



YAMAHA RTX ??????? L2TPv3 ????? VPN ????? (IPv4, IPv6 ??)

SoftEther VPN Server ? [Build 9582 ????????](#)YAMAHA ????? (RTX ????) ?????
L2TPv3 over IPsec VPN ????? (????? 2 ??????) ????????????

????????????????????????????? YAMAHA ??? LAN ??? Ethernet ?????????????? (??????
???) ? SoftEther VPN Server ??? HUB ? Ethernet ??????????????????????????

[net.png](#)

YAMAHA ??? SoftEther VPN Server ? IPv4 (NAT ?) ??? IPv6 ??????????????????

RTX ????? SoftEther VPN Server ????????????

YAMAHA ?????? SoftEther VPN Server ?????? VPN ????????????????????

??SoftEther VPN Server ??? 2 ??????????????????? VPN ???????SoftEther VPN Bridge
????????????? Windows ? Linux ?? VPN ??????????????????Cisco ?????NEC IX ????????????

IJ SEIL ?????????????????IT ????????????????????? Windows ? Linux ? VPN ?
????????????????????????????Cisco ??? NEC IX ?????????IJ SEIL ?????????????
?? Amazon.co.jp ?????????????????????????????

??SoftEther VPN Server ? YAMAHA ????? L2TPv3 over IPsec ?????????????????
???????????????????? Amazon.co.jp ????????????????? YAMAHA ?????????????
SoftEther VPN Server ?????????????????SoftEther VPN Server ????? YAMAHA ???
????????????????????

[yahama.jpg](#)

YAMAHA RTX810 ??

SoftEther VPN Server ?????????? YAMAHA ?????????????????????

??SoftEther VPN Server ????????? YAMAHA ????? (??? L2TPv3 ?????) ?????
???????? YAMAHA ?????????????????????????????????????YAMAHA RTX810 ??
??? YAMAHA ????? L2TPv3 ?????????????????????????????????????
RTX810 ?????????????YAMAHA RTX1210 ??????????? 9 ?? YAMAHA ?????
L2TPv3 ?????????????????????????????????????SoftEther VPN Server ?????????
YAMAHA ??? 1 ????? SoftEther VPN Server ????????????????? SoftEther VPN
Server ????? HUB (?? 2 ?????) ?????YAMAHA ??? ID ?????????????????
SoftEther VPN Server ??PC ??????????? VPN ?????????????????????

??????VPN Server ?????? ID ???? YAMAHA ??????ipsec ike local name 1?????????
??

(?????l2tpv3????? HUB ?VLAN?????????????????????????)

???ISAKMP (IKEv1) ? Phase 1 ID ????*? (?????) ?????????????????????????????????????
VPN ?????????????????????????????????????IPSec ?????????????????????????????????
?????????

YAMAHA ????????????? #1 (?? IP ??????????)

1 ????????? YAMAHA ????????????????????? SoftEther VPN Server ???? VPN ??????????
????????????

????????????????YAMAHA ????????? IP ???? (????? IP ????????? NAT ????????? IP ?????
????????????????) ?????????????????????YAMAHA ????????? IP ?????????????????PPPoE ?? ISP
?? IP ?????????????????????????????????

??

- **Ethernet ???????**
lan1: ?????
lan2: WAN ? (IP ??????: 2.3.4.5?NAT ??????)
- **???????????? (????????????????????) ?????? IP ?????**
lan2 ???? Ethernet ??????????
IP ??????: 2.3.4.5 / 255.255.255.0
?????????????: 2.3.4.254
????????????????????????????
- **?????? SoftEther VPN Server ????????? IP ?????**
1.2.3.4
(??? test.softether.net ???? DNS ???)
- **ISAKMP SA ?????????????**
AES-256 / SHA / DH Group 2 (1024 bit)
- **IPsec SA ?????????????**
AES-256 / SHA
- **IPsec Pre-Shared Key (?????) ???**
vpn
- **ISAKMP Phase 1 ID**
YAMAHA1_ID

????????? YAMAHA ?????????????????????????????????

```
# ???????????? (??????? IP ????? DHCP ??????????)
login timer 300
no dhcp service
no dhcp server rfc2131 compliant except remain-silent
no dhcp scope 1
no ip lan1 address

# WAN ???? IP ???????
ip routing on
ip lan2 address 2.3.4.5/24
ip route default gateway 2.3.4.254

# VPN ???????
ipsec auto refresh on
ipsec transport 1 101 udp 1701
tunnel select 1
tunnel encapsulation l2tpv3
# VPN Server ?????????: IPv4 ??????????????
tunnel endpoint address 1.2.3.4
# VPN Server ?????????: IPv4 DNS ??????????????
tunnel endpoint name test.softether.net fqdn
ipsec tunnel 101
ipsec sa policy 101 1 esp aes-cbc sha-hmac
ipsec ike restrict-dangling-sa 1 off
ipsec ike nat-traversal 1 on keepalive=30 force=off
ipsec ike keepalive log 1 on
ipsec ike keepalive use 1 on dpd 10 6 0
ipsec ike pre-shared-key 1 text vpn
ipsec ike local name 1 YAMAHA1_ID fqdn
ipsec ike duration isakmp-sa 1 691200 rekey 90%
ipsec ike duration ipsec-sa 1 691200 rekey 90%
# VPN Server ?????????: IPv4 ??????????????
ipsec ike remote address 1 1.2.3.4
# VPN Server ?????????: IPv4 DNS ??????????????
ipsec ike remote address 1 test.softether.net
l2tp always-on on
l2tp tunnel disconnect time off
l2tp keepalive use on 5 10
l2tp keepalive log on
l2tp syslog on
l2tp remote end-id vpn
tunnel enable 1
```

l2tp service on l2tpv3

```
# lan1 ? VPN ????????? L2 ??????  
bridge member bridge1 lan1 tunnel1
```

```
# L2 ?????? IPv4 ??????????  
# VPN ?????????????????? IPv4 ??????????????  
# (????? VPN ?????????????????? IP ??????  
# telnet ??????????????????)  
# ??VPN ?????????????????? IPv4 ??????????  
# ?????? IPv4 ?????????? heartbeat2 ??????????  
# ?????? VPN ?????????????? VPN ??????????  
# ??????????????????????????????????  
# ??????????????  
ip bridge1 address 10.255.255.253/22
```

```
# heartbeat2 ??????????VPN ??????????????????  
# ?????????????? VPN ??????????????  
heartbeat2 myname keepalive  
heartbeat2 transmit 1 auth keepalive 10.255.255.255  
heartbeat2 transmit interval 30  
heartbeat2 transmit enable 1
```

```
# YAMAHA ??????????????????????????????  
# ??????????????????????????????L2TPv3 ??????????  
# ??????????????????????????????????  
save  
restart
```

YAMAHA ????????????? #2 (DHCP ??? IP ????????)

1 ???????? YAMAHA ?????????????????? SoftEther VPN Server ??? VPN ??????????
????????????

????????????YAMAHA ?????????????????? IP ??? (???? IP ??????? NAT ?????
???? IP ??????????????????) ? DHCP ?????????????????????

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

- **Ethernet ??????**

- lan1: ?????

- lan2: WAN ? (DHCP ??? IP ?????????NAT ??????)

- **?????????? (????????????????) ????? IP ????**
lan2 ??? Ethernet ??????? DHCP ??? IP ?????????????????????????????
- **?????? SoftEther VPN Server ??????? IP ????**
1.2.3.4
(??? test.softether.net ??? DNS ?????????????????????????????????)
- **ISAKMP SA ???????????**
AES-256 / SHA / DH Group 2 (1024 bit)
- **IPsec SA ???????????**
AES-256 / SHA
- **IPsec Pre-Shared Key (?????) ???**
vpn
- **ISAKMP Phase 1 ID**
YAMAHA1_ID

????????? YAMAHA ?????????????????????????????????

```
# ??????????? (?????? IP ????? DHCP ???????????)
login timer 300
no dhcp service
no dhcp server rfc2131 compliant except remain-silent
no dhcp scope 1
no ip lan1 address
```

```
# WAN ??? DHCP ???????
ip routing on
ip lan2 address dhcp
ip route default gateway dhcp lan2
dns server dhcp lan2
```

```
# VPN ???????
ipsec auto refresh on
ipsec transport 1 101 udp 1701
tunnel select 1
tunnel encapsulation l2tpv3
# VPN Server ??????????: IPv4 ??????????????????
tunnel endpoint address 1.2.3.4
# VPN Server ??????????: IPv4 DNS ??????????????
tunnel endpoint name test.softether.net fqdn
ipsec tunnel 101
ipsec sa policy 101 1 esp aes-cbc sha-hmac
ipsec ike restrict-dangling-sa 1 off
```



```
ipsec ike nat-traversal 1 on keepalive=30 force=off
ipsec ike keepalive log 1 on
ipsec ike keepalive use 1 on dpd 10 6 0
ipsec ike pre-shared-key 1 text vpn
ipsec ike local name 1 YAMAHA1_ID fqdn
ipsec ike duration isakmp-sa 1 691200 rekey 90%
ipsec ike duration ipsec-sa 1 691200 rekey 90%
# VPN Server ?????????: IPv4 ??????????????
ipsec ike remote address 1 1.2.3.4
# VPN Server ?????????: IPv4 DNS ??????????????
ipsec ike remote address 1 test.softether.net
l2tp always-on on
l2tp tunnel disconnect time off
l2tp keepalive use on 5 10
l2tp keepalive log on
l2tp syslog on
l2tp remote end-id vpn
tunnel enable 1

l2tp service on l2tpv3

# lan1 ? VPN ????????? L2 ??????
bridge member bridge1 lan1 tunnel1

# L2 ????? IPv4 ?????????
# VPN ????????????????? IPv4 ?????????????
# (????? VPN ????????????????? IP ??????
# telnet ?????????????????????)
# ??VPN ????????????????? IPv4 ?????????
# ????? IPv4 ????????? heartbeat2 ?????????????
# ????? VPN ????????????? VPN ?????????
# ?????????????????????????????
# ?????????????
ip bridge1 address 10.255.255.253/22

# heartbeat2 ?????????VPN ?????????????????
# ????????????? VPN ?????????????
heartbeat2 myname keepalive
heartbeat2 transmit 1 auth keepalive 10.255.255.255
heartbeat2 transmit interval 30
heartbeat2 transmit enable 1

# YAMAHA ?????????????????????????
# ?????????????????????????L2TPv3 ?????????
# ?????????????????????????????
```

save
restart

YAMAHA ??????????? #3 (PPPoE ??? IP ????????)

1 ???????? YAMAHA ?????????????????????? SoftEther VPN Server ??? VPN ??????????
????????????

????????????YAMAHA ?????????????????? PPPoE ??? ISP ?????????????? ISP ??? IP ??
????????????????????

??

- **Ethernet ??????**
lan1: ?????
lan2: WAN ? (PPPoE ??? IP ????????)
- **???????????? (????????????????????) ????? IP ????**
lan2 ?????? PPPoE ??? IP ?????????????????????????????????
- **????? SoftEther VPN Server ??????? IP ????**
1.2.3.4
(??? test.softether.net ??? DNS ?????????????????????????????????????)
- **ISAKMP SA ????????????**
AES-256 / SHA / DH Group 2 (1024 bit)
- **IPsec SA ????????????**
AES-256 / SHA
- **IPsec Pre-Shared Key (?????) ???**
vpn
- **ISAKMP Phase 1 ID**
YAMAHA1_ID

????????? YAMAHA ?????????????????????????????????????

```
# ????????????? (?????? IP ????? DHCP ????????????)  
login timer 300  
no dhcp service  
no dhcp server rfc2131 compliant except remain-silent  
no dhcp scope 1  
no ip lan1 address  
  
# PPPoE ?????? (lan2 ??????????????????)  
pp select 1
```

```
pp keepalive interval 30 retry-interval=1 count=6
pp keepalive use lcp-echo
pp always-on on
pppoe use lan2
pppoe auto disconnect off
pppoe tcp mss limit 1414
pp auth accept pap chap
# PPPoE ??????????????????????
pp auth myname pppoe_username@isp.net PPPoEPassword
ppp lcp mru on 1454
ppp ipcp msexp on
ppp ipcp ipaddress on
ppp ccp type none
pp enable 1
ip route default gateway pp 1
dns server pp 1

# VPN ???????
ipsec auto refresh on
ipsec transport 1 101 udp 1701
tunnel select 1
tunnel encapsulation l2tpv3
# VPN Server ??????????: IPv4 ??????????????????
tunnel endpoint address 1.2.3.4
# VPN Server ??????????: IPv4 DNS ??????????????????
tunnel endpoint name test.softether.net fqdn
ipsec tunnel 101
ipsec sa policy 101 1 esp aes-cbc sha-hmac
ipsec ike restrict-dangling-sa 1 off
ipsec ike nat-traversal 1 on keepalive=30 force=off
ipsec ike keepalive log 1 on
ipsec ike keepalive use 1 on dpd 10 6 0
ipsec ike pre-shared-key 1 text vpn
ipsec ike local name 1 YAMAHAl_ID fqdn
ipsec ike duration isakmp-sa 1 691200 rekey 90%
ipsec ike duration ipsec-sa 1 691200 rekey 90%
# VPN Server ??????????: IPv4 ??????????????????
ipsec ike remote address 1 1.2.3.4
# VPN Server ??????????: IPv4 DNS ??????????????????
ipsec ike remote address 1 test.softether.net
l2tp always-on on
l2tp tunnel disconnect time off
l2tp keepalive use on 5 10
l2tp keepalive log on
```


- **Ethernet ??????**
lan1: ?????
lan2: WAN ? (IPv6 ??????? DNS ??? RA ??? DHCP ?????)
- **?????????? (????????????????) ????? IP ????**
lan2 ???? Ethernet ????????? IPv6 ??????? DNS ??? RA ??? DHCP ??????????
??????????
- **?????? SoftEther VPN Server ??????? IP ????**
2001:AF80::1234
(???IPv6 ?????????test123.aoi.flets-east.jp????? DNS ?????????? IPv6 ??????
????? DNS ??)
- **ISAKMP SA ???????????**
AES-256 / SHA / DH Group 2 (1024 bit)
- **IPsec SA ???????????**
AES-256 / SHA
- **IPsec Pre-Shared Key (?????) ???**
vpn
- **ISAKMP Phase 1 ID**
YAMAHA1_ID

????????? YAMAHA ??

```
# ??????????? (?????? IP ????? DHCP ??????????)
login timer 300
no dhcp service
no dhcp server rfc2131 compliant except remain-silent
no dhcp scope 1
no ip lan1 address
```

```
# WAN ???? IPv6 ???????????
ipv6 routing on
ipv6 lan2 address auto
ipv6 lan2 dhcp service client ir=on
```

```
# VPN ???????
ipsec auto refresh on
ipsec transport 1 101 udp 1701
tunnel select 1
tunnel encapsulation l2tpv3
# VPN Server ?????????: IPv6 ??????????????
tunnel endpoint address 2001:AF80::1234
# VPN Server ?????????: IPv6 DNS ??????????????
```

```
tunnel endpoint name test123.aoi.flets-east.jp fqdn
ipsec tunnel 101
ipsec sa policy 101 1 esp aes-cbc sha-hmac
ipsec ike restrict-dangling-sa 1 off
ipsec ike nat-traversal 1 on keepalive=30 force=off
ipsec ike keepalive log 1 on
ipsec ike keepalive use 1 on dpd 10 6 0
ipsec ike pre-shared-key 1 text vpn
ipsec ike local name 1 YAMAHAl_ID fqdn
ipsec ike duration isakmp-sa 1 691200 rekey 90%
ipsec ike duration ipsec-sa 1 691200 rekey 90%
# VPN Server ???????: IPv6 ??????????????
ipsec ike remote address 1 2001:AF80::1234
# VPN Server ???????: IPv6 DNS ??????????????
ipsec ike remote address 1 test123.aoi.flets-east.jp
l2tp always-on on
l2tp tunnel disconnect time off
l2tp keepalive use on 5 10
l2tp keepalive log on
l2tp syslog on
l2tp remote end-id vpn
tunnel enable 1

l2tp service on l2tpv3

# lan1 ? VPN ???????? L2 ??????
bridge member bridge1 lan1 tunnel1

# L2 ????? IPv4 ??????????
# VPN ?????????????????? IPv4 ??????????????????
# (????? VPN ?????????????????? IP ??????)
# telnet ??????????????????????)
# ??VPN ?????????????????? IPv4 ??????????????
# ????? IPv4 ?????????? heartbeat2 ??????????????
# ????? VPN ?????????????????? VPN ??????????????
# ??????????????????????????????????????????
# ??????????????????
ip bridge1 address 10.255.255.253/22

# heartbeat2 ??????????VPN ??????????????????????
# ?????????????????? VPN ??????????????????
heartbeat2 myname keepalive
heartbeat2 transmit 1 auth keepalive 10.255.255.255
heartbeat2 transmit interval 30
heartbeat2 transmit enable 1
```

```
# YAMAHA ?????????????????????????????????
# ?????????????????????????????L2TPv3 ????????
# ?????????????????????????????????????????
save
restart
```