Distributed OpenNetVM

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Scaling is Hard.


DISRUPT SF
Pay to:

Scaling Network Infrastructure 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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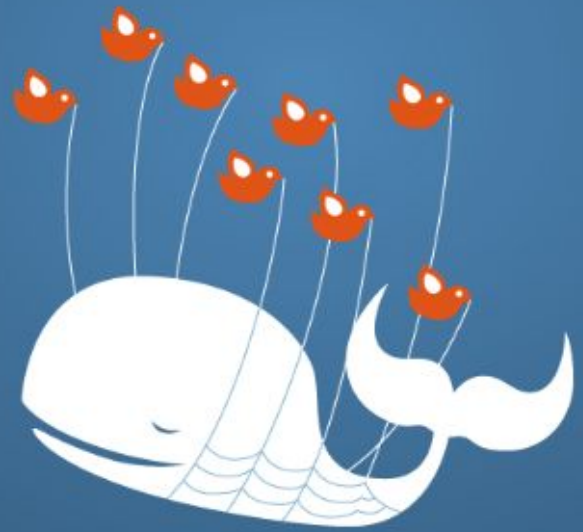
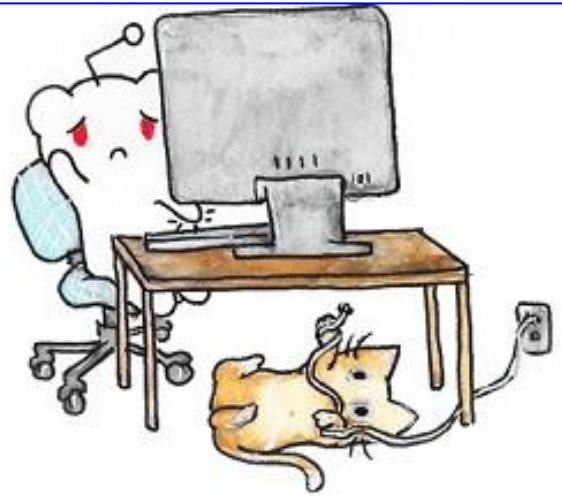
 About Help Status



facebook

Sorry, something went wrong.

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



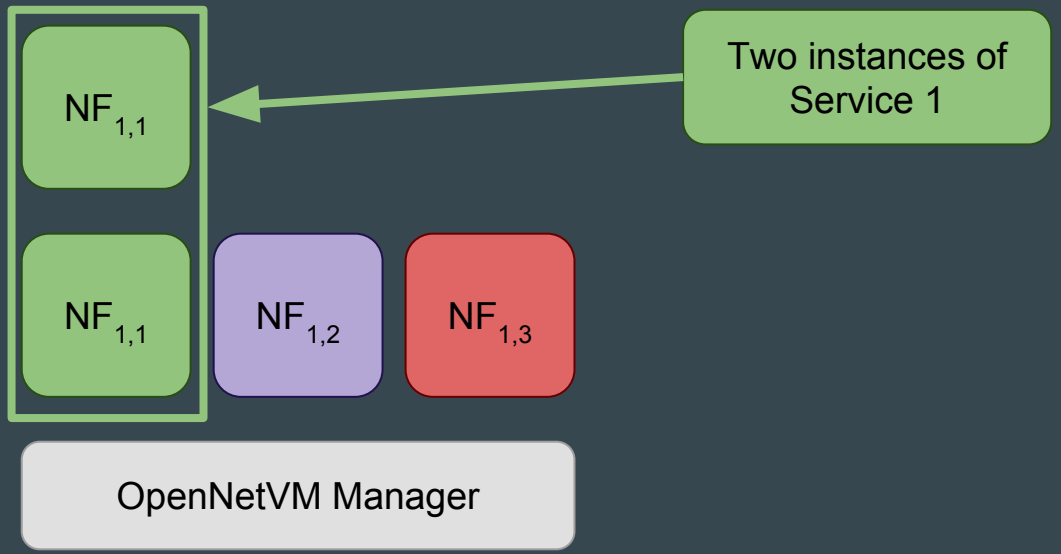
all of our servers are busy right now

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

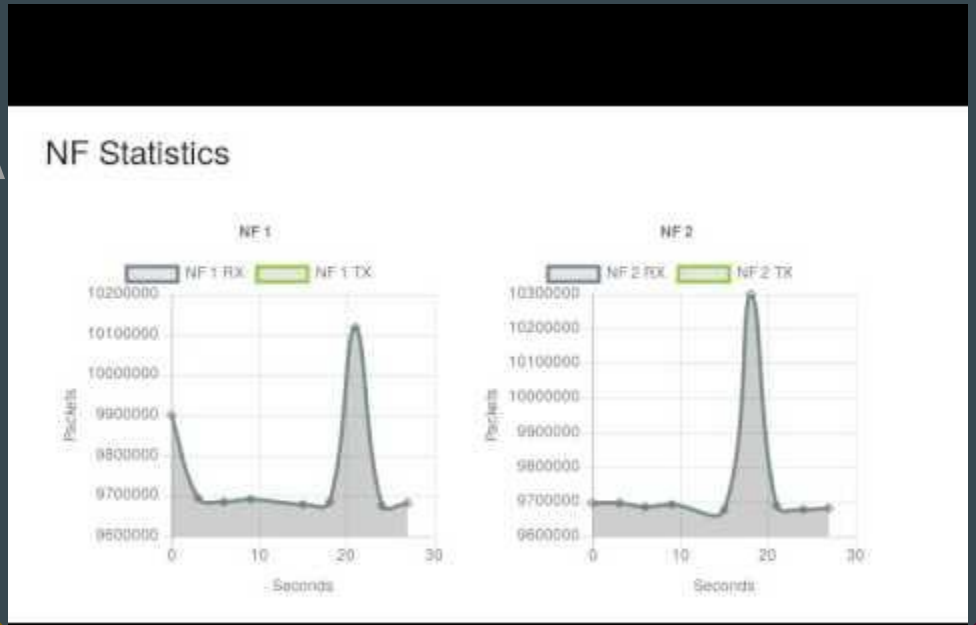
15x Cheaper

Ditch “The Box”

NFV is More Flexible.

NFV is Cheaper.

NFV is Just As Fast.



Packets per Second

Time (seconds)

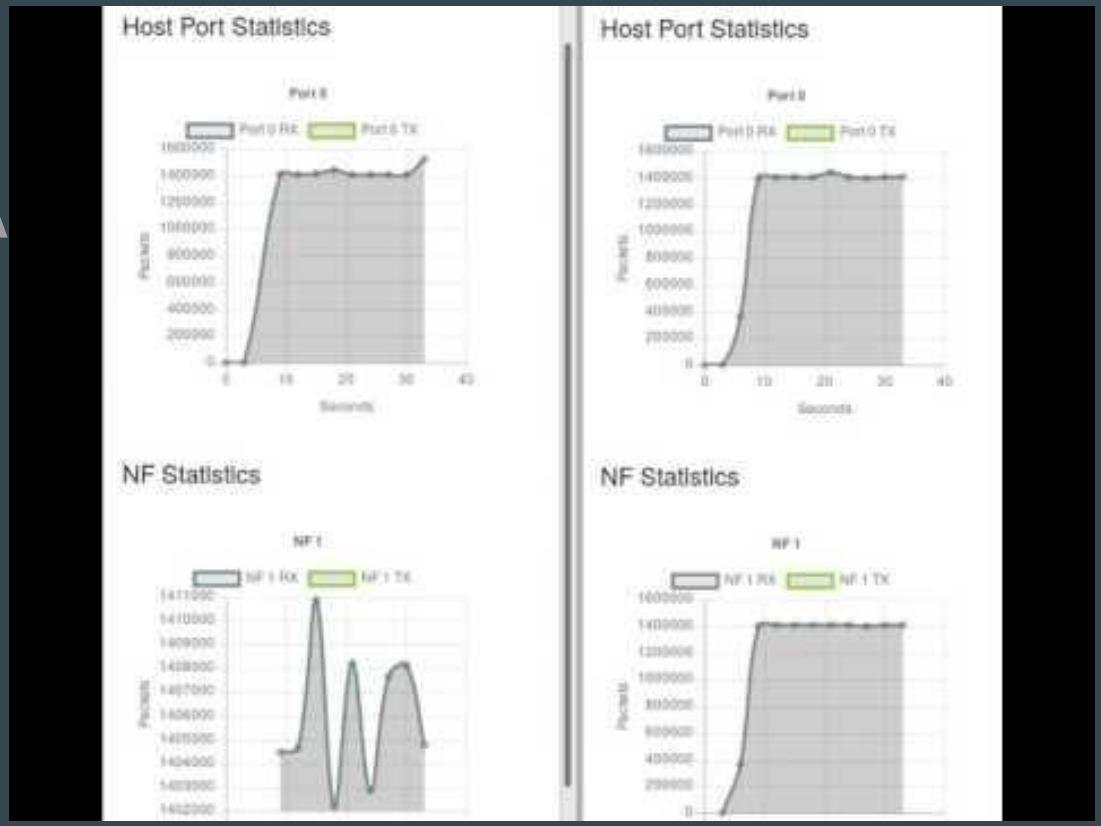
NF1: Perf. Tester

NF2: “Bounce”

OpenNetVM Manager 1

One Machine is Limiting.

... So let's use more!



NF1: Perf. Tester

NF1: “Bounce”

OpenNetVM Manager 1

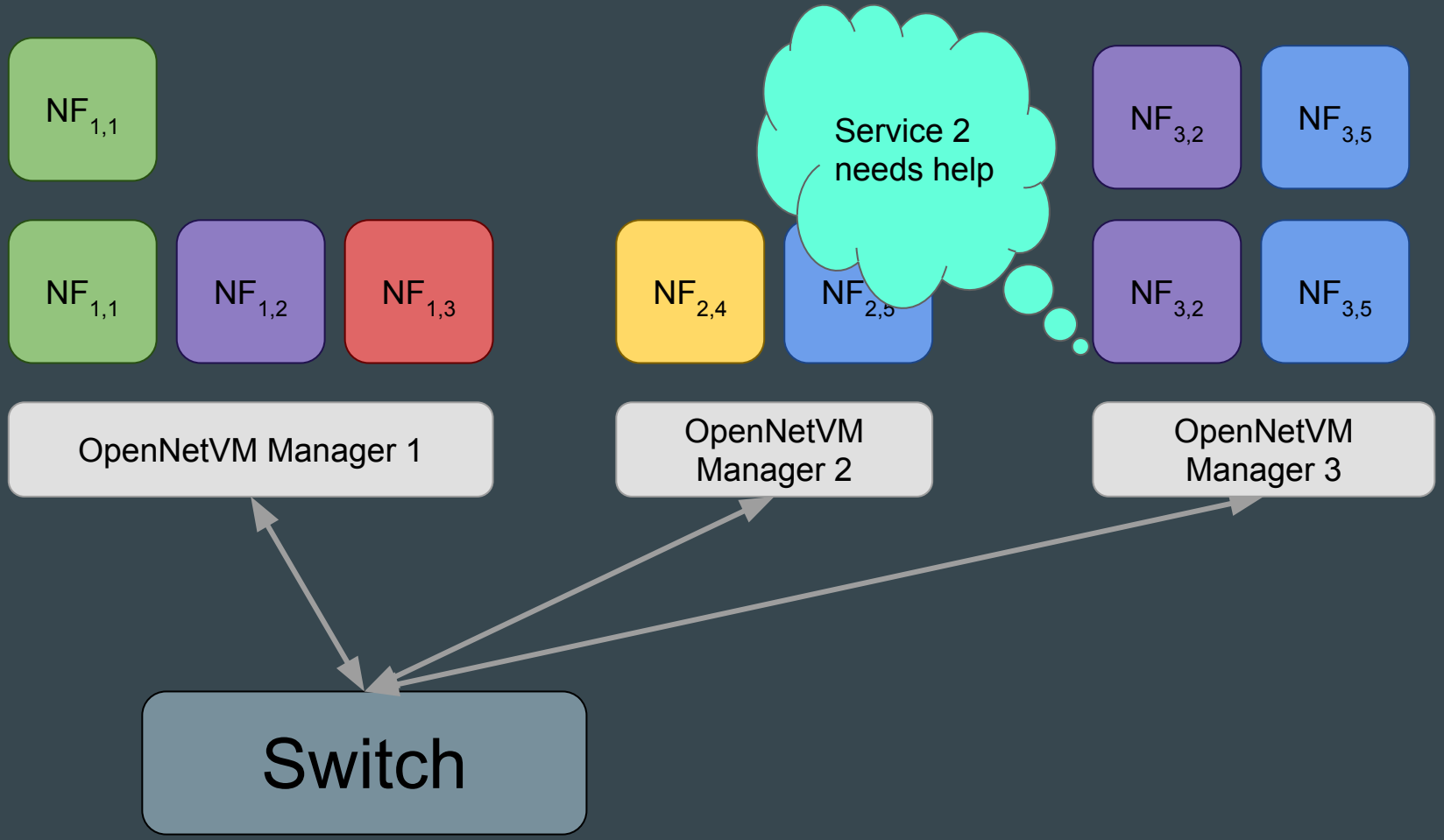
Switch

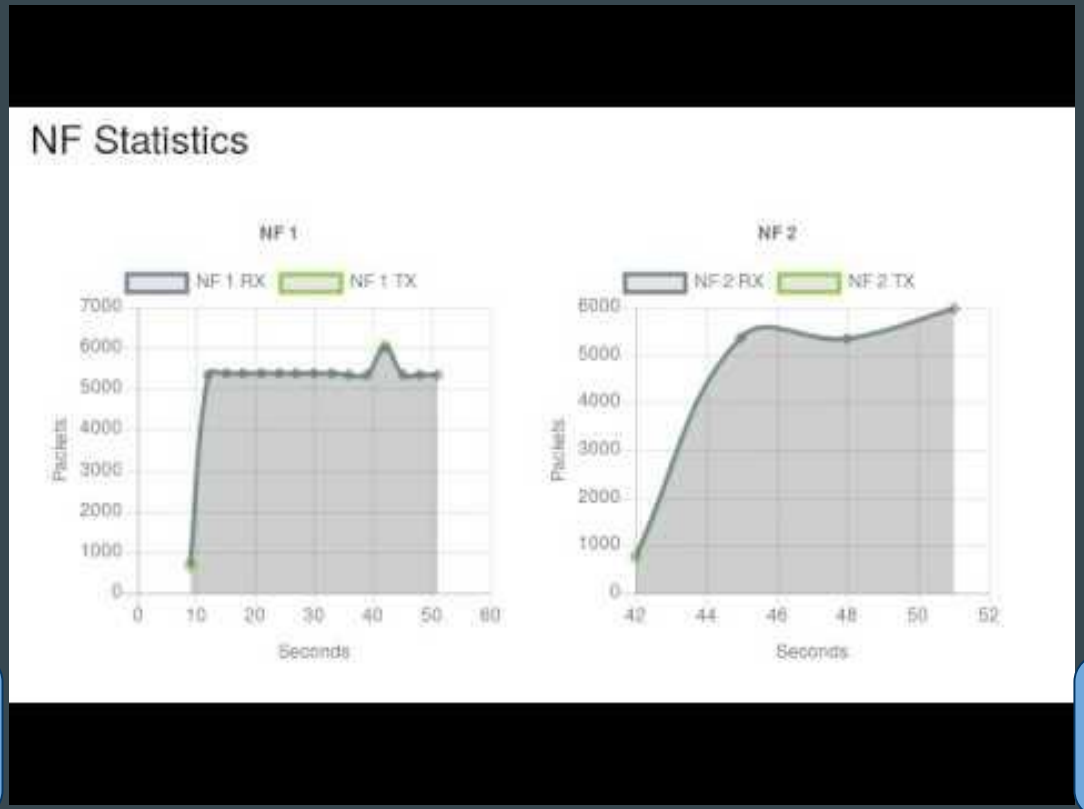
OpenNetVM Manager 2

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
NF2,4
NF2,5
NF3,2
NF3,5
NF3,2
NF3,5
OpenNetVM Manager 1
OpenNetVM
Manager 2
OpenNetVM
Manager 3
Switch



Packets per Second

NF1: Security Monitor

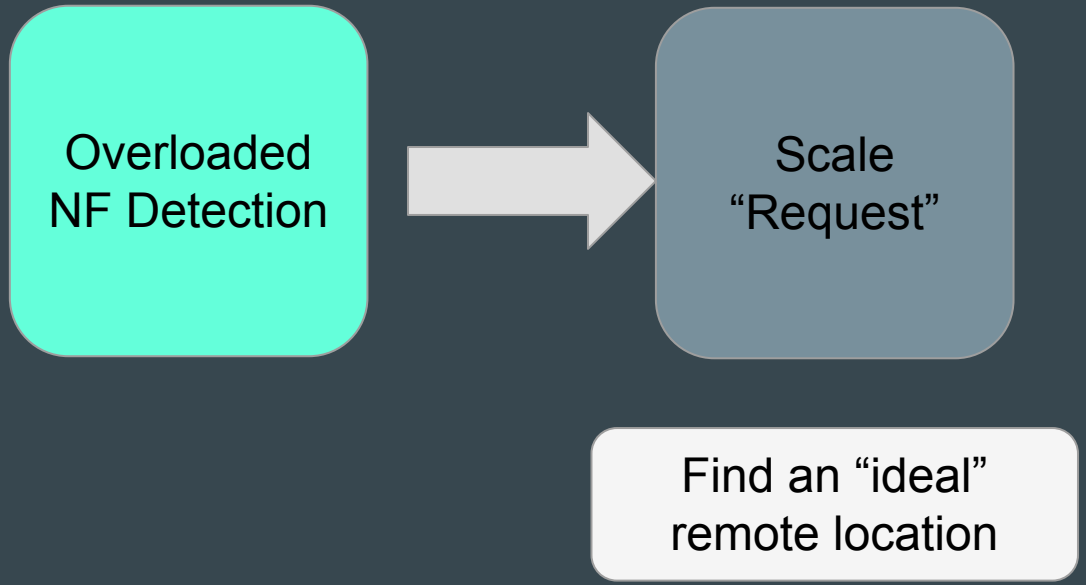
NF2: Security Monitor

Time (seconds)

OpenNetVM Manager

What Data Needs Tracking?

Auto-Scaling NFs

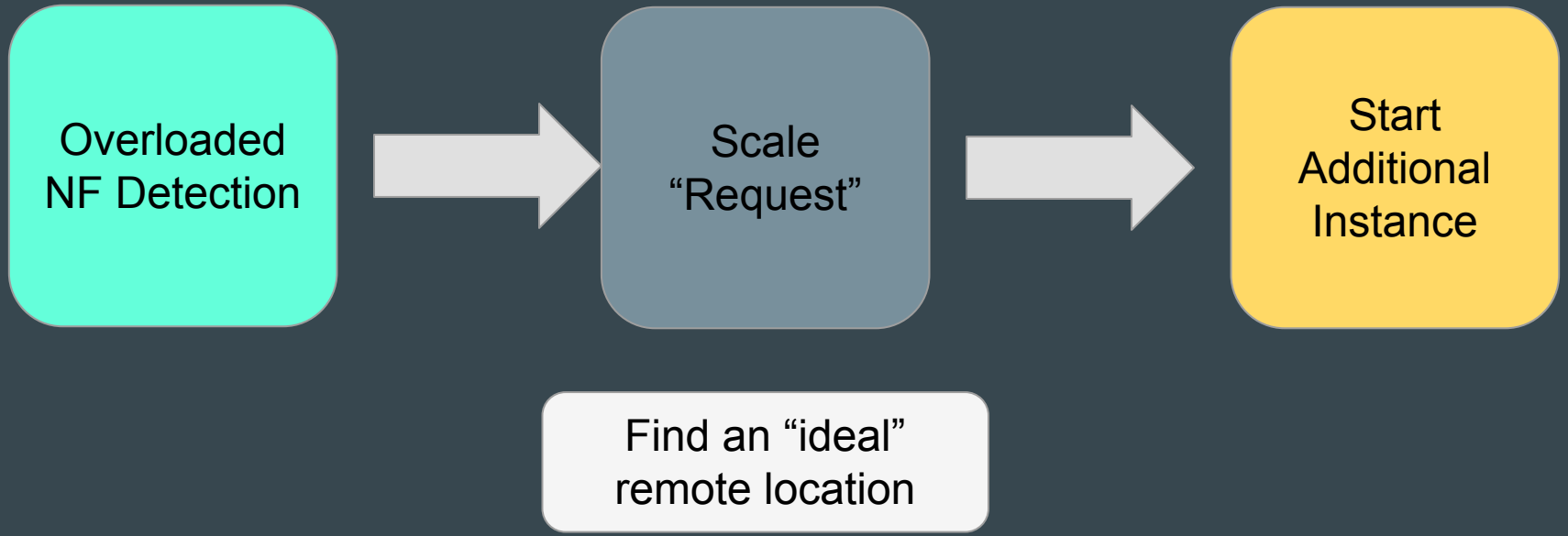


Auto-Scaling NFs

- Track which hosts have resources available (and how much)
- Find a host that already has the desired service running
- Choose the one with the most available CPU resources
- Prefer to scale locally if possible (less network overhead)

Find an “ideal” remote location

Auto-Scaling NFs



Scaling is Cheap.

Scaling is Easy.

Scaling is Performant.

Distributed OpenNetVM

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Defy Conventional Wisdom