Distributed OpenNetVM

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Scaling is Hard.


DISRUPT SF
Pay to:

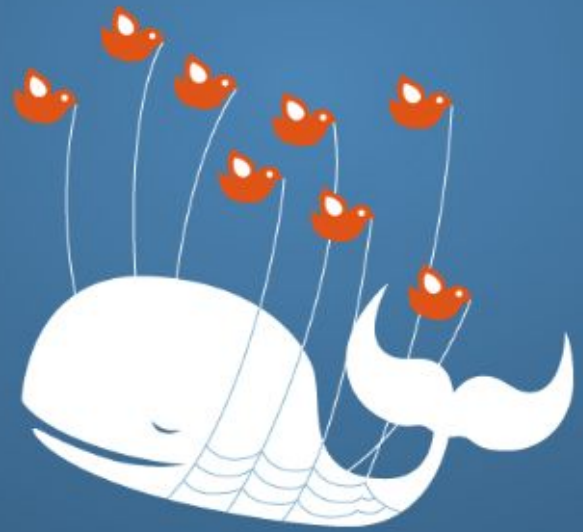
Scaling Networks is Harder.

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
Nederlands Português Türkçe Русский हिन्दी 日本語 简体中文 繁體中文 한국어

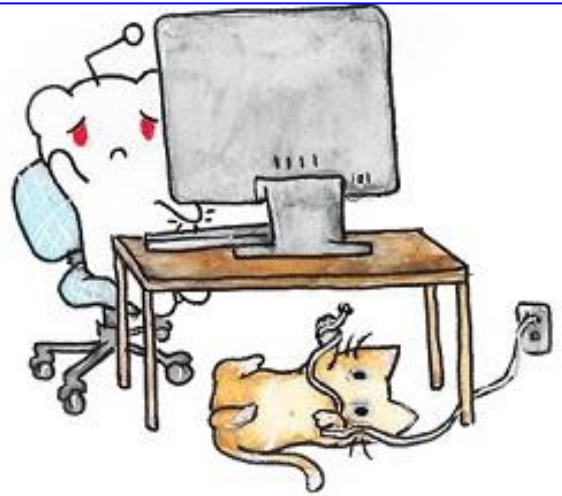
 About Help Status



facebook

Sorry, something went wrong.

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



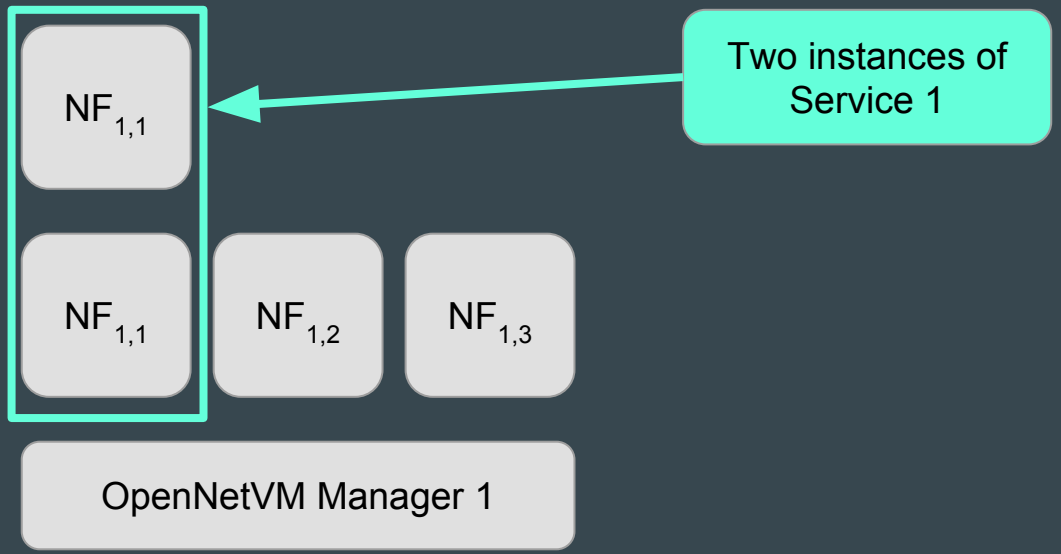
all of our servers are busy right now

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
- These replace traditional hardware appliances (firewall, load balancer, IDS, ...)



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

36x Cheaper

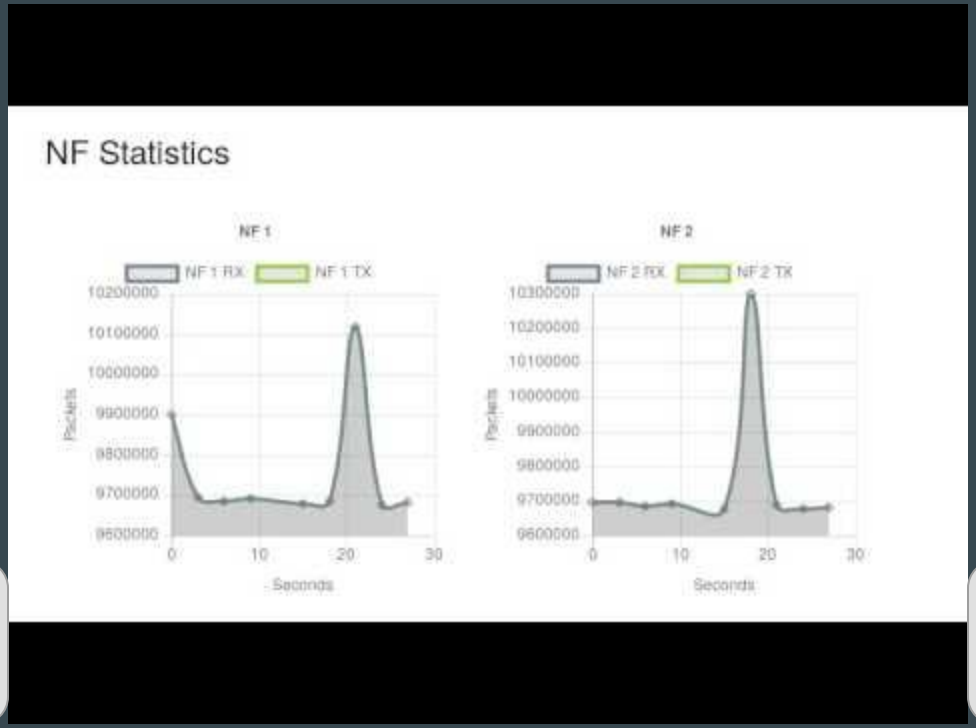
Load Balancing

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

15x Cheaper

Scaling *was* Expensive.

No Performance Loss.

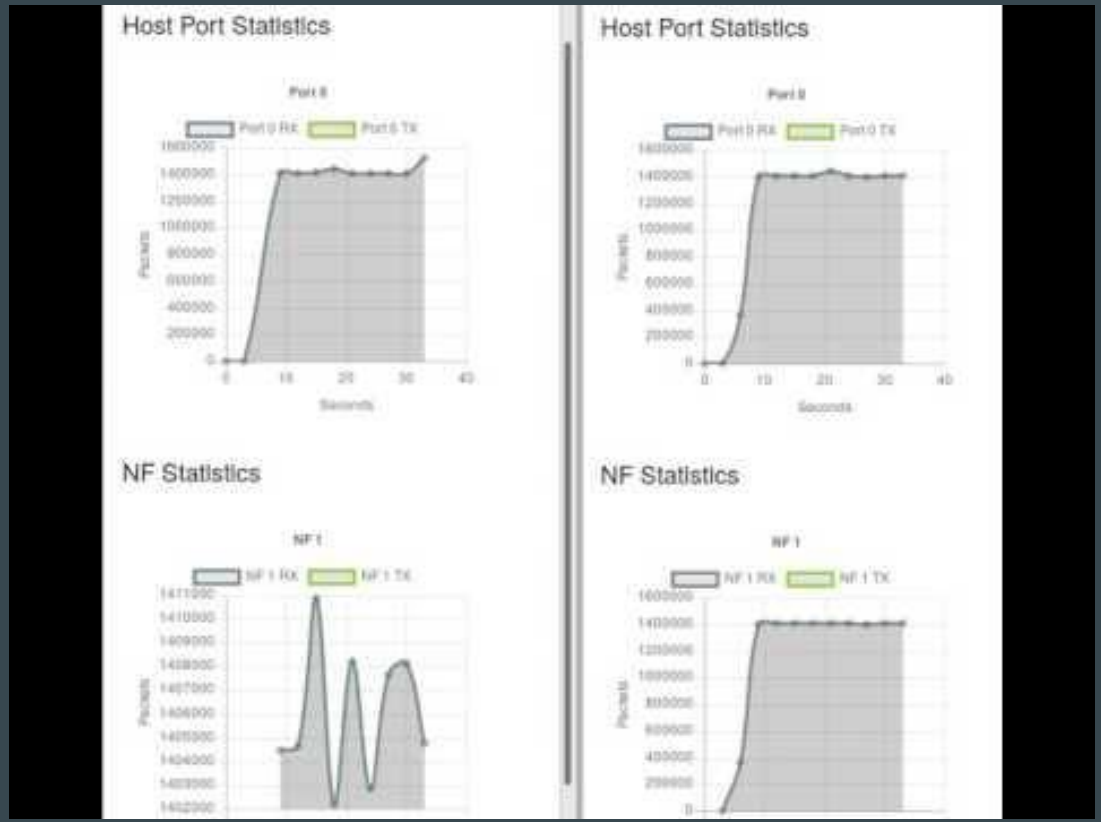


NF1: Perf. Tester

NF2: “Bounce”

OpenNetVM Manager 1

More Flexible.



NF1: Perf. Tester

NF1: “Bounce”

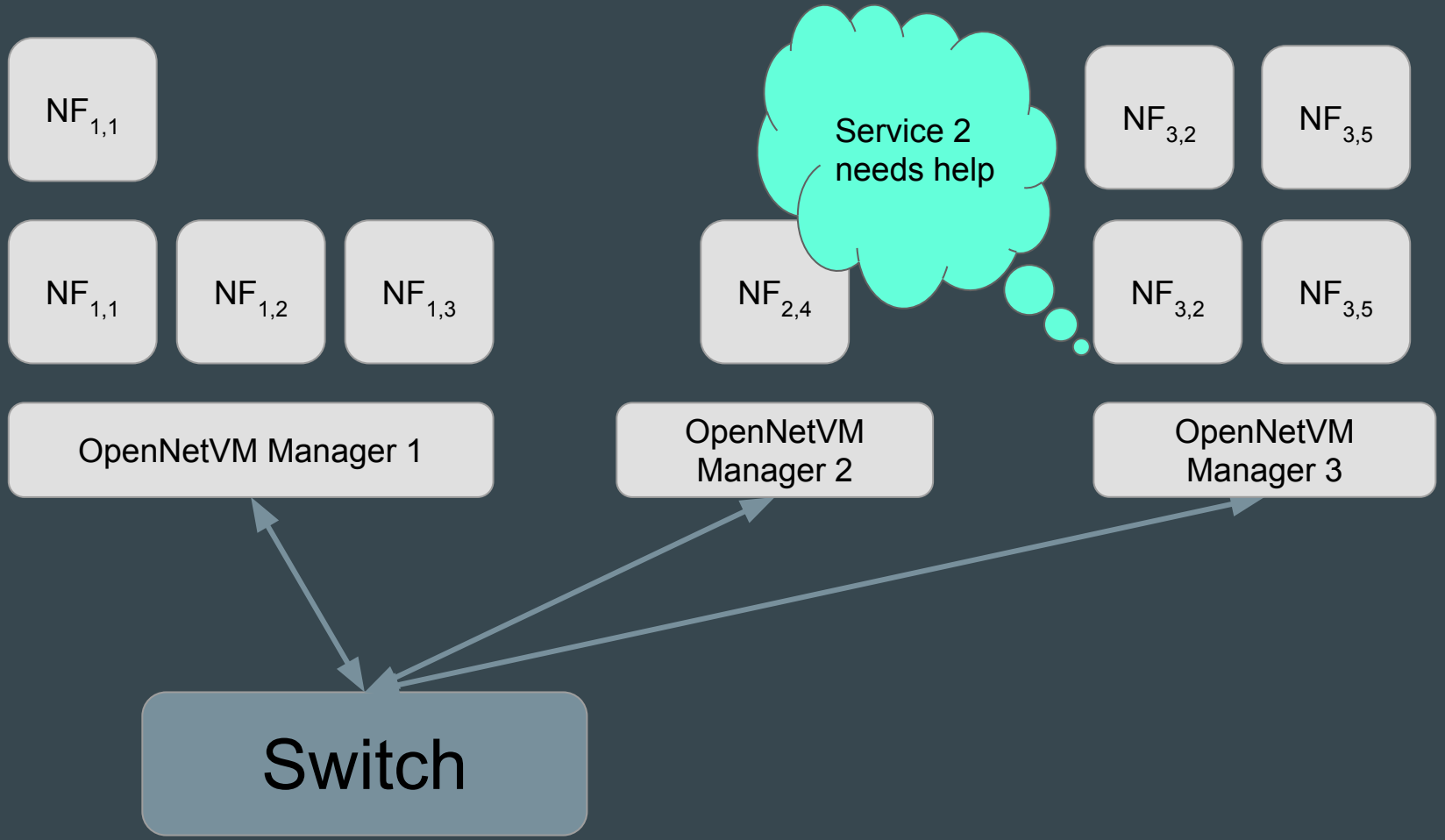
OpenNetVM Manager 1

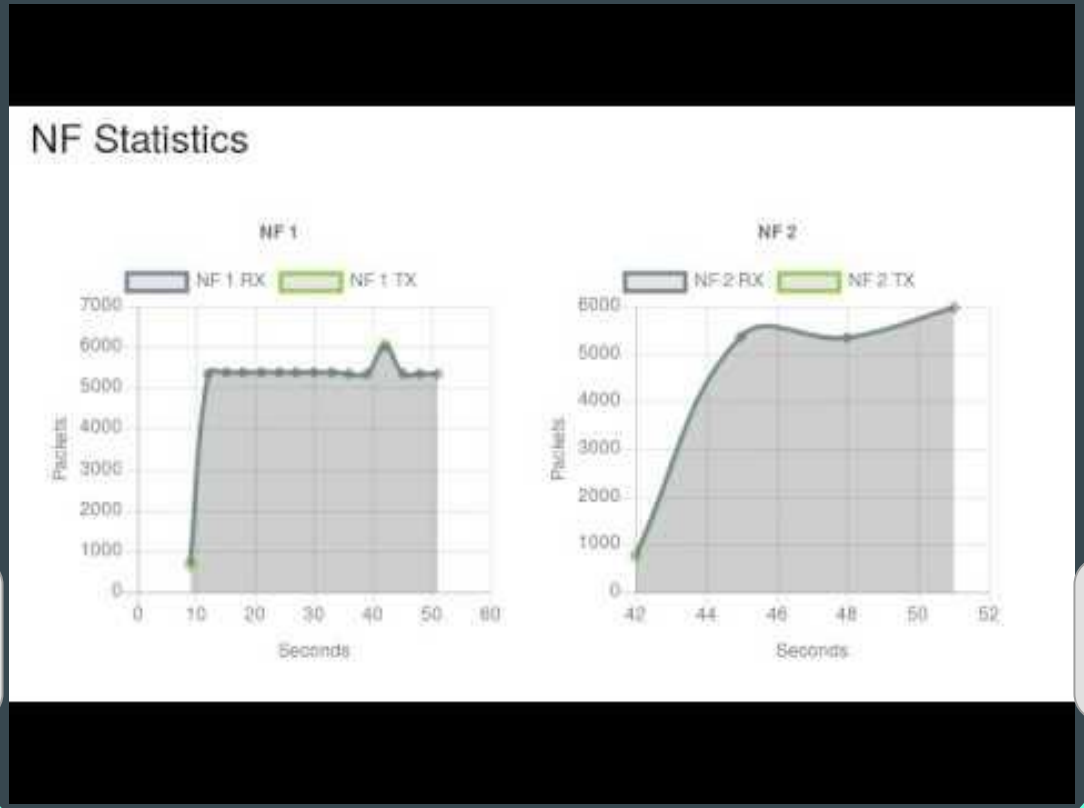
OpenNetVM Manager 2

Scaling is Still Hard.

Scaling is Still 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



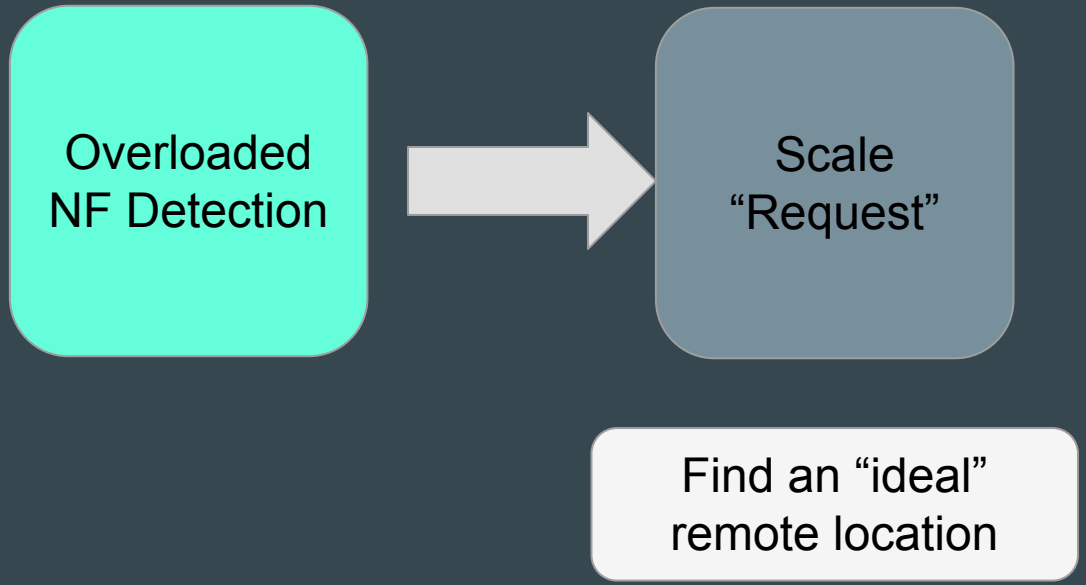
NF1: "Slow Thing"

NF2: "Slow Thing"

OpenNetVM Manager 1

What Data Needs Tracking?

Auto-Scaling NFs

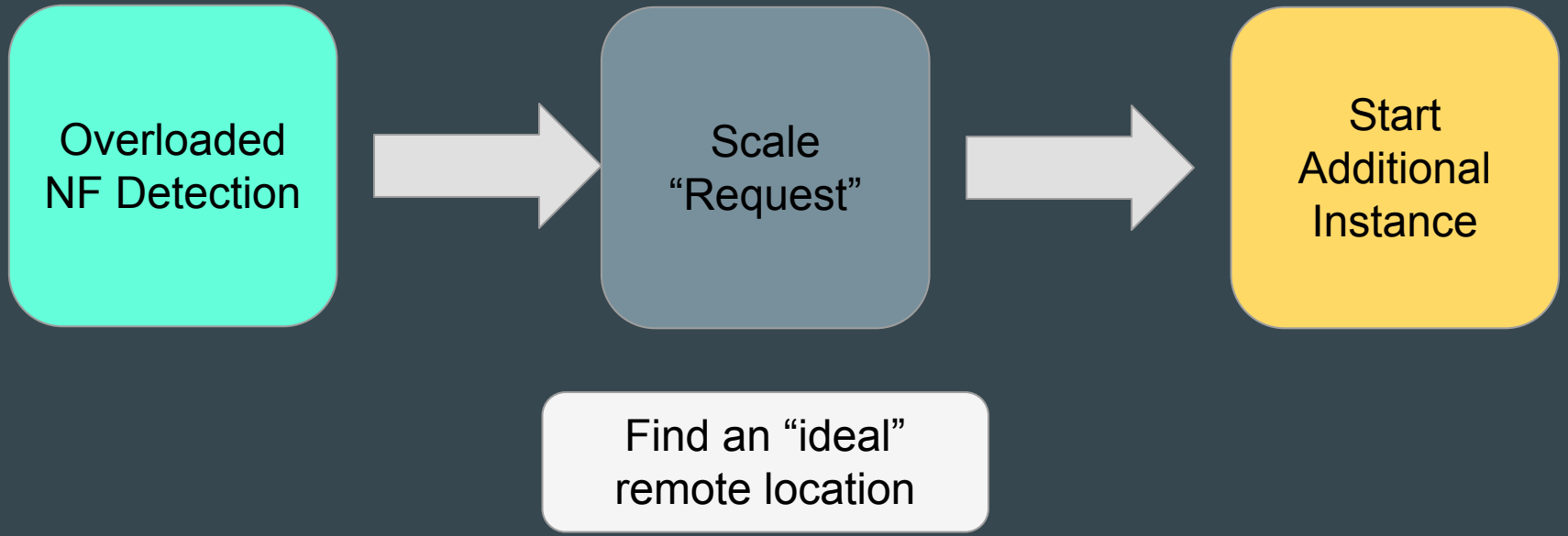


Auto-Scaling NFs

- Track which hosts have unused cores
- Find a host that already has this service running
- Choose the one with the most free cores
- Prefer to scale locally if possible (less network overhead)

Find an “ideal” remote location

Auto-Scaling NFs



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