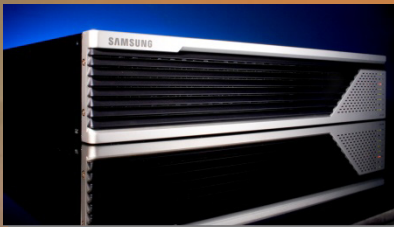


Backup IPSec Configuration



Contents

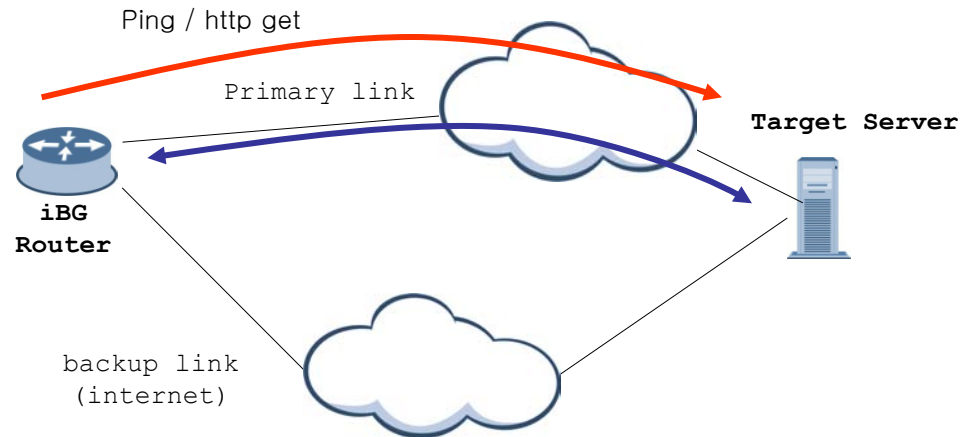
- Overview
- Basic Configuration

Overview

What is backup IPsec tunnel?



- iBG can establish a backup IPsec tunnel through internet upon failure of the primary link automatically
 - Monitors reachability to the target server through the primary link by sending ICMP echo or HTTP-GET request to the target server periodically

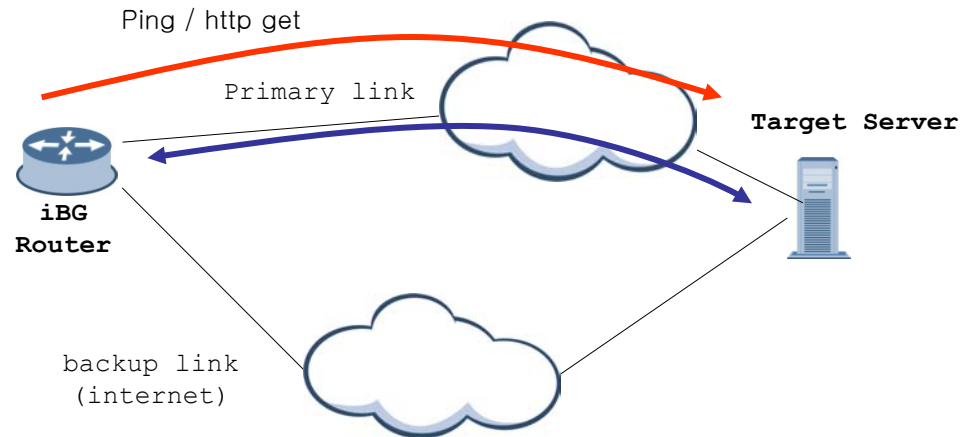


How it works?



● Normal state

- iBG sends periodically ICMP echo or HTTP-GET request to check reachability to the target server
- iBG sends traffic through Primary link

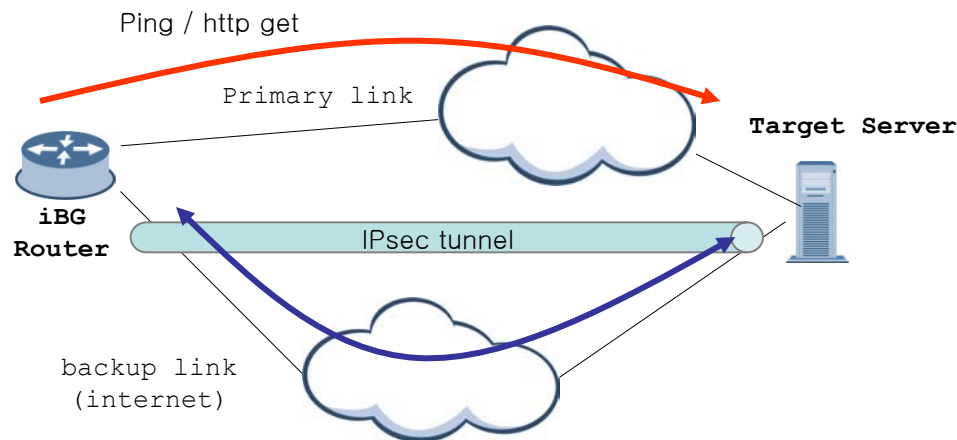


How it works?



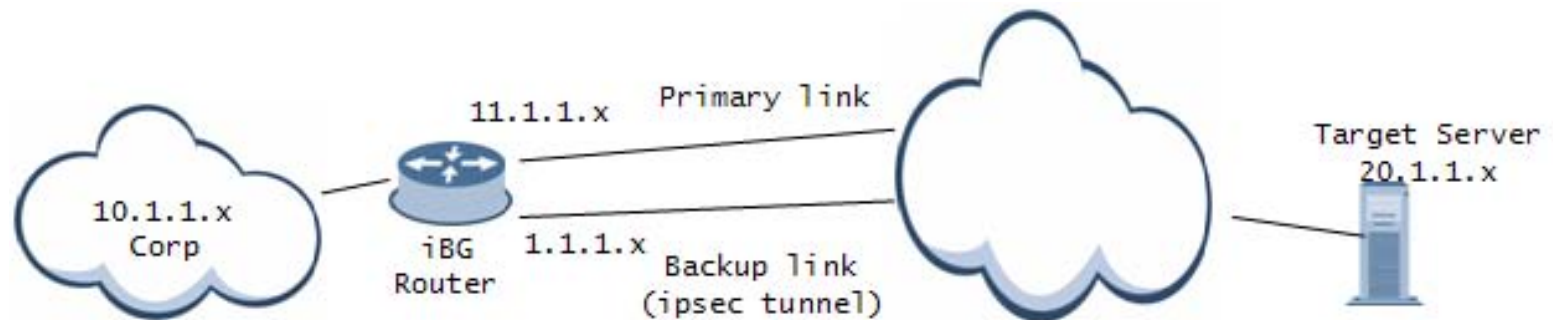
● Backup state

- If iBG does not receive responses for icmp or http-get request, it configures an IPsec tunnel via backup link and sends traffic through the IPsec tunnel.
- iBG continues to send icmp echo or http get request via primary link to check whether the primary link is restored.
 - Upon restoring of primary link, the system changes to normal state



Basic configuration

Network configuration



What you need



- Two system configuration files
 - system.cfg
 - Configuration for normal mode
 - System default configuration file. Name cannot be changed
 - backup.cfg
 - Configuration for backup mode
 - Any file with cfg extension can be used

Normal Mode Configuration (1/2)



🟡 /cf0/system.cfg

- 🟢 If five consecutive http-get fails, iBG will apply backup.cfg to change default route via primary to backup

```
# SAMSUNG ELECTRONICS CO., LTD. system configuration file
(.CFG).

interface ethernet 0/0
description "corp"
ip address 10.1.1.1 255.255.255.0
exit ethernet

interface ethernet 0/1
description "primary link"
ip address 11.1.1.1 255.255.255.0
exit ethernet

interface bundle wan0
link t1 0/0
description "backup link"
encapsulation ppp
ip address 1.1.1.1 255.255.255.0
exit bundle
```

Normal Mode Configuration (2/2)



🟡 /cf0/system.cfg (Cont.)

```
# DNS for target server's name ( for http get request )
ip pname_server 90.90.1.242
ip domain-lookup
# default route
ip route 0.0.0.0/0 11.1.1.2

sla 1
# target server URL
http-get http://www.ubigate.com/ 11.1.1.1

# if 5 consecutive http-get fails, iBG will apply backup.cfg to change
default route via primary to backup
action cfg-load backup.cfg
threshold continuous 5
event packet-loss

# http-get will start 3 minutes after system bootup. During booting time,
http-get/icmp can not be sent because network device is not ready
schedule lifetime 0 start-time 3

enable
exit sla
```

Backup Mode Configuration (1/3)



● /cf0/backup.cfg

- When switched to backup mode, the system apply the configuration in backup.cfg
- backup.cfg includes the following:
 - Change default route to backup-link
 - Disable and delete SLA 1 (configured by /cf0/system.cfg)
 - Configure SLA2

● sla 2

● *# target server URL*

● **http-get http://www.ubigate.com/ 11.1.1.1**

● *# if http-get continuously success more than 5, iBG will load restore.cfg to recover initial configuration*

- After backup IPsec configuration loaded, even if primary failed, iBG keep trying http-get request to the target server to recover initial configuration when primary become valid. To send http-get through primary, local-pbr is required because default route is set via backup link. If http-get success continuously more than 5, iBG will load restore.cfg to configure initial configuration.

Backup Mode Configuration (1/3)



● /cf0/backup.cfg

- When switched to backup mode, the system apply the configuration in backup.cfg. After backup IPsec configuration loaded, even if primary failed, iBG keep trying http-get request to the target server to recover initial configuration when primary become valid. To send http-get through primary, local-pbr is required because default route is set via backup link. If http-get success continuously more than 5, iBG will load restore.cfg to configure initial configuration.

```
# SAMSUNG ELECTRONICS CO., LTD. system configuration file (.CFG).  
# local PBR for detecting primary path available  
qos  
local-pbr  
add-policy-class hhh root-in  
policy-class hhh  
match-access-list aaa  
pbr-redirect nexthop 11.1.1.2  
exit policy-class  
enable-local-pbr  
exit local-pbr  
exit qos  
# access-list for local pbr classification  
access-list ip aaa  
# for icmp-echo mode  
#add permit icmp 11.1.1.1/32 20.1.1.1/32 icmptype 8 icmpcode 0  
# for http-get mode  
add permit tcp 11.1.1.1/32 20.1.1.1/32 dport =80  
exit ip
```


Basic configuration



Configuring backup IPsec configuration (2/3) - /cf0/backupipsec.cfg

change default route to backup-link

no ip route 0.0.0.0/0 11.1.1.2

ip route 0.0.0.0/0 wan0

disable and delete SLA 1 (configured by /cf0/system.cfg)

sla 1

no enable

exit

no sla 1

configure SLA2

sla 2

target server URL

http-get http://www.ubigate.com/ 11.1.1.1

if http-get continuously success more than 5, iBG will load restore.cfg to recover initial configuration

action cfg-load restore.cfg

threshold continuous 5

event packet-recv

schedule lifetime 0 start-time 3

enable

exit sla

Basic configuration



Configuring backup IPsec configuration (3/3) - /cf0/backupipsec.cfg

firewall and ipsec tunnel configuration

```
firewall internet
interface ethernet0/1
policy 1000 in self
exit policy
exit firewall
firewall corp
interface ethernet0/0
policy 1000 in
exit policy
exit firewall
crypto
ike policy ike1 1.1.1.2
local-address 1.1.1.1
key 123
mode main
proposal 1
exit proposal
exit policy
ipsec policy ips1 1.1.1.2
match address 10.1.1.0 255.255.255.0 20.1.1.0 255.255.255.0
proposal 1 esp
exit proposal
exit policy
```

Basic configuration



- Configuring restore configuration (1/3) - **/cf0/restore.cfg**
 - This configuration is for restoring backup to primary.

```
# SAMSUNG ELECTRONICS CO., LTD. system configuration file (.CFG).
```

```
# delete local-pbr configuration
```

```
qos
```

```
local-pbr
```

```
delete-policy-class hhh
```

```
exit
```

```
exit
```

```
no access-list ip aaa
```

```
# restore default route to initial configuration
```

```
no ip route 0.0.0.0/0 wan0
```

```
ip route 0.0.0.0/0 11.1.1.2
```

```
ip pname_server 90.90.1.242
```

```
ip domain-lookup
```

Basic configuration



● Configuring restore configuration (2/3) - /cf0/restore.cfg

```
# configure sla 1 (initial configuration)
sla 1
http-get http://www.ubigate.com/ 11.1.1.1
action cfg-load backupipsec.cfg
threshold continuous 5
event packet-loss
schedule lifetime 0 start-time 3
enable
exit sla
```

```
#delete sla 2
sla 2
no enable
exit
no sla 2
```

Basic configuration



● Configuring restore configuration (3/3) - /cf0/restore.cfg

```
# unconfigure firewall
firewall internet
no interface ethernet0/1
no policy 1000 in self
exit
firewall corp
no interface ethernet0/0
no policy 1000 in
exit

#unconfigure IPSec tunnel
crypto
no ike policy ike1 11.1.1.2
no ipsec policy ips1 11.1.1.2
exit
```


Basic configuration



● Limitations and Restrictions

- Configuration file should start with the string below.
SAMSUNG ELECTRONICS CO., LTD. system configuration file (.CFG).
- Auto completion is not supported in SLA configuration file.
e.g., int eth 0/2 (x), interface ethernet 0/2 (O)
- If entering “configure terminal”, SLA action (.cfg loading) will not be taken.

Thank you!

