

Juniper SRX 日本語マニュアル

ルートベース IPsec VPN の CLI 設定

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はじめに

ルートベースの IPsec VPN の CLI 設定について説明します。

※手順内容は「SRX300」、JUNOS「19.4R3-S1」にて確認を実施しております。
実際の設定内容やパラメータは導入する環境や構成によって異なります。
各種設定内容の詳細は下記リンクよりご確認ください。

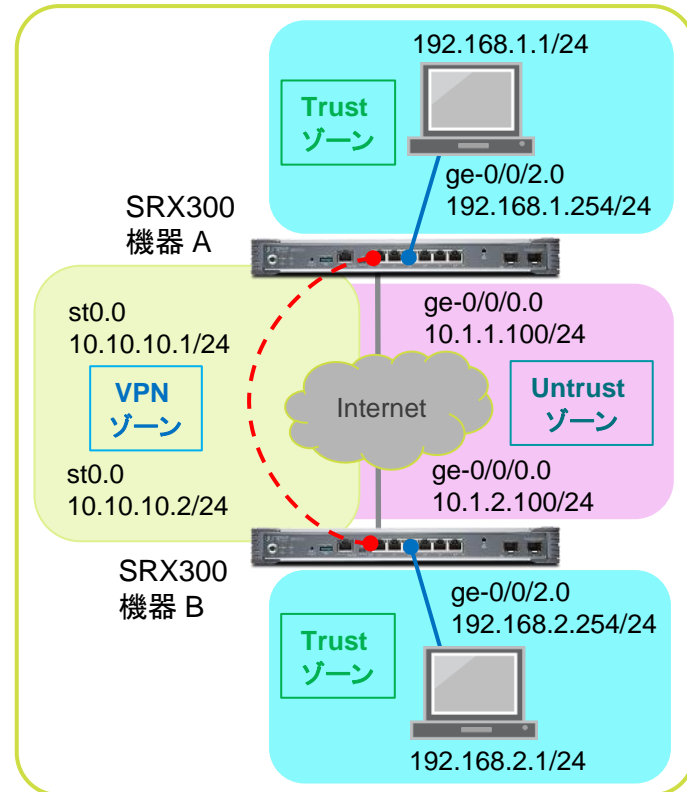
<https://www.juniper.net/documentation/>

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ルートベース IPsec VPN

構成概要

- 二つの SRX300 機器間(機器 A、機器 B)でルートベースの IPsec VPN を設定
- トンネル用の仮想インターフェース st0.0 を双方の機器に設定し、セキュリティゾーン VPN に割り当てる
- Trust ゾーン / VPN ゾーン 間のセキュリティポリシーを設定し通信を制御



ルートベース IPsec VPN

- 設定初期化、root パスワードの設定、ホスト名設定

※機器 A、機器 B それぞれの configuration モードにて実行

```
user@srx# delete
This will delete the entire configuration
Delete everything under this level? [yes,no] (no) yes
```

```
user@srx# set system root-authentication plain-text-password
New password: Juniper123
Retype new password: Juniper123
```

※機器 A にて設定

```
user@srx# set system host-name SRX300-A
```

※機器 B にて設定

```
user@srx# set system host-name SRX300-B
```

※機器 A、機器 B それぞれに実行

```
user@srx# commit
commit completed
```

ルートベース IPsec VPN

- インタフェース設定

※機器 A にて設定

```
user@srx# set interfaces ge-0/0/0 unit 0 family inet address 10.1.1.100/24
user@srx# set interfaces ge-0/0/2 unit 0 family inet address 192.168.1.254/24
user@srx# set interfaces st0 unit 0 family inet address 10.10.10.1/24
```

※機器 B にて設定

```
user@srx# set interfaces ge-0/0/0 unit 0 family inet address 10.1.2.100/24
user@srx# set interfaces ge-0/0/2 unit 0 family inet address 192.168.2.254/24
user@srx# set interfaces st0 unit 0 family inet address 10.10.10.2/24
```

- デフォルトルート設定

※構成例では、10.1.1.254 と 10.1.2.254 を Internet 側のデフォルトゲートウェイと想定

※機器 A にて設定

```
user@srx# set routing-options static route 0.0.0.0/0 next-hop 10.1.1.254
```

※機器 B にて設定

```
user@srx# set routing-options static route 0.0.0.0/0 next-hop 10.1.2.254
```

ルートベース IPsec VPN

- セキュリティゾーン設定

※機器 A にて設定

```
user@srx# set security zones security-zone Trust interfaces ge-0/0/2.0
user@srx# set security zones security-zone Trust address-book address 192.168.1.0 192.168.1.0/24
user@srx# set security zones security-zone VPN interfaces st0.0
user@srx# set security zones security-zone VPN address-book address 192.168.2.0 192.168.2.0/24
user@srx# set security zones security-zone Untrust interfaces ge-0/0/0.0 host-inbound-traffic system-services ike
```

※機器 B にて設定

```
user@srx# set security zones security-zone Trust interfaces ge-0/0/2.0
user@srx# set security zones security-zone Trust address-book address 192.168.2.0 192.168.2.0/24
user@srx# set security zones security-zone VPN interfaces st0.0
user@srx# set security zones security-zone VPN address-book address 192.168.1.0 192.168.1.0/24
user@srx# set security zones security-zone Untrust interfaces ge-0/0/0.0 host-inbound-traffic system-services ike
```

ルートベース IPsec VPN

- セキュリティポリシー設定

※機器 A にて設定

```
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match source-address 192.168.1.0
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match destination-address 192.168.2.0
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match application any
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV then permit
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match source-address 192.168.2.0
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match destination-address 192.168.1.0
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match application any
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT then permit
```

※機器 B にて設定

```
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match source-address 192.168.2.0
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match destination-address 192.168.1.0
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV match application any
user@srx# set security policies from-zone Trust to-zone VPN policy TtoV then permit
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match source-address 192.168.1.0
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match destination-address 192.168.2.0
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT match application any
user@srx# set security policies from-zone VPN to-zone Trust policy VtoT then permit
```

ルートベース IPsec VPN

- IKE (Phase1 接続 プロファイル・ポリシー・ゲートウェイ) 設定

※機器 A にて設定

```
user@srx# set security ike proposal P1 authentication-method pre-shared-keys
user@srx# set security ike proposal P1 dh-group group2
user@srx# set security ike proposal P1 authentication-algorithm sha1
user@srx# set security ike proposal P1 encryption-algorithm aes-128-cbc
user@srx# set security ike policy IKE-Policy mode main
user@srx# set security ike policy IKE-Policy proposals P1
user@srx# set security ike policy IKE-Policy pre-shared-key ascii-text "Junos123"
user@srx# set security ike gateway Gateway-A external-interface ge-0/0/0.0
user@srx# set security ike gateway Gateway-A ike-policy IKE-Policy
user@srx# set security ike gateway Gateway-A address 10.1.2.100
```

※機器 B にて設定

```
user@srx# set security ike proposal P1 authentication-method pre-shared-keys
user@srx# set security ike proposal P1 dh-group group2
user@srx# set security ike proposal P1 authentication-algorithm sha1
user@srx# set security ike proposal P1 encryption-algorithm aes-128-cbc
user@srx# set security ike policy IKE-Policy mode main
user@srx# set security ike policy IKE-Policy proposals P1
user@srx# set security ike policy IKE-Policy pre-shared-key ascii-text "Junos123"
user@srx# set security ike gateway Gateway-B external-interface ge-0/0/0.0
user@srx# set security ike gateway Gateway-B ike-policy IKE-Policy
user@srx# set security ike gateway Gateway-B address 10.1.1.100
```


ルートベース IPsec VPN

- IPsec (Phase2 接続 プロポーサル・ポリシー・VPN) 設定

※機器 A にて設定

```
user@srx# set security ipsec proposal P2 protocol esp
user@srx# set security ipsec proposal P2 authentication-algorithm hmac-sha1-96
user@srx# set security ipsec proposal P2 encryption-algorithm aes-128-cbc
user@srx# set security ipsec policy IPsec-Policy proposals P2
user@srx# set security ipsec policy IPsec-Policy perfect-forward-secrecy keys group2
user@srx# set security ipsec vpn VPN-A ike gateway Gateway-A
user@srx# set security ipsec vpn VPN-A ike ipsec-policy IPsec-Policy
user@srx# set security ipsec vpn VPN-A bind-interface st0.0
```

※機器 B にて設定

```
user@srx# set security ipsec proposal P2 protocol esp
user@srx# set security ipsec proposal P2 authentication-algorithm hmac-sha1-96
user@srx# set security ipsec proposal P2 encryption-algorithm aes-128-cbc
user@srx# set security ipsec policy IPsec-Policy proposals P2
user@srx# set security ipsec policy IPsec-Policy perfect-forward-secrecy keys group2
user@srx# set security ipsec vpn VPN-B ike gateway Gateway-B
user@srx# set security ipsec vpn VPN-B ike ipsec-policy IPsec-Policy
user@srx# set security ipsec vpn VPN-B bind-interface st0.0
```

ルートベース IPsec VPN

- ルーティング設定

※機器 A にて設定

```
user@srx# set routing-options static route 192.168.2.0/24 next-hop st0.0
```

※機器 B にて設定

```
user@srx# set routing-options static route 192.168.1.0/24 next-hop st0.0
```

- TCP MSS 設定調整

※利用の環境に合わせて調整する必要あり

※機器 A、機器 B にて設定

```
user@srx# set security flow tcp-mss ipsec-vpn mss 1350
```

ルートベース IPsec VPN

設定の確認 1

```
※機器 A
[edit]
root@srx# show security ike
proposal P1 {
    authentication-method pre-shared-keys;
    dh-group group2;
    authentication-algorithm sha1;
    encryption-algorithm aes-128-cbc;
}
policy IKE-Policy {
    mode main;
    proposals P1;
    pre-shared-key ascii-text
"$9$qPTFctOcyKtuLNdvY25Qz6tu"; ## SECRET-DATA
}
gateway Gateway-A {
    ike-policy IKE-Policy;
    address 10.1.2.100;
    external-interface ge-0/0/0.0;
}
```

```
※機器 B
[edit]
root@srx# show security ike
proposal P1 {
    authentication-method pre-shared-keys;
    dh-group group2;
    authentication-algorithm sha1;
    encryption-algorithm aes-128-cbc;
}
policy IKE-Policy {
    mode main;
    proposals P1;
    pre-shared-key ascii-text
"$9$bRY4JikP36Ak.ORhclegoaUk."; ## SECRET-DATA
}
gateway Gateway-B {
    ike-policy IKE-Policy;
    address 10.1.1.100;
    external-interface ge-0/0/0.0;
}
```

ルートベース IPsec VPN

設定の確認 2

※機器 A

```
[edit]
root@srx# show security ipsec
proposal P2 {
    protocol esp;
    authentication-algorithm hmac-sha1-96;
    encryption-algorithm aes-128-cbc;
}
policy IPsec-Policy {
    perfect-forward-secrecy {
        keys group2;
    }
    proposals P2;
}
vpn VPN-A {
    bind-interface st0.0;
    ike {
        gateway Gateway-A;
        ipsec-policy IPsec-Policy;
    }
}
```

※機器 B

```
[edit]
root@srx# show security ipsec
proposal P2 {
    protocol esp;
    authentication-algorithm hmac-sha1-96;
    encryption-algorithm aes-128-cbc;
}
policy IPsec-Policy {
    perfect-forward-secrecy {
        keys group2;
    }
    proposals P2;
}
vpn VPN-B {
    bind-interface st0.0;
    ike {
        gateway Gateway-B;
        ipsec-policy IPsec-Policy;
    }
}
```

ルートベース IPsec VPN

設定の確認 3

※機器 A

```
[edit]
root@srx# show security flow
tcp-mss {
    ipsec-vpn {
        mss 1350;
    }
}

[edit]
root@srx# show security policies
from-zone Trust to-zone VPN {
    policy TtoV {
        match {
            source-address 192.168.1.0;
            destination-address 192.168.2.0;
            application any;
        }
        then {
            permit;
        }
    }
}
```

※機器 B

```
[edit]
root@srx# show security flow
tcp-mss {
    ipsec-vpn {
        mss 1350;
    }
}

[edit]
root@srx# show security policies
from-zone Trust to-zone VPN {
    policy TtoV {
        match {
            source-address 192.168.2.0;
            destination-address 192.168.1.0;
            application any;
        }
        then {
            permit;
        }
    }
}
```

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設定の確認 4

※機器 A

```
from-zone VPN to-zone Trust {
  policy VtoT {
    match {
      source-address 192.168.2.0;
      destination-address 192.168.1.0;
      application any;
    }
    then {
      permit;
    }
  }
}
```

※機器 B

```
from-zone VPN to-zone Trust {
  policy VtoT {
    match {
      source-address 192.168.1.0;
      destination-address 192.168.2.0;
      application any;
    }
    then {
      permit;
    }
  }
}
```

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設定の確認 5

※機器 A

```
[edit]
root@srx# show security zones
security-zone Trust {
  address-book {
    address 192.168.1.0 192.168.1.0/24;
  }
  interfaces {
    ge-0/0/2.0;
  }
}
security-zone VPN {
  address-book {
    address 192.168.2.0 192.168.2.0/24;
  }
  interfaces {
    st0.0;
  }
}
```

※※機器 B

```
[edit]
root@srx# show security zones
security-zone Trust {
  address-book {
    address 192.168.2.0 192.168.2.0/24;
  }
  interfaces {
    ge-0/0/2.0;
  }
}
security-zone VPN {
  address-book {
    address 192.168.1.0 192.168.1.0/24;
  }
  interfaces {
    st0.0;
  }
}
```

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設定の確認 6

※機器 A

```
security-zone Untrust {
  interfaces {
    ge-0/0/0.0 {
      host-inbound-traffic {
        system-services {
          ike;
        }
      }
    }
  }
}

[edit]
root@srx# show routing-options
static {
  route 0.0.0.0/0 next-hop 10.1.1.254;
  route 192.168.2.0/24 next-hop st0.0;
}
```

※機器 B

```
security-zone Untrust {
  interfaces {
    ge-0/0/0.0 {
      host-inbound-traffic {
        system-services {
          ike;
        }
      }
    }
  }
}

[edit]
root@srx# show routing-options
static {
  route 0.0.0.0/0 next-hop 10.1.2.254;
  route 192.168.1.0/24 next-hop st0.0;
}
```


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設定の確認 7

※機器 A

```
[edit]
root@srx# show interfaces
ge-0/0/0 {
  unit 0 {
    family inet {
      address 10.1.1.100/24;
    }
  }
}
ge-0/0/2 {
  unit 0 {
    family inet {
      address 192.168.1.254/24;
    }
  }
}
st0 {
  unit 0 {
    family inet {
      address 10.10.10.1/24;
    }
  }
}
```

※機器 B

```
[edit]
root@srx# show interfaces
ge-0/0/0 {
  unit 0 {
    family inet {
      address 10.1.2.100/24;
    }
  }
}
ge-0/0/2 {
  unit 0 {
    family inet {
      address 192.168.2.254/24;
    }
  }
}
st0 {
  unit 0 {
    family inet {
      address 10.10.10.2/24;
    }
  }
}
```