Service Starts Suck

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V.P. Ubiquiti Networks

Beware the Black Swan

The Business

- Phone services for SMBs

The Business

- Phone services for SMBs
- *Hosted* Phone services for SMBs

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- *Hosted Cloud Communications* service for SMBs

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HUH WHAT?

MTCE
TONE-
CLOCK
1
EXPN
INTFC
2
EXPN
INTFC
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
POWER UNIT
POWER SUPPLY

vmware®

The Metrics

- Phone Calls per Second

The Metrics

- Phone Calls per Second

x 1000

The Metrics

- Simultaneous Phone Calls

The Metrics

- Simultaneous Phone Calls

x 10,000

The Metrics

The Metrics

- HTTP API requests

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The Metrics

- Big pipes

The Infrastructure

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- Polyglot (Erlang, Java, Ruby, Perl,…)

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The Infrastructure

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- Polyglot (Erlang, Java, Ruby, Perl,…)
- Loosely Coupled Systems
- Multi-site / Multi-cluster

My Vacation

(Actually, the day before)

A *small* failure…

photosinbox.com

SYSTEM FAILURE
The Horror! The Horror!

The Infrastructure

- Big pipes
- Polyglot (Erlang, Java, Ruby, Perl,…)
- Loosely Coupled Systems
- Multi-site / Multi-cluster

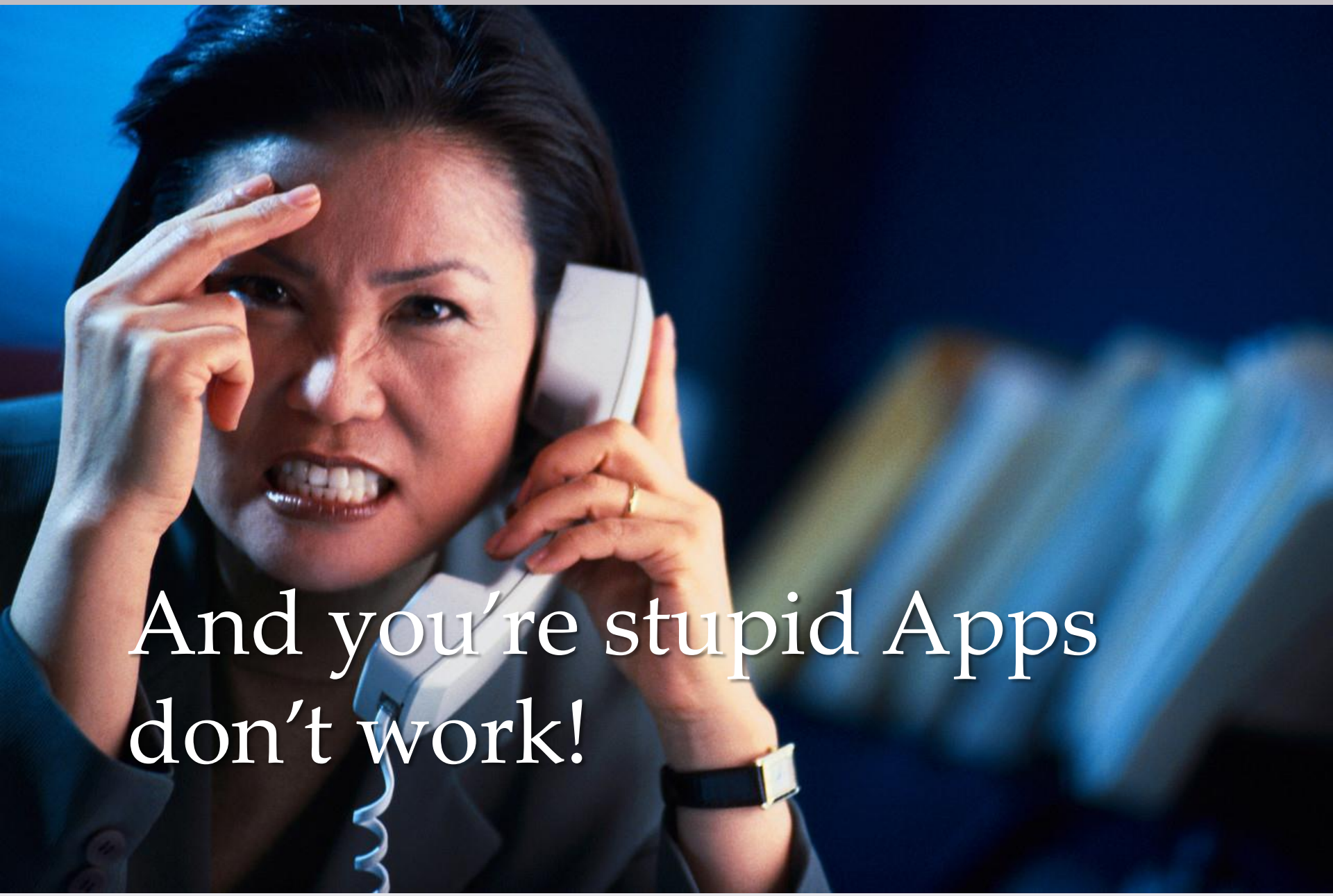
- Big pipes
- Polyglot (Erlang, Java, Ruby, Perl,…)
- **Loosely Coupled Systems**
- Multi-site / Multi-cluster

The Infrastructure

Why are my calls failing?

You better call me back!

I’m still p***ed off!


And you're stupid Apps
don't work!

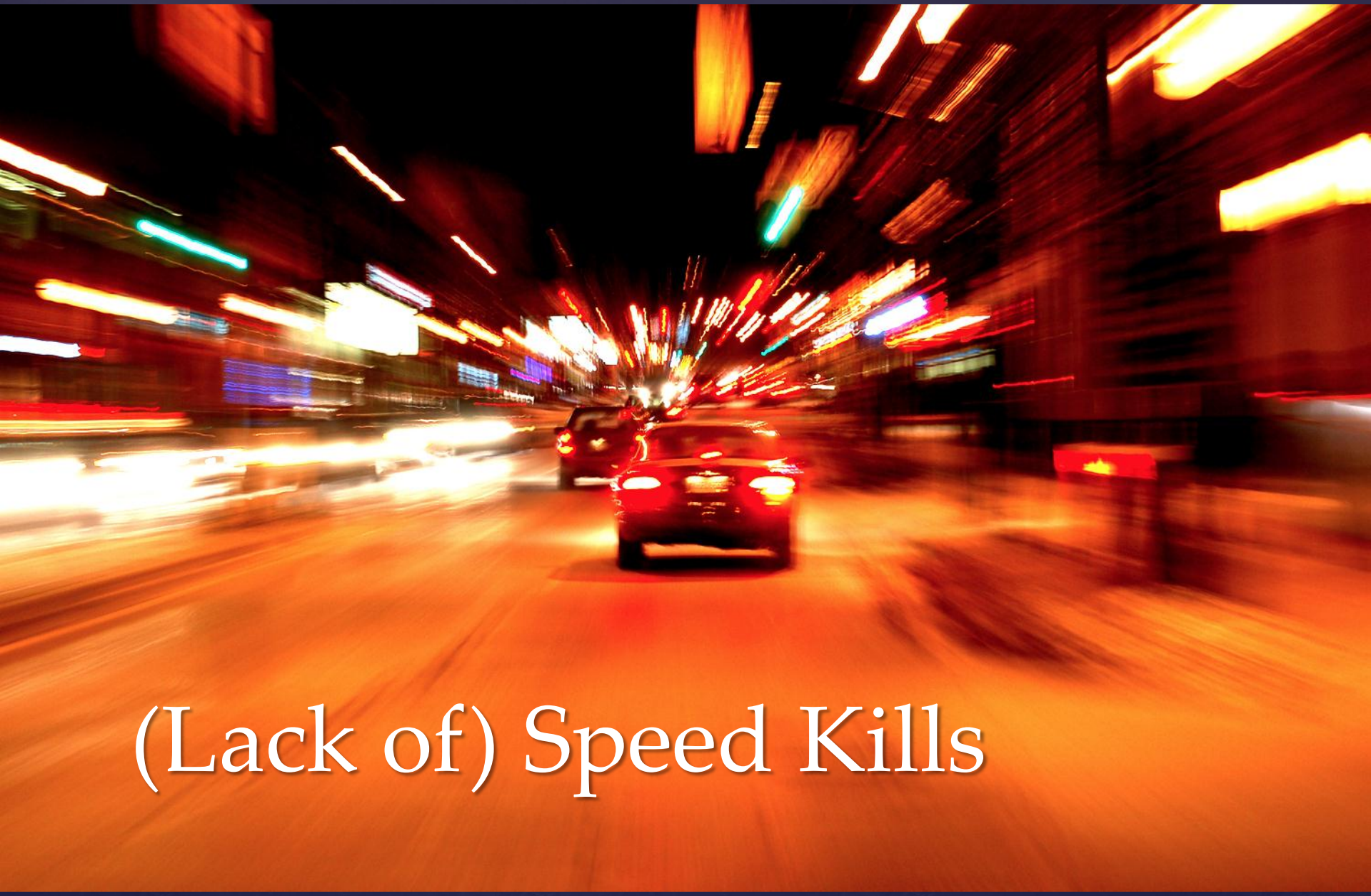
SYSTEM FAILURE
The Horror! The Horror!

Surely you Tested?

1000 year floods

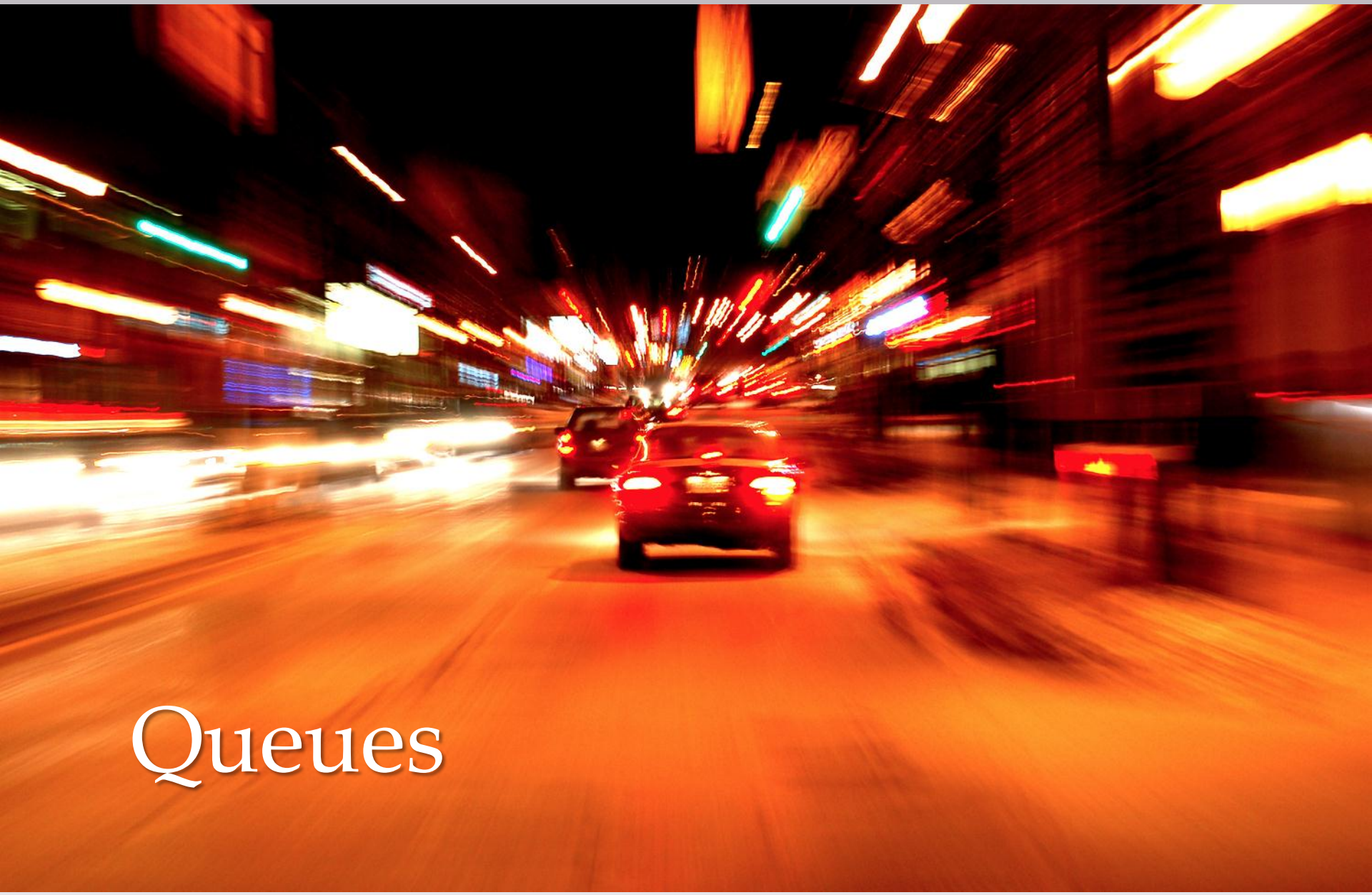
ack Obama
For
President
2008

Romney 2012

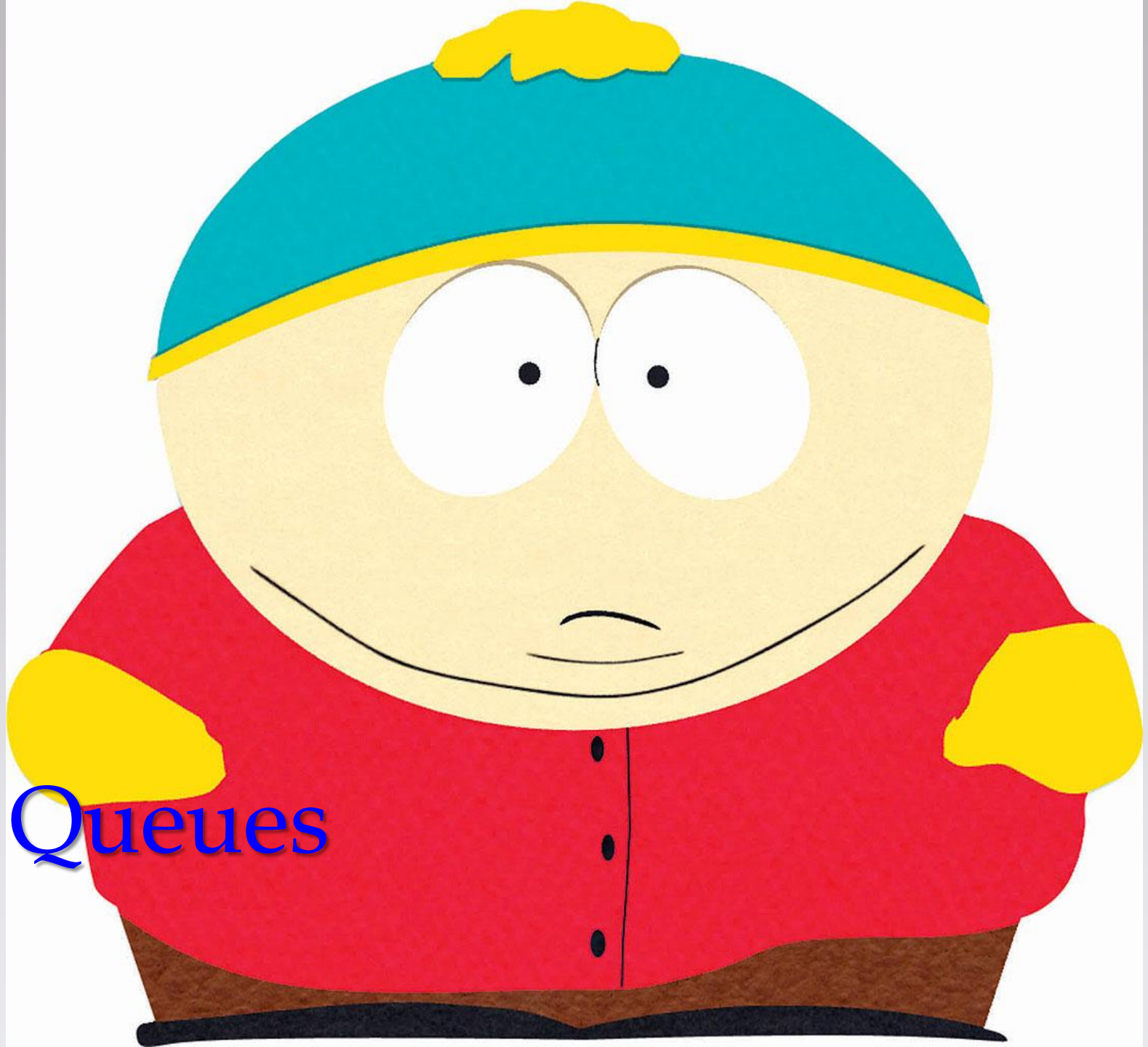


(Lack of) Speed Kills

Queues


Queues

Queues



Queues

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- Can you recover quickly?
- Buffer-bloat doesn't matter, right?
- Once up, can you deal with the backlog?
- Back-pressure isn't an issue, right?

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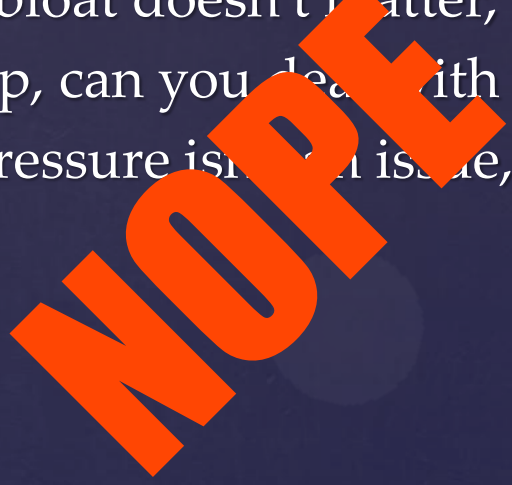
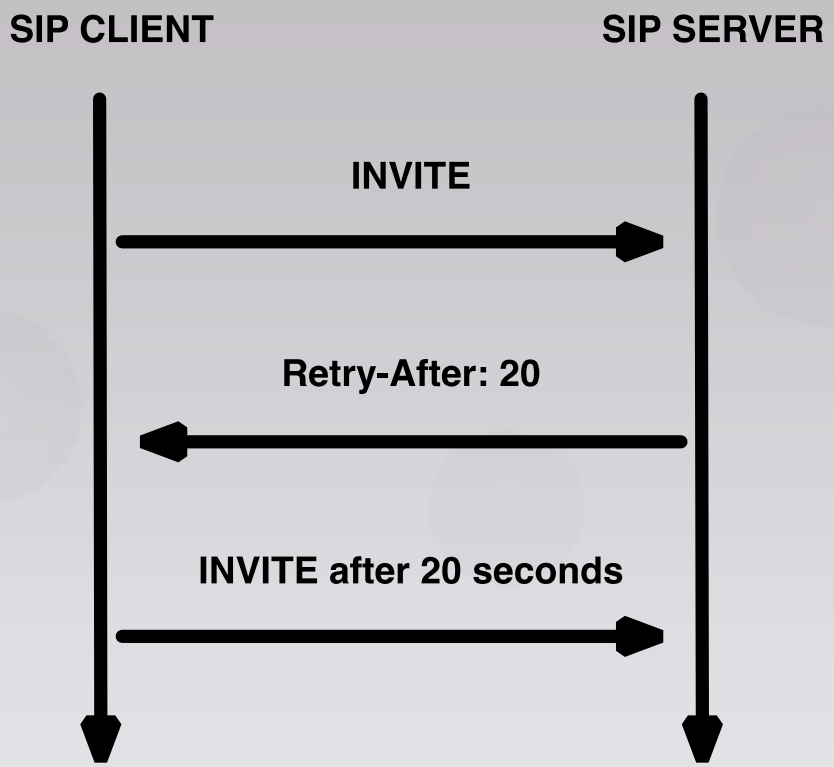
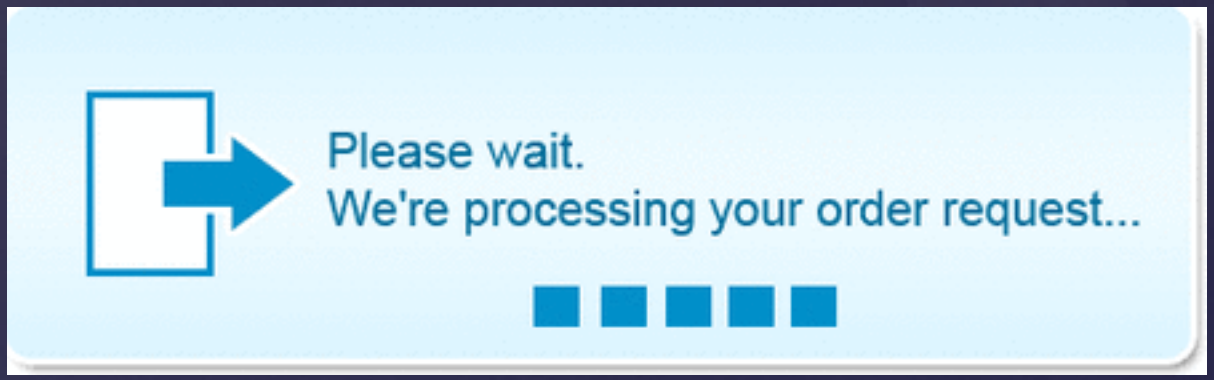




Programmable

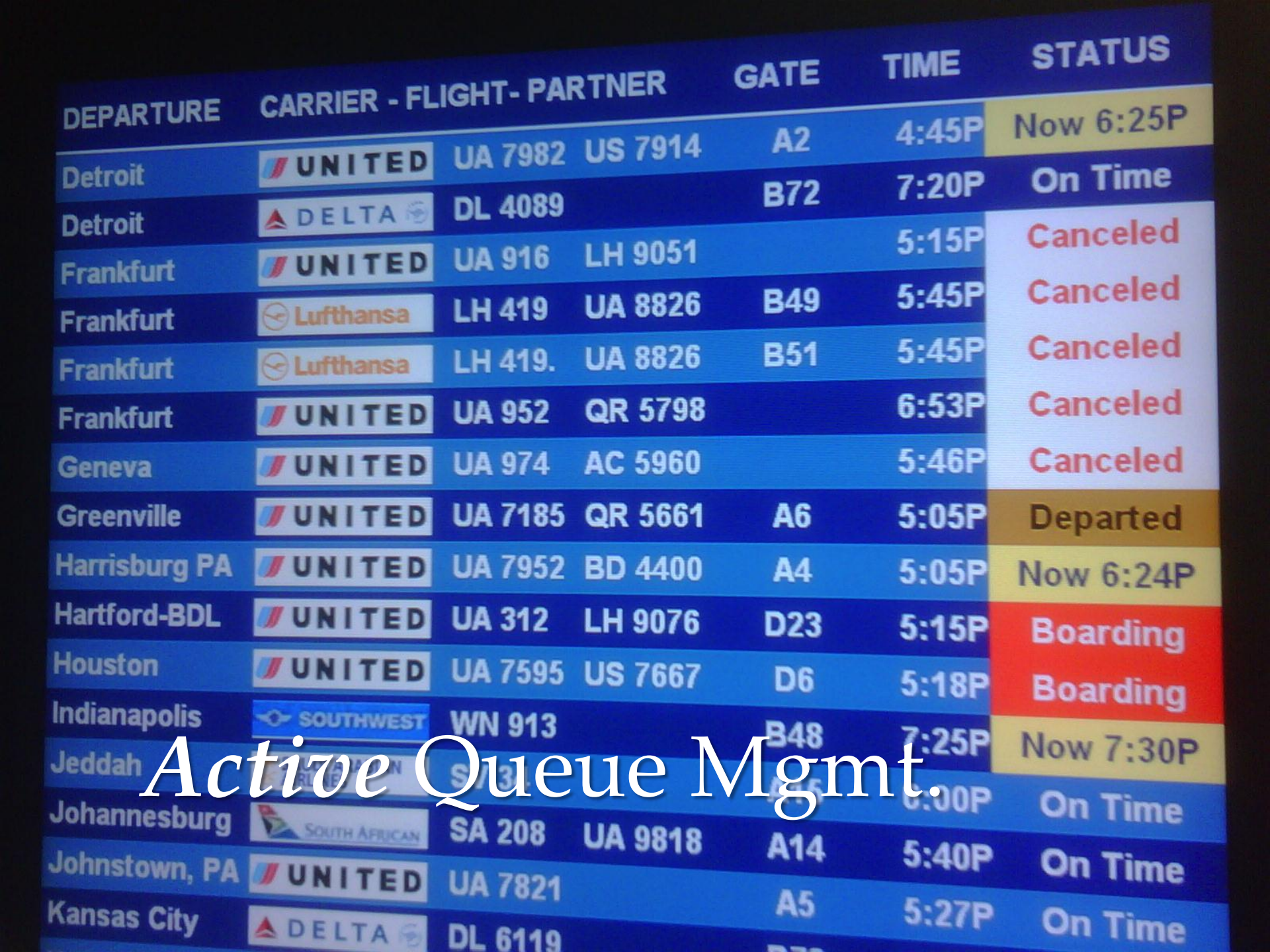


Behavioral

Self Managed

Self Managed

Queue Mgmt.



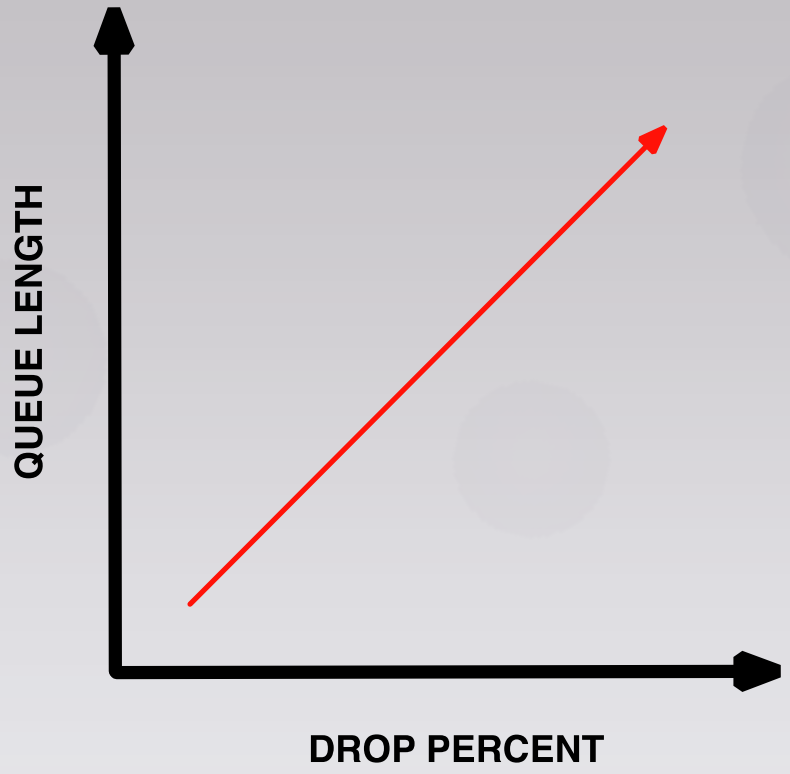
Active Queue Mgmt.

Something's gotta give

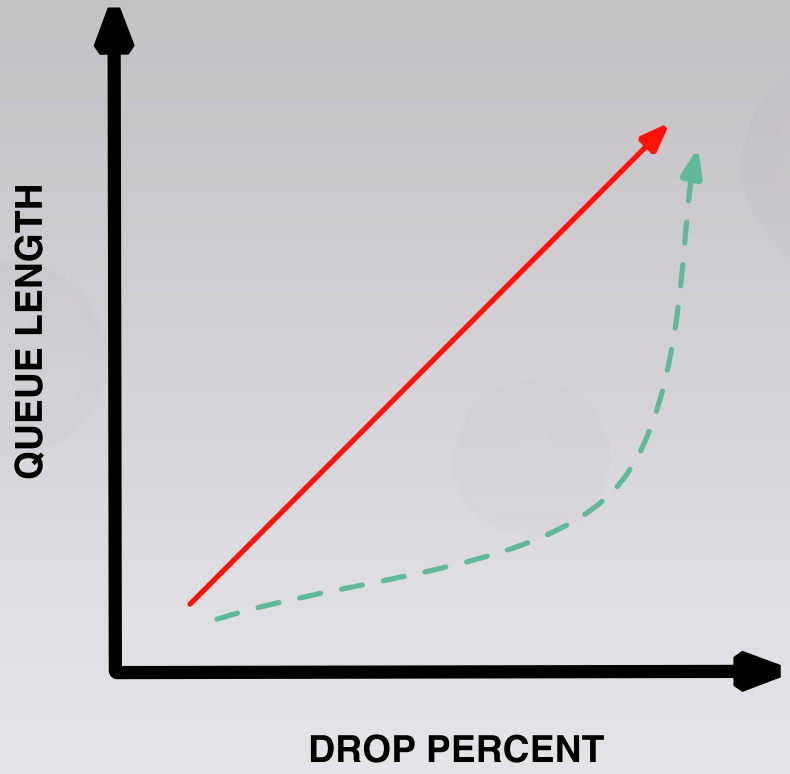
Tail Drop

God

(category – TCP/IP)

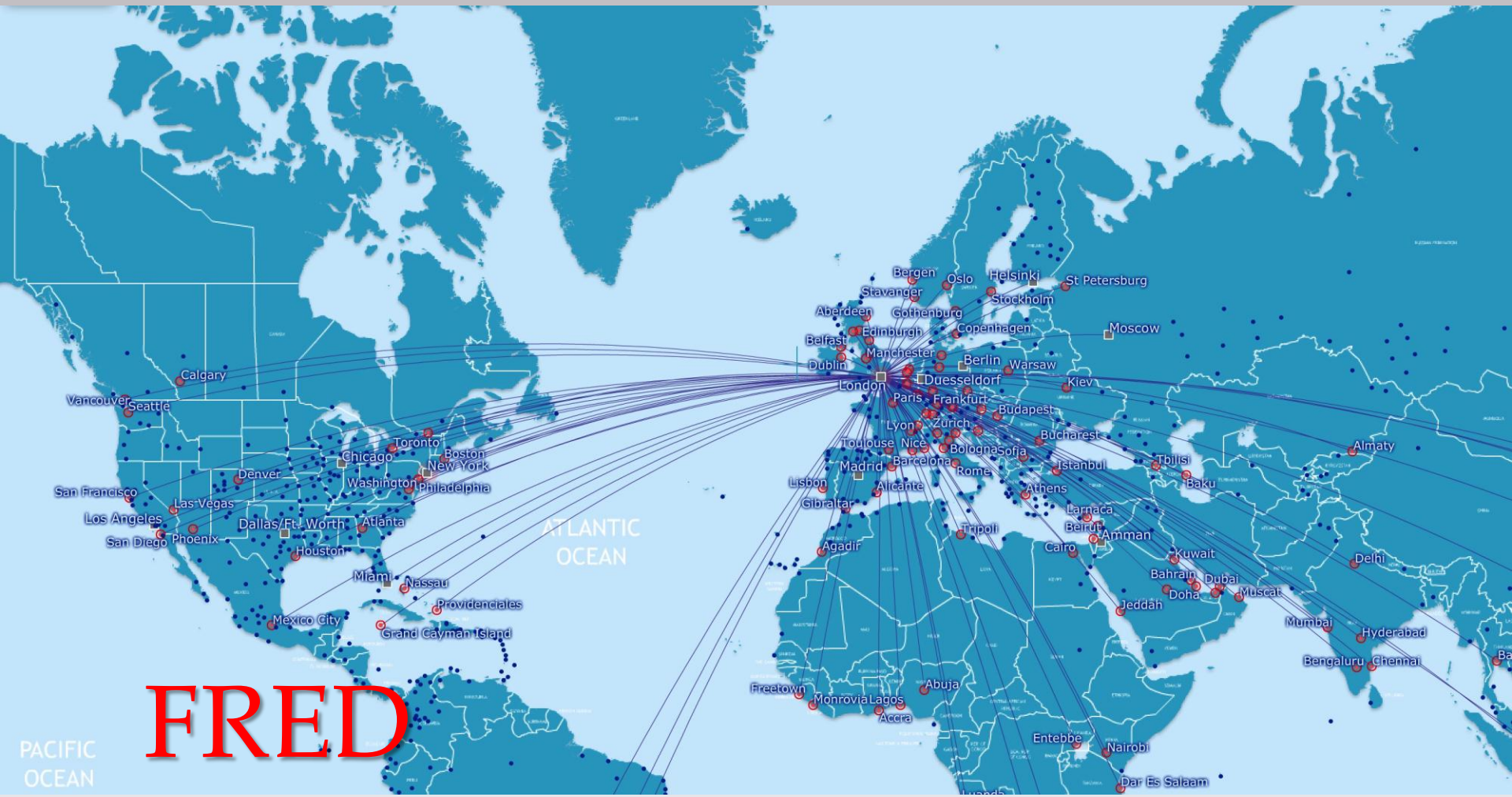


RED



RED

Newark Airport


FRED
ATLANTIC OCEAN
PACIFIC OCEAN
Bergen
Oslo
Helsinki
St Petersburg
Stavanger
Stockholm
Aberdeen
Gothenburg
Edinburgh
Copenhagen
Moscow
Belfast
Manchester
Berlin
Warsaw
Dublin
London
Duesseldorf
Kiev
Paris
Frankfurt
Budapest
Lyon
Zurich
Bucharest
Toulouse
Nice
Bologna
Sofia
Almaty
Madrid
Barcelona
Rome
Istanbul
Tbilisi
Lisbon
Alicante
Athens
Baku
Gibraltar
Larnaca
Beirut
Amman
Tripoli
Agadir
Cairo
Kuwait
Delhi
Bahrain
Dubai
Doha
Muscat
Jeddah
Mumbai
Hyderabad
Bengaluru
Chennai
Freetown
Monrovia
Lagos
Abuja
Accra
Entebbe
Nairobi
Dar Es Salaam
Calgary
Vancouver
Seattle
Toronto
Chicago
Boston
New York
Denver
Washington
Philadelphia
San Francisco
Las Vegas
Los Angeles
Dallas/Ft. Worth
Atlanta
San Diego
Phoenix
Houston
Miami
Nassau
Providenciales
Mexico City
Grand Cayman Island

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Vancouver
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San Francisco
Las Vegas
Los Angeles
San Diego
Phoenix
Denver
Dallas/Ft. Worth
Houston
Chicago
Toronto
Boston
New York
Washington
Philadelphia
Raleigh/Durham
Atlanta
Miami
Stockholm
Helsinki
Moscow
Manchester
Hamburg
Berlin
London
Paris
Fra
Munich
Vienna
Zurich
A Coruna
Bilbao
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Barcelona
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Accra
Amman
Kuwait
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Washington
Madrid
Barcelona
Rome
San Francisco
Los Angeles
Dallas/Ft. Worth
Miami
Amman
ATLANTIC
OCEAN
PACIFIC
OCEAN

WRED

- SRED
- RRED
- ARED (and Blue!)
- CHOKe

RED – Many many more

Special Mention

- CoDel

What about Testing?

What about Testing?

Bottom Line

- Black swans will occur. Oh Yes

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- You can only improve what you control

Bottom Line

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- You can only improve what you control
- Your business will define your discards

Bottom Line

- Black swans will occur. Oh Yes
- You can only improve what you control
- Your business will define your discards
- Agility is (always) your friend

You, apparently, forgot about me

- Free calling

The Fix

The Fix

- Free calling
- No VM

The Fix

- Free calling
- No VM
- No reporting

The Fix

- Free calling
- No VM
- No reporting
- Reject (most) APIs

Beware the Black Swan