Distributed OpenNetVM

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Scaling is Hard.

Crunch
DISRUPT SF
Pay to:

Scaling Networks is Harder.

Twitter is over capacity.

Please wait a moment and try again. For more information, check out **Twitter Status.**

Bahasa Indonesia Bahasa Melayu Deutsch English Español Filipino Français Italiano
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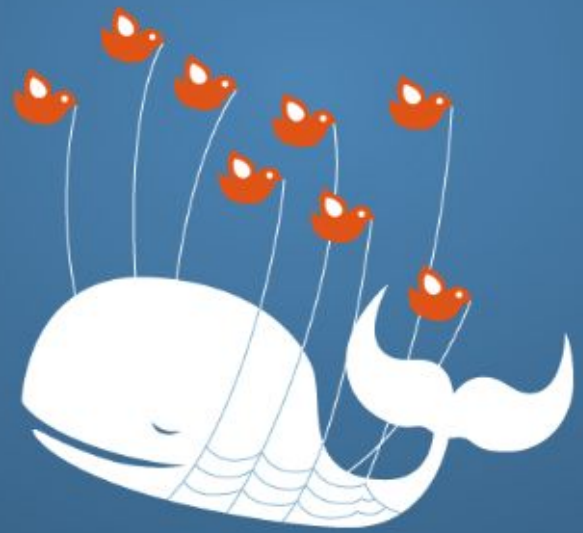
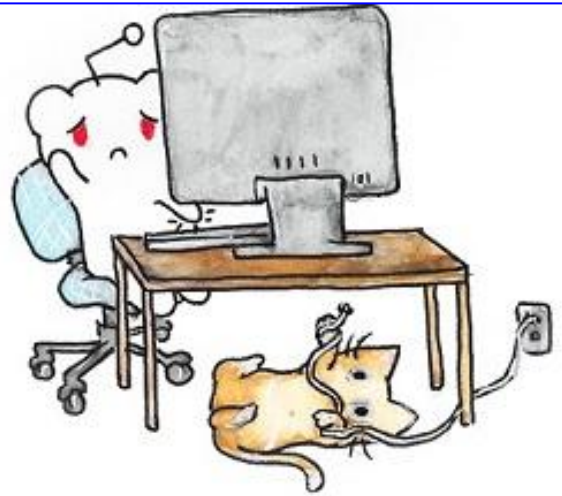


facebook

Sorry, something went wrong.

We're working on getting this fixed as soon as we can.



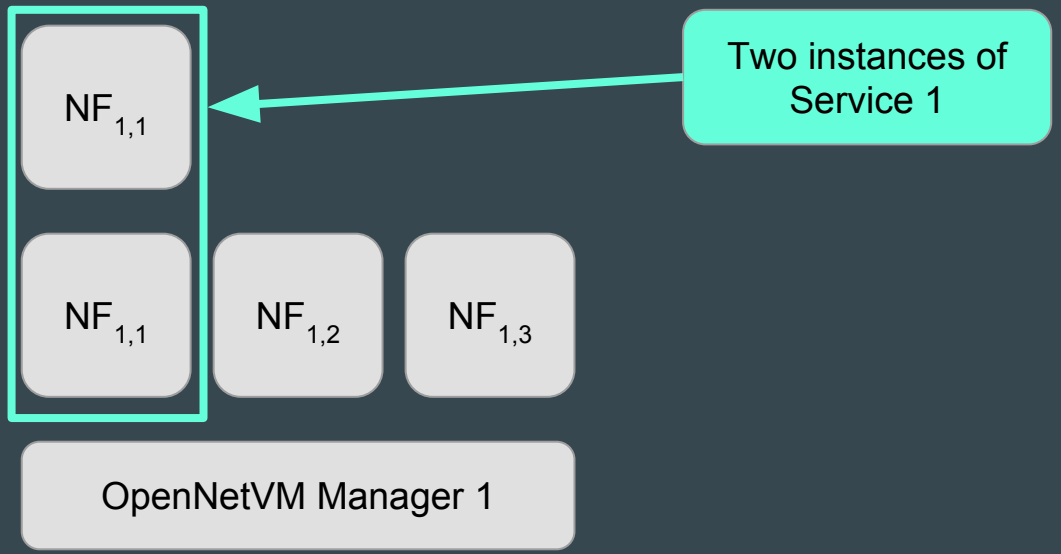
all of our servers are busy right now

please try again in a minute

(error code: 503)

Solution: Network Function Virtualization

- Abstract networking “building blocks” into software
- Can run multiple “building blocks” (services) on a single machine



Scaling is Expensive.

Software Defined Networking

Traditional Network		NFV Network	
Cisco Nexus 9000 (SDN Enabled Switch)	$80,000	Cisco Catalyst 4948 (10G Switch)	$1,000
		Dell PowerEdge R330	$1,000
		Intel x520 NIC	$200
Total:	$80,000	**Total:**	$2,200

35% Cheaper

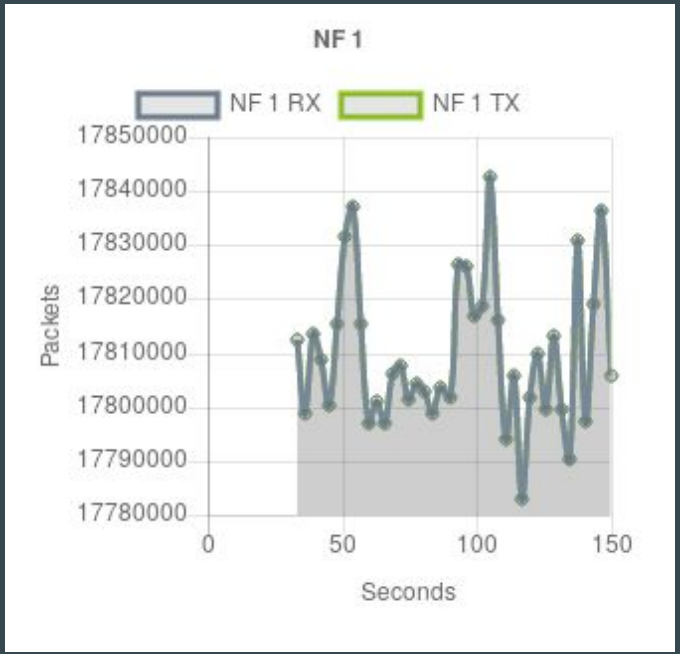
Load Balancing

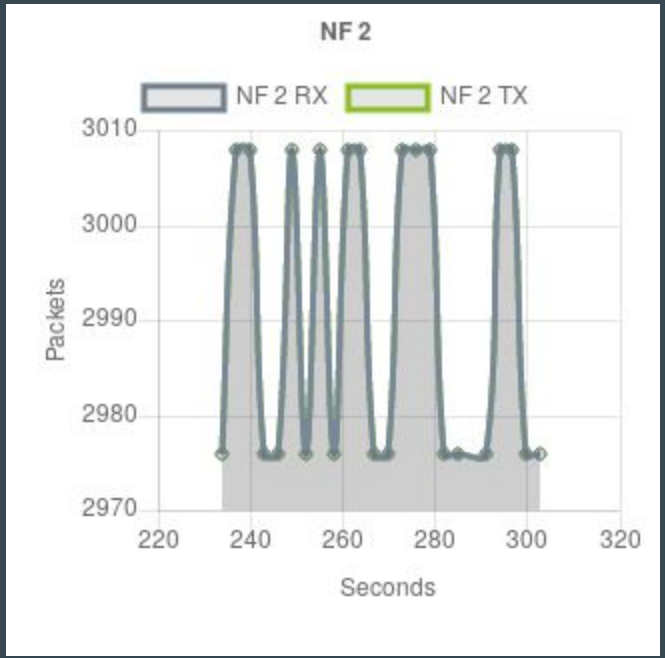
Traditional Network		NFV Network	
F5 VE-10G (Load Balancer)	$30,000	Dell PowerEdge R330	$1,000
		Intel x520 NIC (5x)	$1,000
Total:	$30,000	**Total:**	$2,000

14% Cheaper

Scaling *was* Expensive.

No Performance Loss.

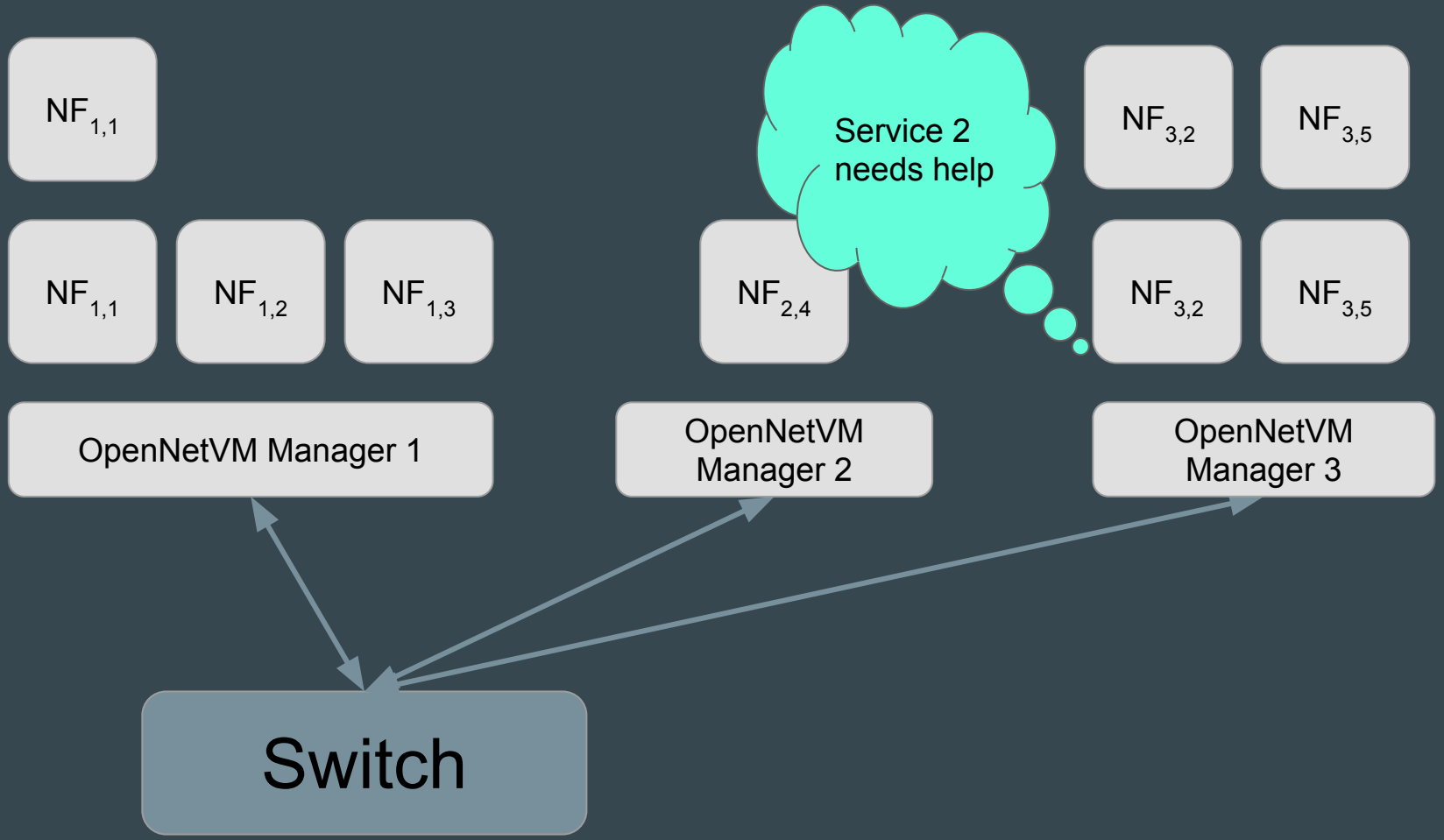

NF 1
NF 1 RX
NF 1 TX
17850000
17840000
17830000
17820000
17810000
17800000
17790000
17780000
Packets
0
50
100
150
Seconds


NF 2
NF 2 RX
NF 2 TX
3010
3000
2990
2980
2970
Packets
220
240
260
280
300
320
Seconds

Scaling is Hard.

Scaling is Hard.

... So do it insta-magically!


NF1,1
NF1,1
NF1,2
NF1,3
Service 2
needs help
NF3,2
NF3,5
NF2,4
NF3,2
NF3,5
OpenNetVM Manager 1
OpenNetVM
Manager 2
OpenNetVM
Manager 3
Switch

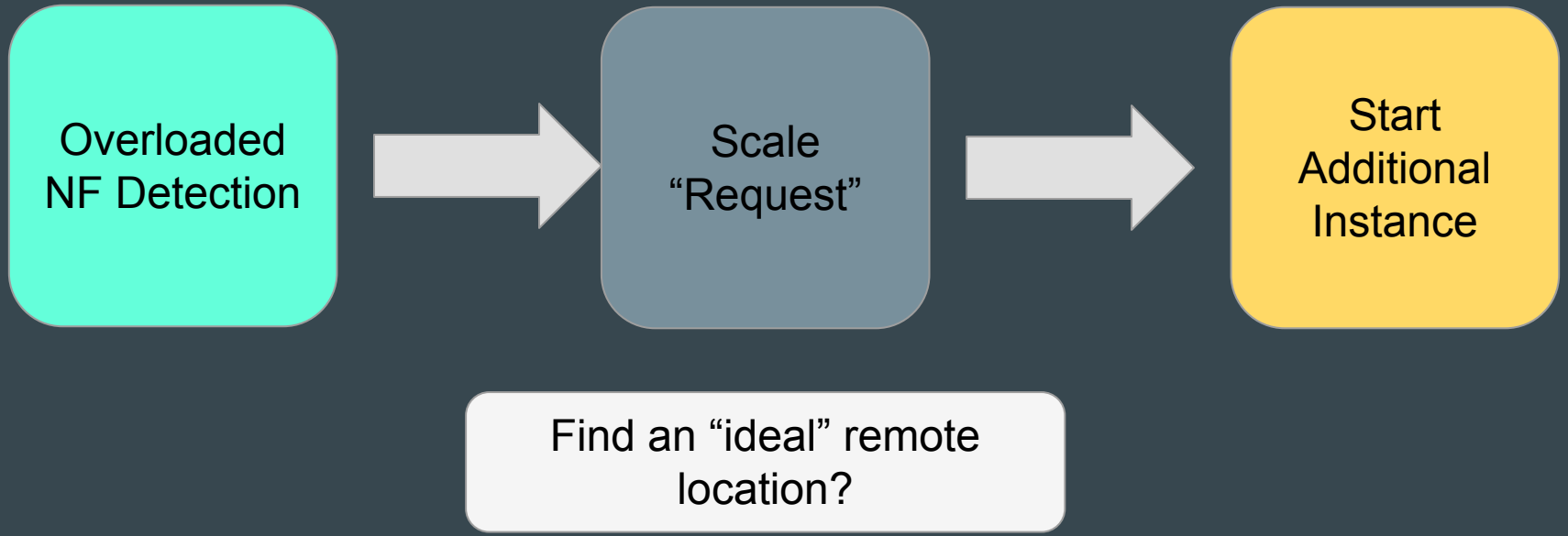
What Data Needs Tracking?

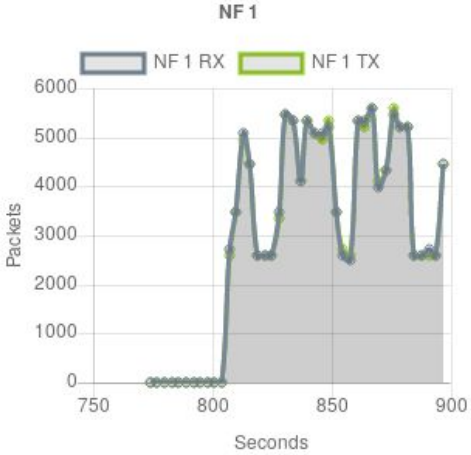
Running ONVM Instances

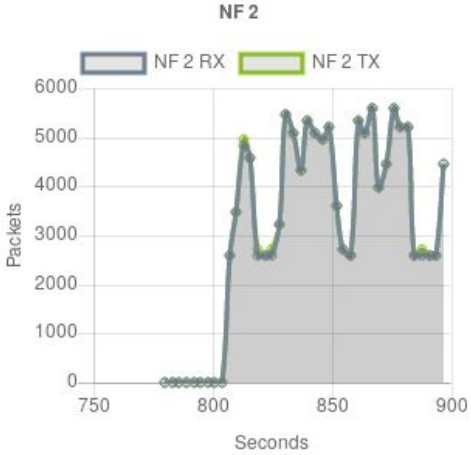
Service to Instance Map

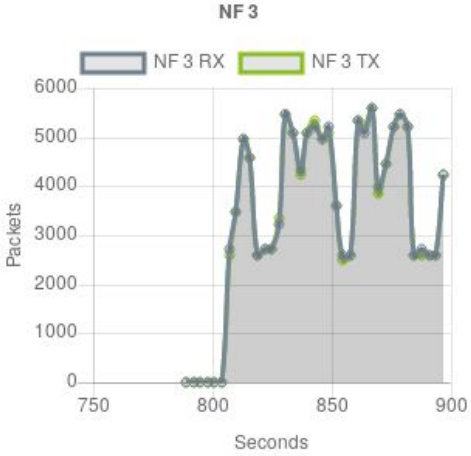
NF Instance Stats

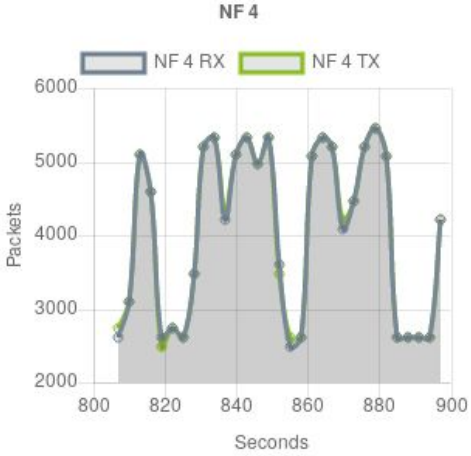
Auto-Scaling NFs




NF 1
NF 1 RX
NF 1 TX
Packets
Seconds
0
1000
2000
3000
4000
5000
6000
750
800
850
900


NF 2
NF 2 RX
NF 2 TX
Packets
Seconds
0
1000
2000
3000
4000
5000
6000
750
800
850
900


NF 3
NF 3 RX
NF 3 TX
Packets
Seconds
0
1000
2000
3000
4000
5000
6000
750
800
850
900


NF 4
NF 4 RX
NF 4 TX
Packets
Seconds
2000
3000
4000
5000
6000
800
820
840
860
880
900

Scaling is Easy.

Scaling is Cheap.

Scaling is Easy.

Scaling is Cheap.

Scaling is Easy.

Scaling is Performant.

Distributed OpenNetVM

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Defy Conventional Wisdom