Control BGP
from your Applications

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Exa Networks

Whatever a speaker is missing in depth he will compensate for in length
Montesquieu

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Why ?

Dynamically Change Routing

DDOS filtering
IWF interception

Traffic engineering
Suspend customers

IP announcement ..

AnyCast
Control "cloud" IPs from a central location
Active / Passive servers solution with service monitoring

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How ?

Permanent configuration generation

1 – Regenerating BIRD/Quagga/OpenBGPD configuration on change
2 – Getting the daemon to reload its configuration
3 – Go back to 1

There must be a better way ...

OpenBGPD bgpctl
BIRD birdc
Quagga / Zebra telnet ..

There must be a better way ......

Logic will get you from A to B. Imagination will take you everywhere
Albert Einstein

Demonstration !

flap.sh

1 – take your favourite language : perl, python, lua, C, shell, french ! ...
2 – create a forever loop
3 – print what you want to do ...
4 – ... profit ?

```sh
#!/bin/sh

# ignore Control C
trap '' SIGINT

while `true`;
do
    echo "announce route 192.0.2.1 next-hop 10.0.0.1"
    sleep 10
    echo "withdraw route 192.0.2.1 next-hop 10.0.0.1"
    sleep 10
done
```

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Integration

It is that simple

BGP configuration

```
neighbor 192.168.127.128 {
        description "will flap a route until told otherwise";
        router-id 198.111.227.39;
        local-address 192.168.127.1;
        local-as 65533;
        peer-as 65533;

        # add and remove routes when flap.sh prints
        process loving-flaps {
                run etc/processes/flap.sh;
        }
}
```

Success is a result, not a goal
Flaubert

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Want simpler !!

BGP configuration

```
neighbor 192.168.127.128 {
      router-id 198.111.227.39;
      local-address 192.168.127.1;
      local-as 65533;
      peer-as 65533;

      process default-name-for-watchdog {
          run etc/processes/monitor.sh;
      }

      static {
          route 172.10.0.0/16 next-hop 192.0.2.1 watchdog service-one;
      }
}
```

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Want Simpler ?

The watchdog ...

```
#!/bin/sh
trap '' SIGINT
while `true`;
do
    state=`check-if-all-ok`
        if [ "$state" = "up" ]; then
            echo "announce watchdog service-one"
        fi
        if [ "$state" = "down" ]; then
            echo "withdraw watchdog service-one"
        fi
        # pick its name from the process section name
        echo "announce watchdog"
        sleep 5
done
```

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Other usages ...

http://www.ukuug.org/events/spring2011/timetable/bgp.pdf

Get it ...

http://code.google.com/p/exabpg/

Questions ?

Answer : yes, It works with flow routes too

Judge a man by his questions rather than by his answers
Voltaire

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