Freeradius telepítése RHEL/Almalinux 9 (x86_64) rendszeren

Előkészítés

Kiindulásként AlmaLinux 9 (x86_64) operációs rendszer telepítését kell elvégezni. A telepítés minimal telepítés.

Telepítést követő lépések

Módosítani kell a /etc/dnf/dnf.conf állományt a felesleges gyenge függőségek telepítésének tiltásához:

```
# if [ ! -f /etc/dnf/dnf.conf.orig ] ; then cp -a /etc/dnf/dnf.conf
/etc/dnf/dnf.conf.orig && echo 'install_weak_deps=False' >>
/etc/dnf/dnf.conf ; fi
```

Érdemes kikapcsolni a kernel üzenetek megjelenítését

```
# grubby --update-kernel=ALL --args=quiet
```

A SElinux-ot átmenetileg megengedő módba kell kapcsolni

```
# sed -i 's/^SELINUX=.*/SELINUX=permissive/' /etc/selinux/config
```

Be kell állítani a rendszer locale-t en_US.UTF-8-ra

```
# localectl
```

Listázzuk az elérhető csomagokat

```
# dnf list freeradius*
Last metadata expiration check: 1:14:21 ago on Mon 08 Sep 2025 07:24:49 PM
CEST.
Available Packages
freeradius.x86_64
3.0.21-44.el9_6
appstream
freeradius-devel.x86_64
3.0.21-44.el9_6
appstream
freeradius-doc.x86_64
3.0.21-44.el9_6
appstream
freeradius-krb5.x86_64
```

```
3.0.21-44.el9_6
appstream
freeradius-ldap.x86_64
3.0.21-44.el9_6
appstream
freeradius-utils.x86_64
3.0.21-44.el9_6
appstream
```

Telepítsük a szükséges csomagokat

```
# dnf install freeradius freeradius-utils
```

Futtassuk a radiusd programot debug módban ahol az alábbi hibát kapjuk

```
   tls-config tls-common {
    verify_depth = 0
    ca_path = "/etc/raddb/certs"
    pem_file_type = yes
    private_key_file = "/etc/raddb/certs/server.pem"
Unable to check file "/etc/raddb/certs/server.pem": No such file or
directory
/etc/raddb/mods-enabled/eap[183]: Failed parsing configuration item
"private_key_file"
rlm_eap_tls: Failed initializing SSL context
rlm_eap (EAP): Failed to initialise rlm_eap_tls
/etc/raddb/mods-enabled/eap[14]: Instantiation failed for module "eap"
```

Inicializáljuk a tanúsítványokat

```
# cd /etc/raddb/certs

# make ca.pem
make[1]: Entering directory '/etc/raddb/certs'
make[1]: Leaving directory '/etc/raddb/certs'
make[1]: Entering directory '/etc/raddb/certs'
make[1]: Leaving directory '/etc/raddb/certs'
openssl req -new -x509 -keyout ca.key -out ca.pem \
    -days '60' -config ./ca.cnf \
    -passin pass:'whatever' -passout pass:'whatever' -noenc
.+.......+...+......+..+++++++++++++++++++++++++++++++++++++++*..+...+.+...+
.....+...+...+......+.+...+++++++++++++++++++++++++++++++++++++++*..+...+...
.++++++
...+..........+......+.........+...+...+.....++++++++++++++++++++++++++++++
++++++++*.......+.............+.+.....+.+..++++++++++++++++++++++++++++++++
+++++++*........+...+...+............+...+..............+.............+.....
...+...+....+..+.........+............+...+......+...............+.+.....+..
..........+..+..................+...+...+.....+...+.+.........+......+....
.+...+.+.....+.+...........+...+......+.+...+..............+.......+.....+..
.+.......+.........+......+......++++++
-----
```

```
chmod g+r ca.key
chown root:radiusd ca.*
chmod 640 ca.*

# make server.pem
openssl req -new  -out server.csr -keyout server.key -config ./server.cnf -
noenc
.+.....................+.....+..+.......+.....+.+.....+.......+.....+.+...
........+....+.....+.+.........+.....+......+...+.+.....+.........+......+..
..+++++++++++++++++++++++++++++++++++++*.+............+........+.......+..
+....+...........+.+++++++++++++++++++++++++++++++++++*........+........
.....+..+...+.......+..+..........+...+..+....+.....++++++
.....+...+.....+............+.....+++++++++++++++++++++++++++++++++++*.
.+......+...........+..............+......+....+......++++++++++++++++++++
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..........+...+...+...+.+...+...+...+.........+..+..........+.....+....+..+.
............+...........+.........+......+.........+......+...+.........+..
.+...+.........+.....+..................++++++
-----
chmod g+r server.key
openssl ca -batch -keyfile ca.key -cert ca.pem -in server.csr  -key
'whatever' -out server.crt -extensions xpserver_ext -extfile xpextensions -
config ./server.cnf
Using configuration from ./server.cnf
Check that the request matches the signature
Signature ok
Certificate Details:
        Serial Number: 1 (0x1)
        Validity
            Not Before: Sep  8 19:11:33 2025 GMT
            Not After : Nov  7 19:11:33 2025 GMT
        Subject:
            countryName               = FR
            stateOrProvinceName       = Radius
            organizationName          = Example Inc.
            commonName                = Example Server Certificate
            emailAddress              = admin@example.org
        X509v3 extensions:
            X509v3 Extended Key Usage:
                TLS Web Server Authentication
            X509v3 CRL Distribution Points:
                Full Name:
                  URI:http://www.example.com/example_ca.crl
            X509v3 Certificate Policies:
                Policy: 1.3.6.1.4.1.40808.1.3.2
Certificate is to be certified until Nov  7 19:11:33 2025 GMT (60 days)

Write out database with 1 new entries
Database updated
openssl pkcs12 -export -in server.crt -inkey server.key -out server.p12  -
passin pass:'whatever' -passout pass:'whatever'
```

```
chmod g+r server.p12
openssl pkcs12 -in server.p12 -out server.pem -passin pass:'whatever' -
passout pass:'whatever'
chmod g+r server.pem
chown root:radiusd server.*
chmod 640 server.*
```

Amennyiben szeretnénk az eredeti állaporta állni, akkor az alábbi utasításokat futtassuk

```
# cd /etc/raddb/certs && rm -f *.pem *.der *.csr *.crt *.key *.p12 serial*
index.txt*
```

A szerver tesztelését újra futtathatjuk

```
Listening on auth address 127.0.0.1 port 18120 bound to server inner-tunnel
Listening on auth address * port 1812 bound to server default
Listening on acct address * port 1813 bound to server default
Listening on auth address :: port 1812 bound to server default
Listening on acct address :: port 1813 bound to server default
Listening on proxy address * port 44473
Listening on proxy address :: port 54094
Ready to process requests
```

File alapú hitelesítés

Mentsük le a felhasználókat tartalmazó adatbázist

```
# cp -a /etc/raddb/mods-config/files/authorize /etc/raddb/mods-
config/files/authorize.orig
```

Hozzunk létre teszt felhasználót

```
# cat > /etc/raddb/mods-config/files/authorize <<EOF
testing Cleartext-Password := "password"
EOF
```

Újraindítás nélkül teszteljük a hozzáférést

```
# radtest testing password 127.0.0.1 0 testing123
Sent Access-Request Id 146 from 0.0.0.0:59541 to 127.0.0.1:1812 length 77
    User-Name = "testing"
    User-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    Cleartext-Password = "password"
Received Access-Reject Id 146 from 127.0.0.1:1812 to 127.0.0.1:59541 length
38
    Message-Authenticator = 0x6fdf89ab2cd775d9cbecc980edf715f3
(0) -: Expected Access-Accept got Access-Reject
```

Töltsük újra a szerver konfigurációt

```
# systemctl restart radiusd
```

Teszteljük a módosítást

```
# radtest testing password 127.0.0.1 0 testing123
Sent Access-Request Id 161 from 0.0.0.0:44720 to 127.0.0.1:1812 length 77
    User-Name = "testing"
    User-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    Cleartext-Password = "password"
Received Access-Accept Id 161 from 127.0.0.1:1812 to 127.0.0.1:44720 length
38
    Message-Authenticator = 0x88d891160ee4e45002497ff6e3ca4b59
```

Teljes teszt

```
# radtest --help
Usage: radtest [OPTIONS] user passwd radius-server[:port] nas-port-number
secret [ppphint] [nasname]
        -d RADIUS_DIR       Set radius directory
        -t <type>           Set authentication method
                            type can be pap, chap, mschap, or eap-md5
        -P protocol         Select udp (default) or tcp
        -x                  Enable debug output
        -4                  Use IPv4 for the NAS address (default)
        -6                  Use IPv6 for the NAS address
        -6                  Mandate checks for Blast RADIUS (this is not set
by default).

# radtest -t pap testing password 127.0.0.1 0 testing123
Sent Access-Request Id 146 from 0.0.0.0:59648 to 127.0.0.1:1812 length 77
    User-Name = "testing"
    User-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    Cleartext-Password = "password"
Received Access-Accept Id 146 from 127.0.0.1:1812 to 127.0.0.1:59648 length
38
    Message-Authenticator = 0x29c262c37719c7b5490dade0eba018a2

# radtest -t chap testing password 127.0.0.1 0 testing123
Sent Access-Request Id 46 from 0.0.0.0:46131 to 127.0.0.1:1812 length 78
    User-Name = "testing"
    CHAP-Password = 0xcaf4ca1ab5cbd80cfd255c0a20b5d0d7a3
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    Cleartext-Password = "password"
Received Access-Accept Id 46 from 127.0.0.1:1812 to 127.0.0.1:46131 length
```

```
38
    Message-Authenticator = 0x915bad7c2a2c26cb4e25f95b0f606158

# radtest -t mschap testing password 127.0.0.1 0 testing123
Sent Access-Request Id 133 from 0.0.0.0:36775 to 127.0.0.1:1812 length 133
    User-Name = "testing"
    MS-CHAP-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    Cleartext-Password = "password"
    MS-CHAP-Challenge = 0x776d71a43a29e5e0
    MS-CHAP-Response =
0x000100000000000000000000000000000000000000000000006469e4d8f3d977bba821d6
c987ab8dc82dd22b42e70009ec
Received Access-Accept Id 133 from 127.0.0.1:1812 to 127.0.0.1:36775 length
102
    Message-Authenticator = 0xc1115e503566db3209038dbe5f119649
    MS-CHAP-MPPE-Keys = 0x000000000000000166a9e32f11580c1c0b62f9cd0bda633
    MS-MPPE-Encryption-Policy = Encryption-Allowed
    MS-MPPE-Encryption-Types = RC4-40or128-bit-Allowed

# radtest -t eap-md5 testing password 127.0.0.1 0 testing123
Loading input data...
Read 1 element(s) from input: stdin
Loaded: 1 input element(s).
Adding new socket: src: 0.0.0.0:0, dst: 127.0.0.1:1812
Added new socket: 5 (num sockets: 1)
Sent Access-Request Id 6 from 0.0.0.0:57235 to 127.0.0.1:1812 length 73
    User-Name = "testing"
    Cleartext-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    EAP-Code = Response
    EAP-Type-Identity = 0x74657374696e67
    EAP-Message = 0x02f4000c0174657374696e67
    Message-Authenticator = 0x00000000000000000000000000000000
Received Access-Challenge Id 6 from 127.0.0.1:1812 to 0.0.0.0:57235 length
80
    Message-Authenticator = 0x413491aa17d3a3649ef3e4aa585cda21
    EAP-Message = 0x01f500160410412e576008f0de2a5122f16c9d908981
    State = 0x1d2d846a1dd8802f3111415ec636f0a3
    EAP-Id = 245
    EAP-Code = Request
    EAP-Type-MD5-Challenge = 0x10412e576008f0de2a5122f16c9d908981
Sent Access-Request Id 38 from 0.0.0.0:57235 to 127.0.0.1:1812 length 101
    User-Name = "testing"
    Cleartext-Password = "password"
    NAS-IP-Address = 192.168.110.11
    NAS-Port = 0
    EAP-Code = Response
    Message-Authenticator = 0x00000000000000000000000000000000
```

```
    EAP-Type-MD5-Challenge = 0x1070cf2ce2eb2e0cf2b1283d43583ae23b
    EAP-Id = 245
    State = 0x1d2d846a1dd8802f3111415ec636f0a3
    EAP-Message = 0x02f50016041070cf2ce2eb2e0cf2b1283d43583ae23b
Received Access-Accept Id 38 from 127.0.0.1:1812 to 0.0.0.0:57235 length 53
    Message-Authenticator = 0x8d94e8b9207f6f19bc078121280292f6
    EAP-Message = 0x03f50004
    User-Name = "testing"
    EAP-Id = 245
    EAP-Code = Success
```

Kerberos hitelesítés

Szükséges csomagok telepítése

```
# dnf install freeradius freeradius-utils freeradius-krb5 krb5-workstation
```

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