and-colons notation	MAC address in traditional hex-digits-and-colons notation (e.g. 00:22:68:12:79:A2), or semicolon separated list of 6 bytes (obsolete) (e.g.

? ? ? ? 0;34;104;18;121;162). ?

???

Table 10. wpan setting (section)

???

?Property	? Keyfile Variable	? Format	? Description	?
?mac-address ?	?	? usual	? MAC address in	?
? ?	?	? hex-digits-and-colons	? hex-digits-and-colons	?
? ?	?	? notation	? notation (e.g.	?
? ?	?	?	? 76:d8:9b:87:66:60:84:ee).	?

???

Secret flags

Each secret property in a NetworkManager setting has an associated

flags property that describes how to handle that secret. In the keyfile

plugin, the value of -flags variable is a decimal number (0 - 7)

defined as a sum of the following values:

? 0 - (NM owned) - the system is responsible for providing and

   storing this secret.

? 1 - (agent-owned) - a user-session secret agent is responsible for

   providing and storing this secret; when it is required, agents will

   be asked to provide it.

? 2 - (not-saved) - this secret should not be saved but should be

   requested from the user each time it is required.

? 4 - (not-required) - in some situations it cannot be automatically

   determined that a secret is required or not. This flag hints that

   the secret is not required and should not be requested from the

   user.

FILES

/etc/NetworkManager/system-connections/*

SEE ALSO

nm-settings(5), nm-settings-ifcfg-rh(5), NetworkManager(8),

NetworkManager.conf(5), nmcli(1), nmcli-examples(7)

NOTES

1. GLib key file format

   https://developer.gnome.org/glib/stable/glib-Key-value-file-parser.html#glib-Key-value-file-parser.description

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