



Maximizing Application Performance and Bandwidth Efficiency

Enabling the Hybrid WAN Webinar Series

Presenter: Bob Porter, Product Manager

Host: Robb Boyd, Techwise TV

Date: Wednesday 27th May 2015, 10am PST

Your Presenters

Bob Porter



Product Manager

Robb Boyd



Techwise TV

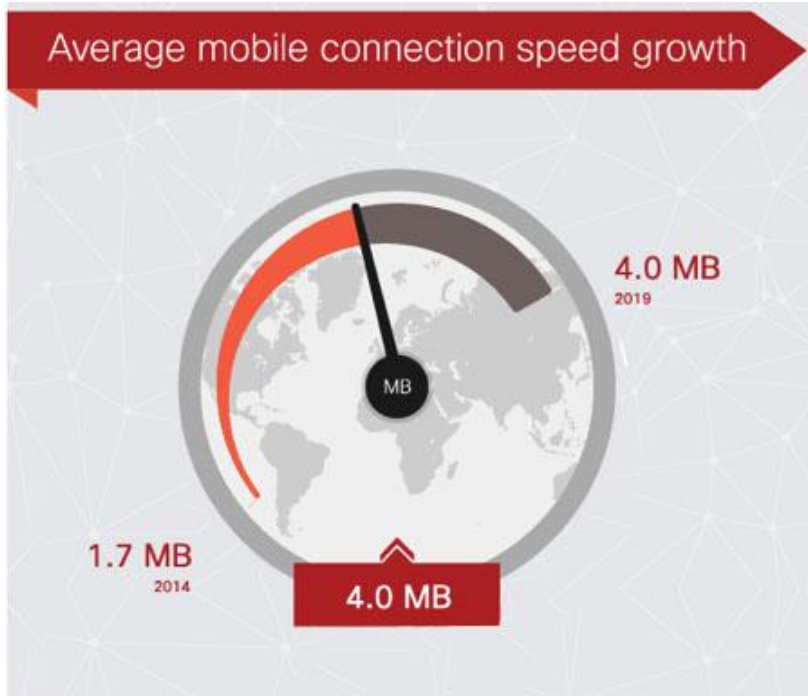
Today's Session: What You Will Learn

- Trends and challenges in delivering applications today
- A (very) brief Hybrid WAN description
- What is WAN optimization?
- How WAN optimization helps
- Real World Results
- Key Takeaways

Setting the scene...

The application landscape is changing

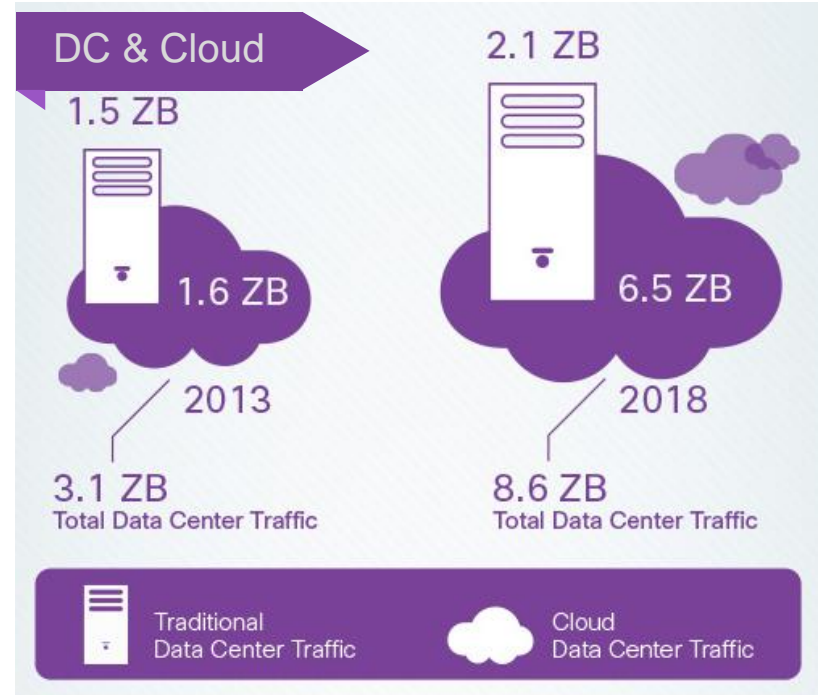
Traffic Growth



Traffic Growth



That's 10,000 3.5" floppies/day



that's 9 trillion hours of HD

Traffic Growth



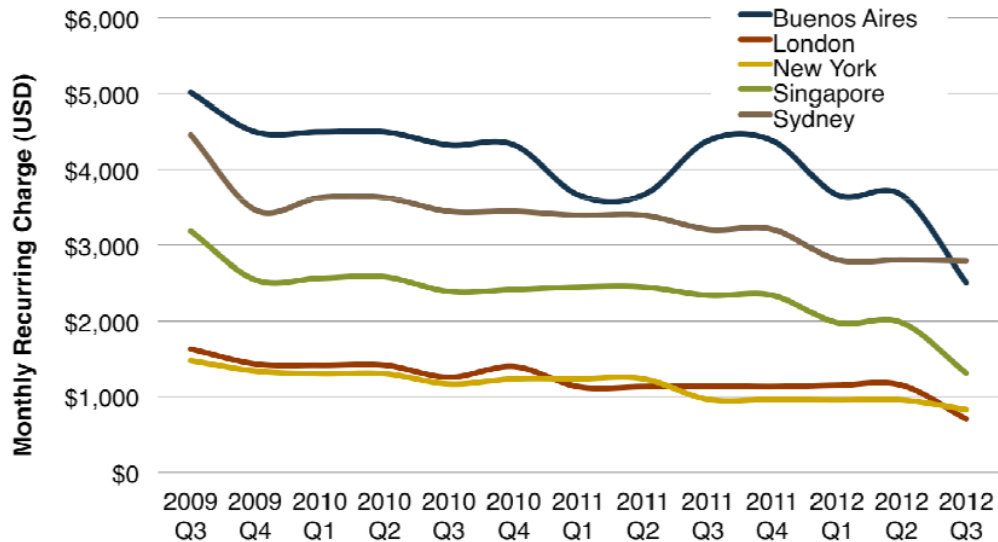
That's 10,000 3.5" floppies/day



that's 9 trillion hours of HD

Cost of Bandwidth

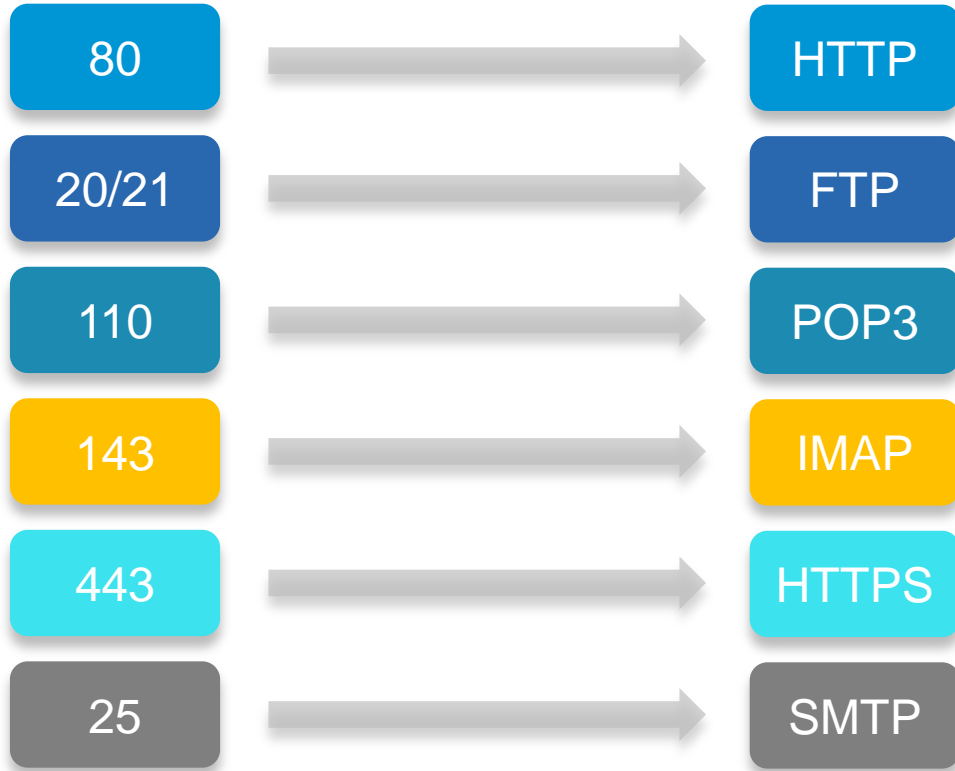
10 Mbps VPN Port Price, Best Efforts CoS



HTTP is the

new TCP

Are these applications?

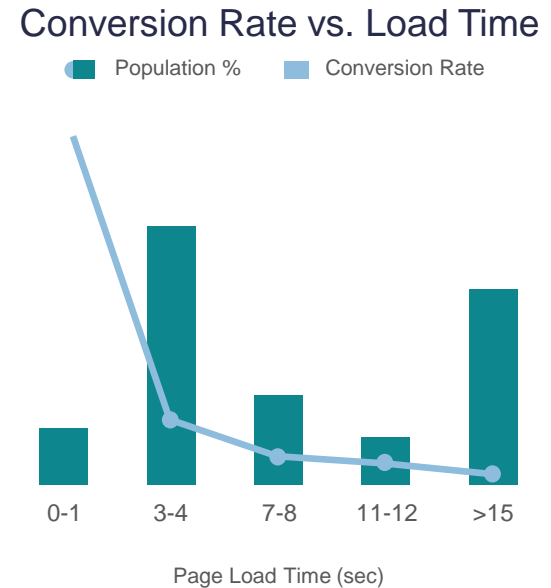
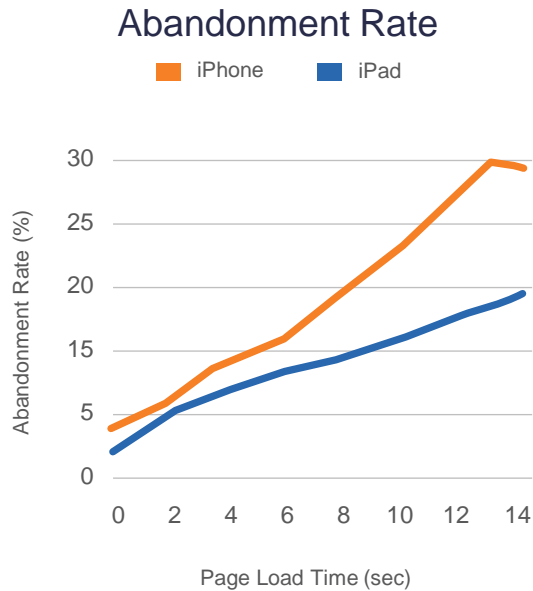


or just ports?

What about these?



How to annoy your users / customers



Hybrid WAN?

what

if —

you could

build a

WAN



◦ utilizes multiple
circuits —

MPLS

Internet

leased
99.999%

simultaneously



◦ Routing app
flows according

to —

what the
app needs -

latency

loss

MOS

Jitter

◦ And

can tell you

what's really

going on...

◦ Apps present

◦ App performance

... & then -

apples fall

WAA optimization



while saving

money

(opex & capex)

how?

CISCO IWAN

Four pillars...

PIR

AVC

SEC

WAAS

①

②

③

④

Four pillars...

PER

AVC

SEC

WAAJ

①

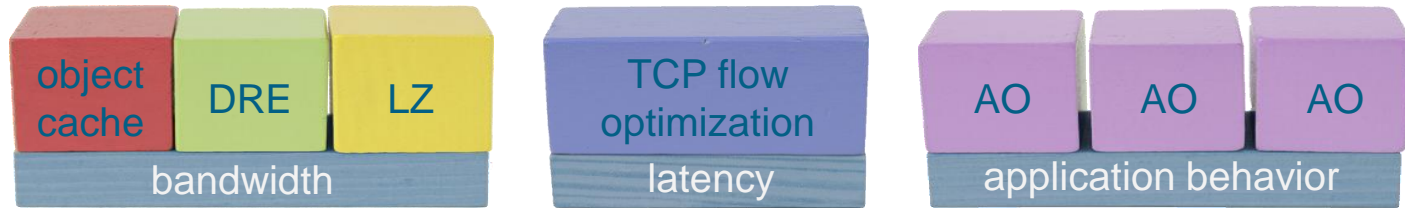
②

③

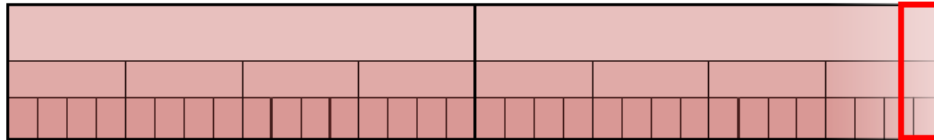
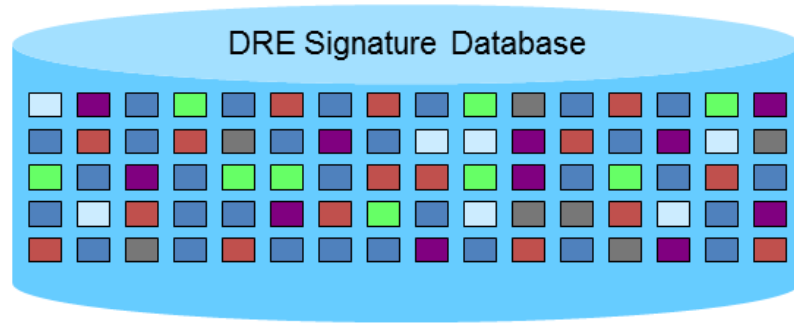
④

How does WAAS work?

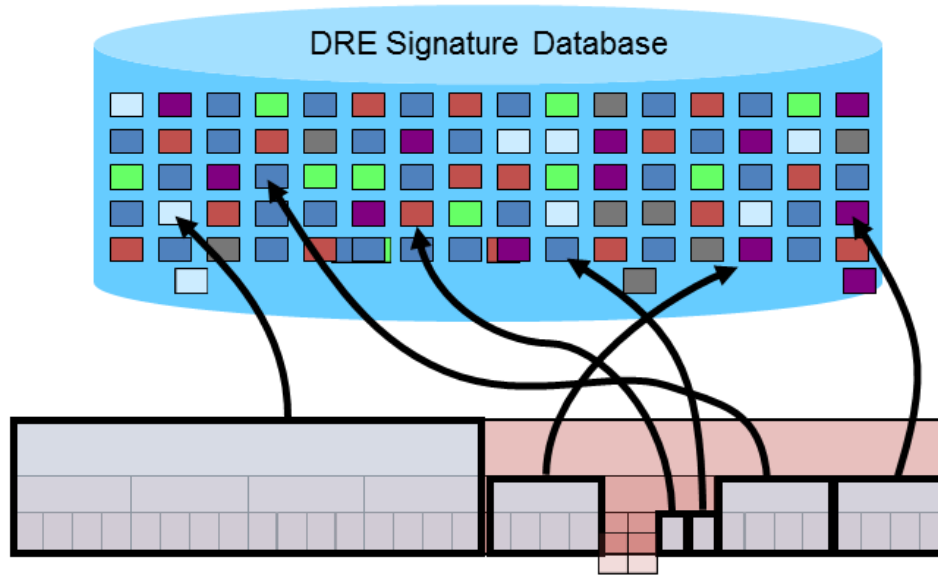
Building Blocks of WAAS



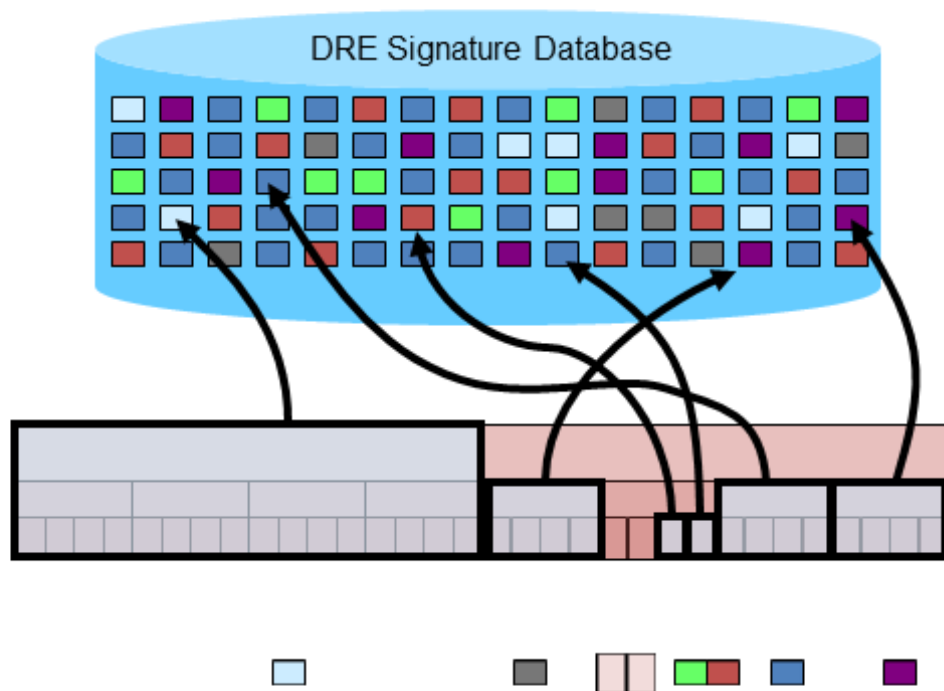
DRE Pattern Matching



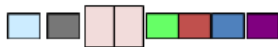
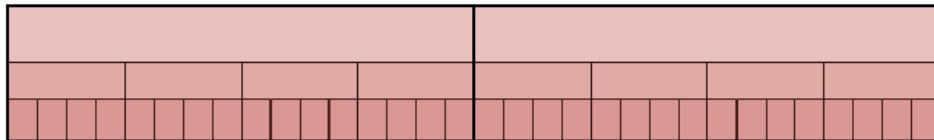
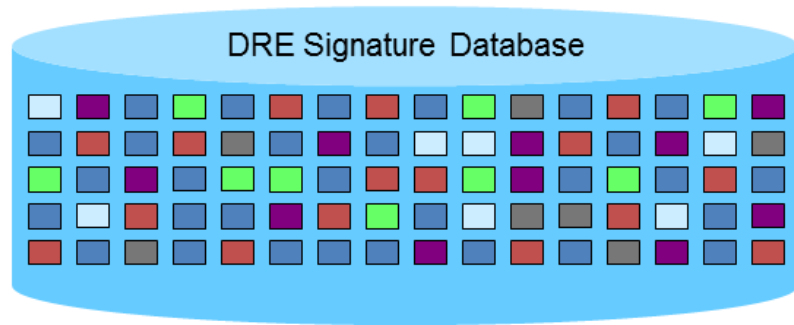
DRE Pattern Matching



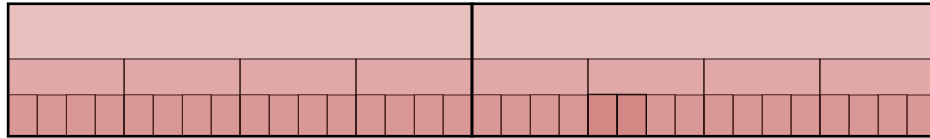
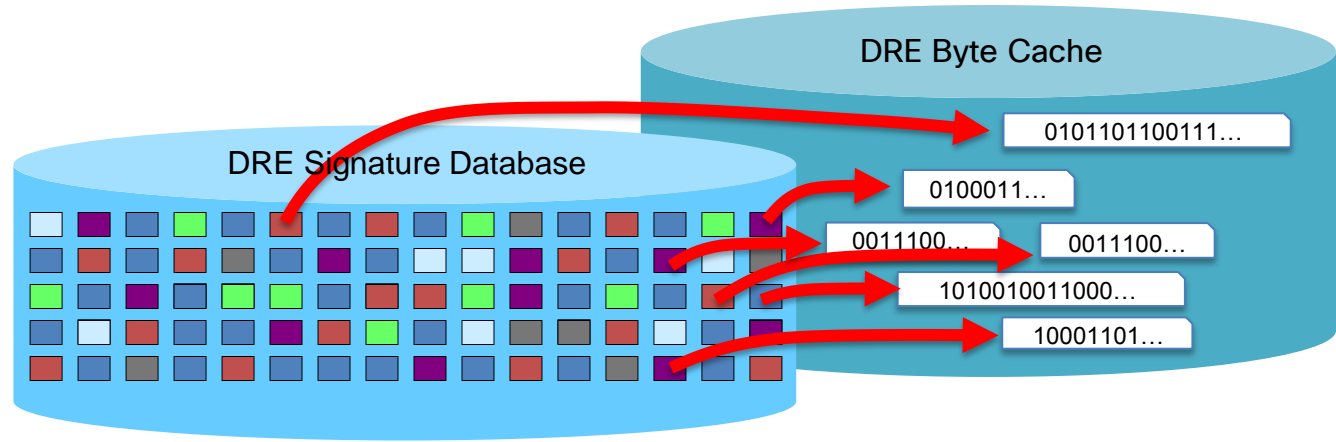
DRE Pattern Matching



DRE Pattern Matching



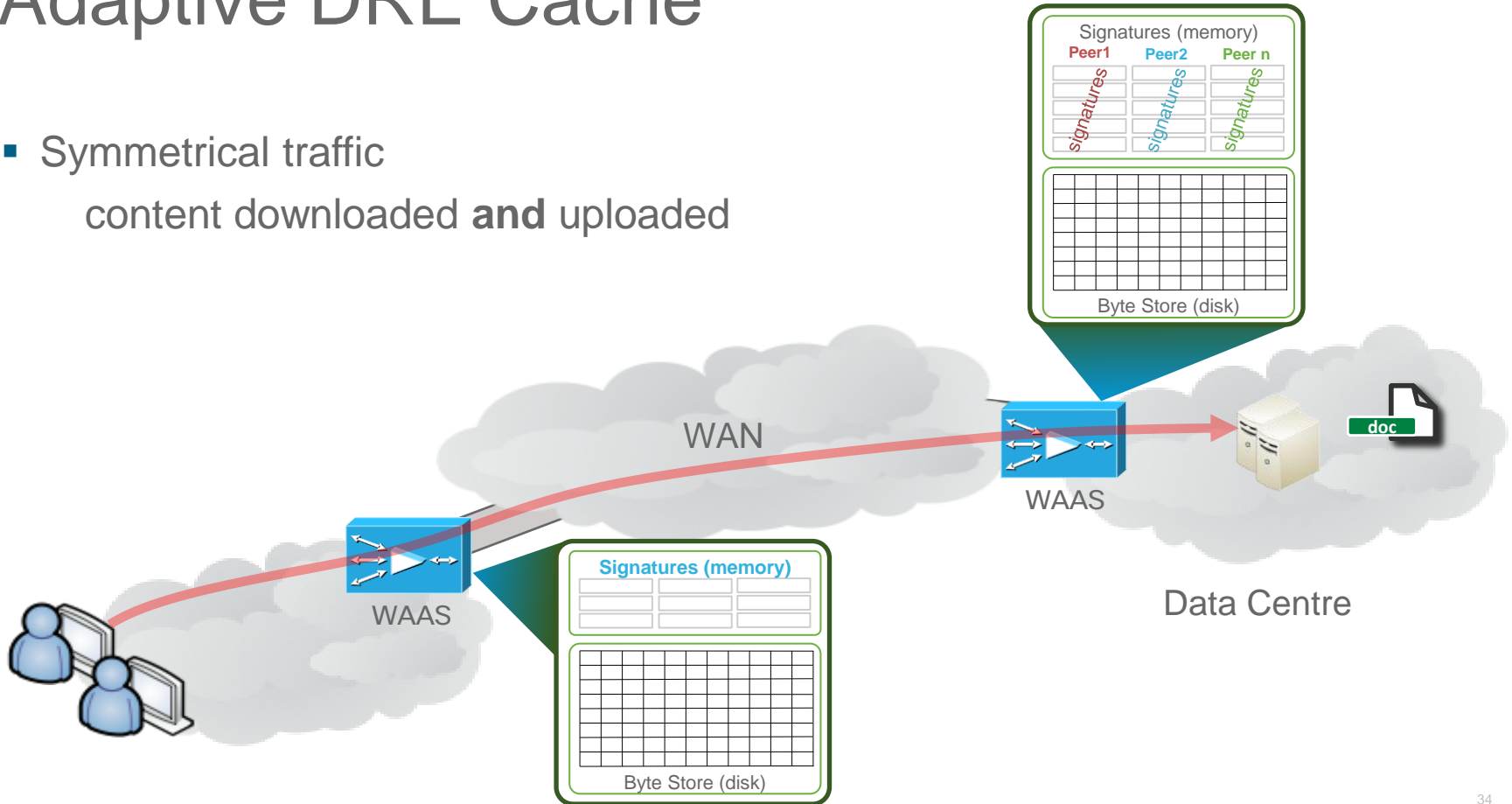
DRE Pattern Matching



Encoded
Message

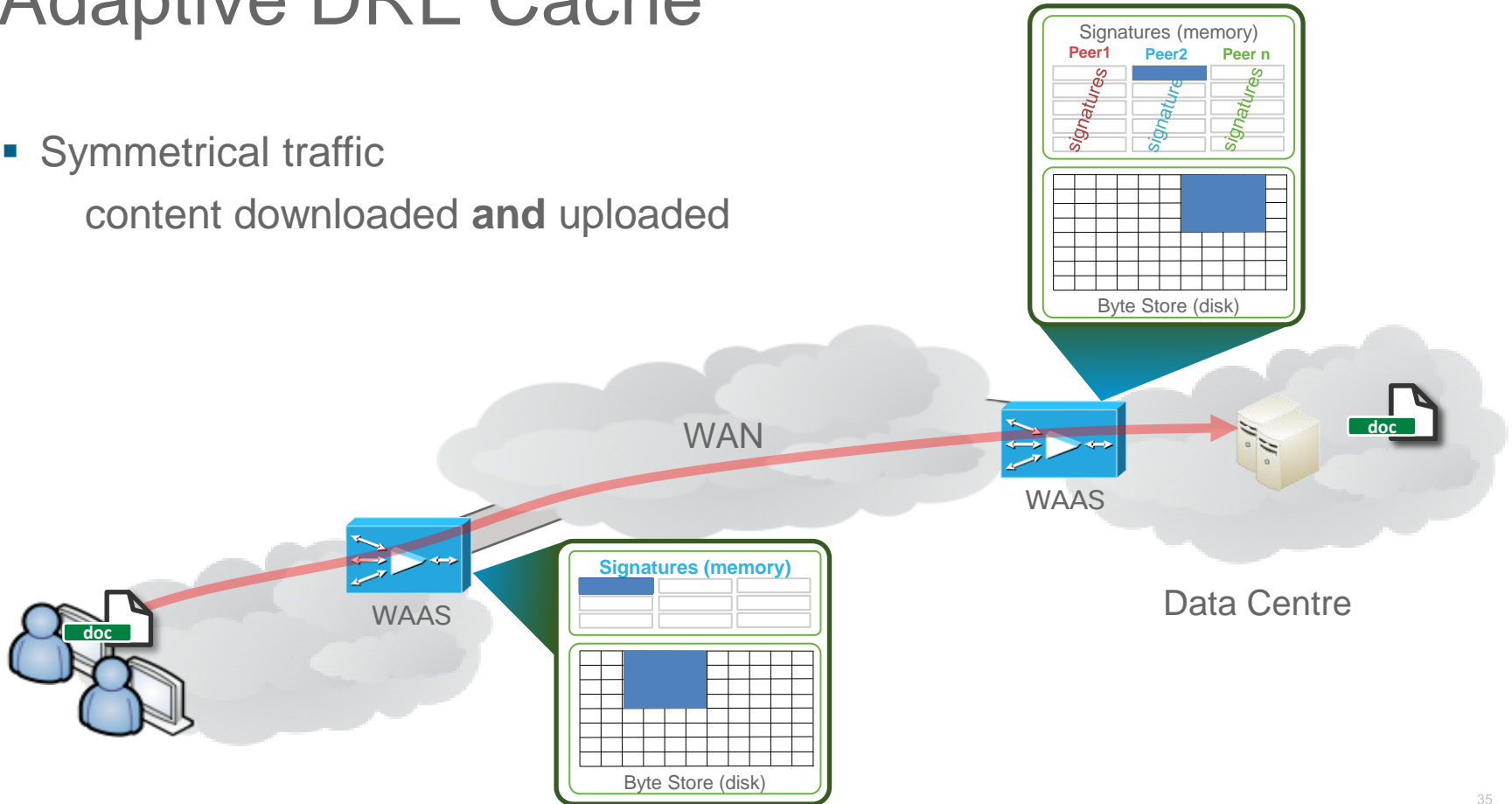
Adaptive DRE Cache

- Symmetrical traffic
content downloaded **and** uploaded



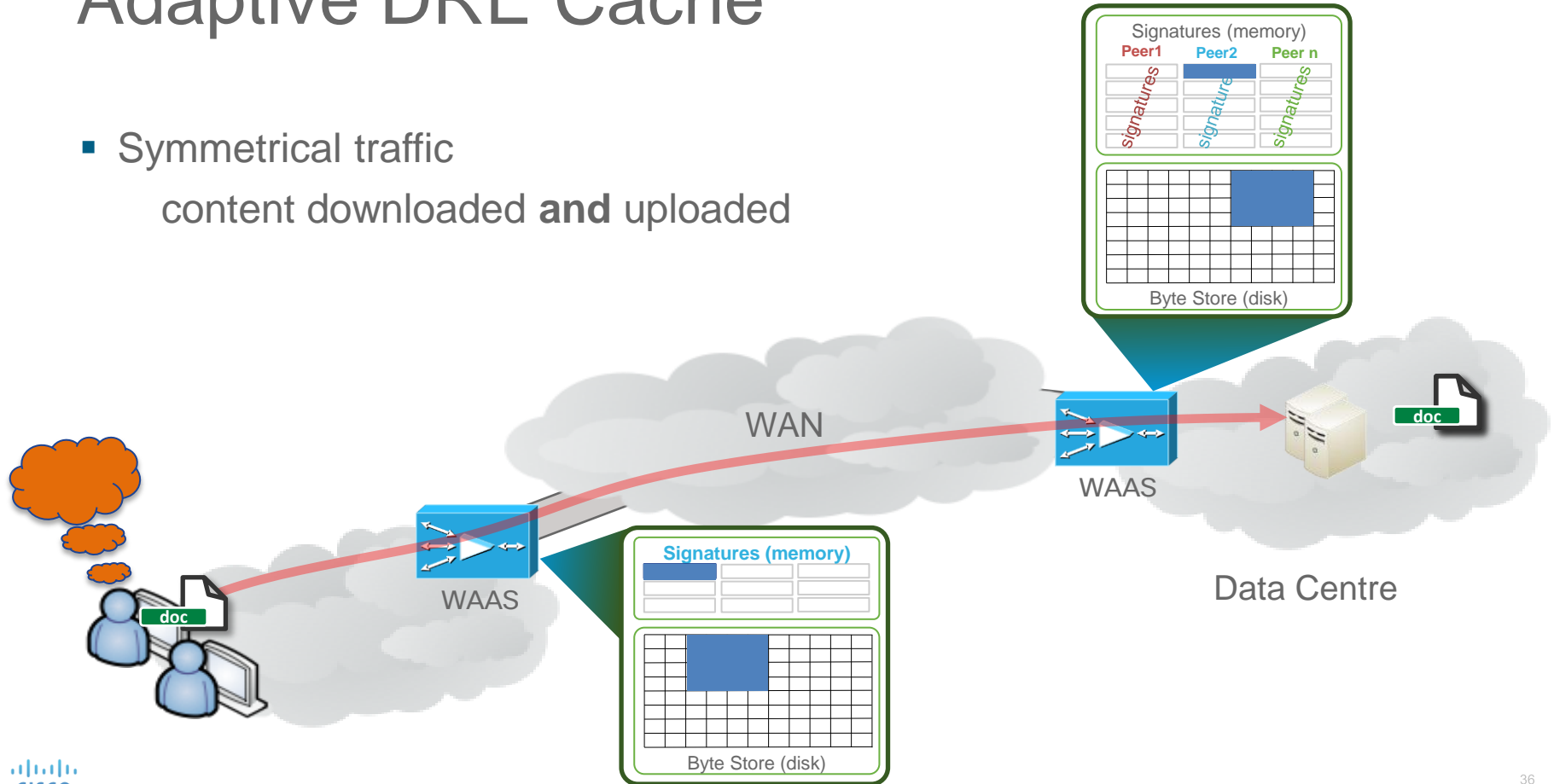
Adaptive DRE Cache

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content downloaded **and** uploaded



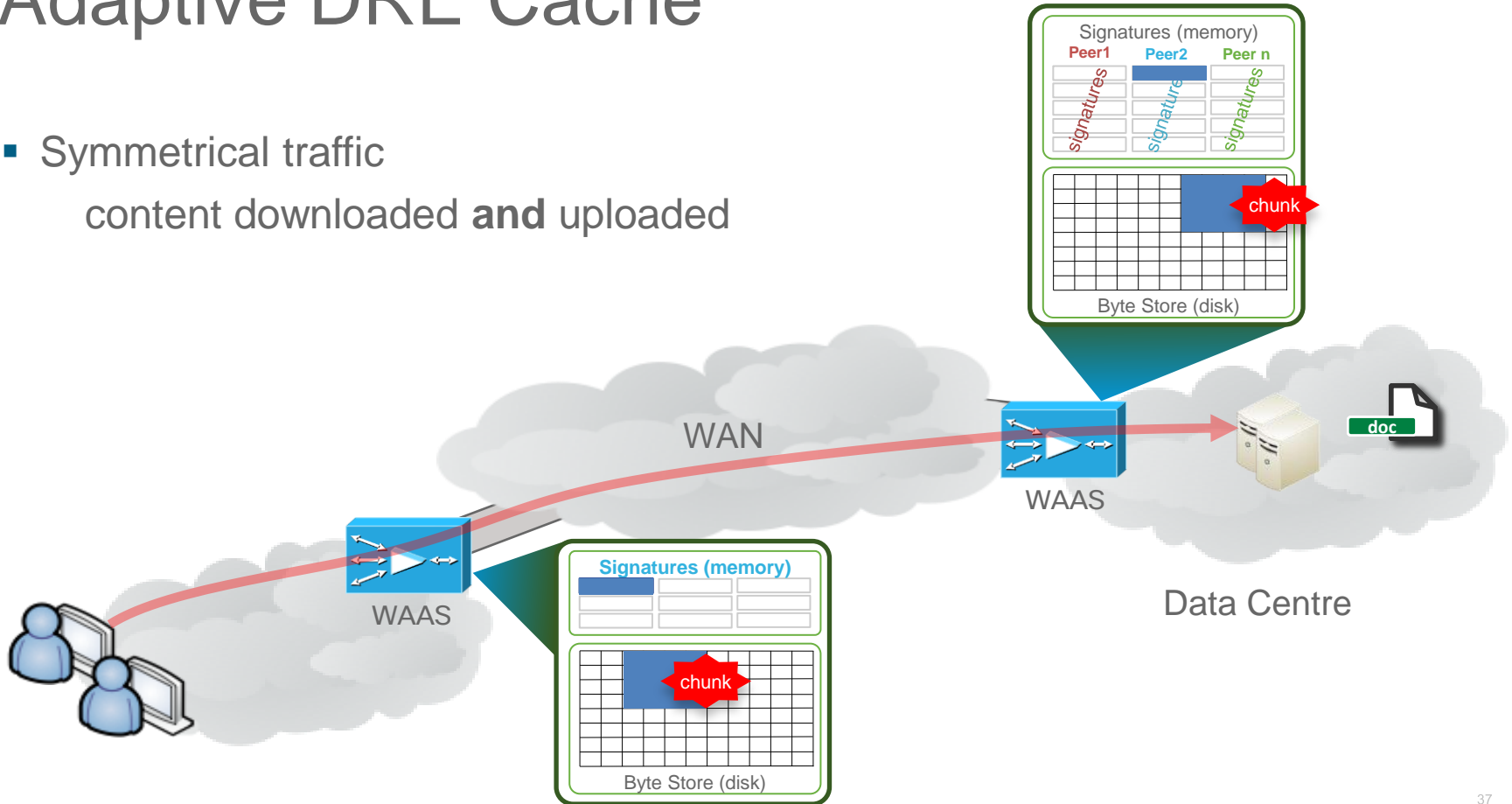
Adaptive DRE Cache

- Symmetrical traffic
content downloaded **and** uploaded



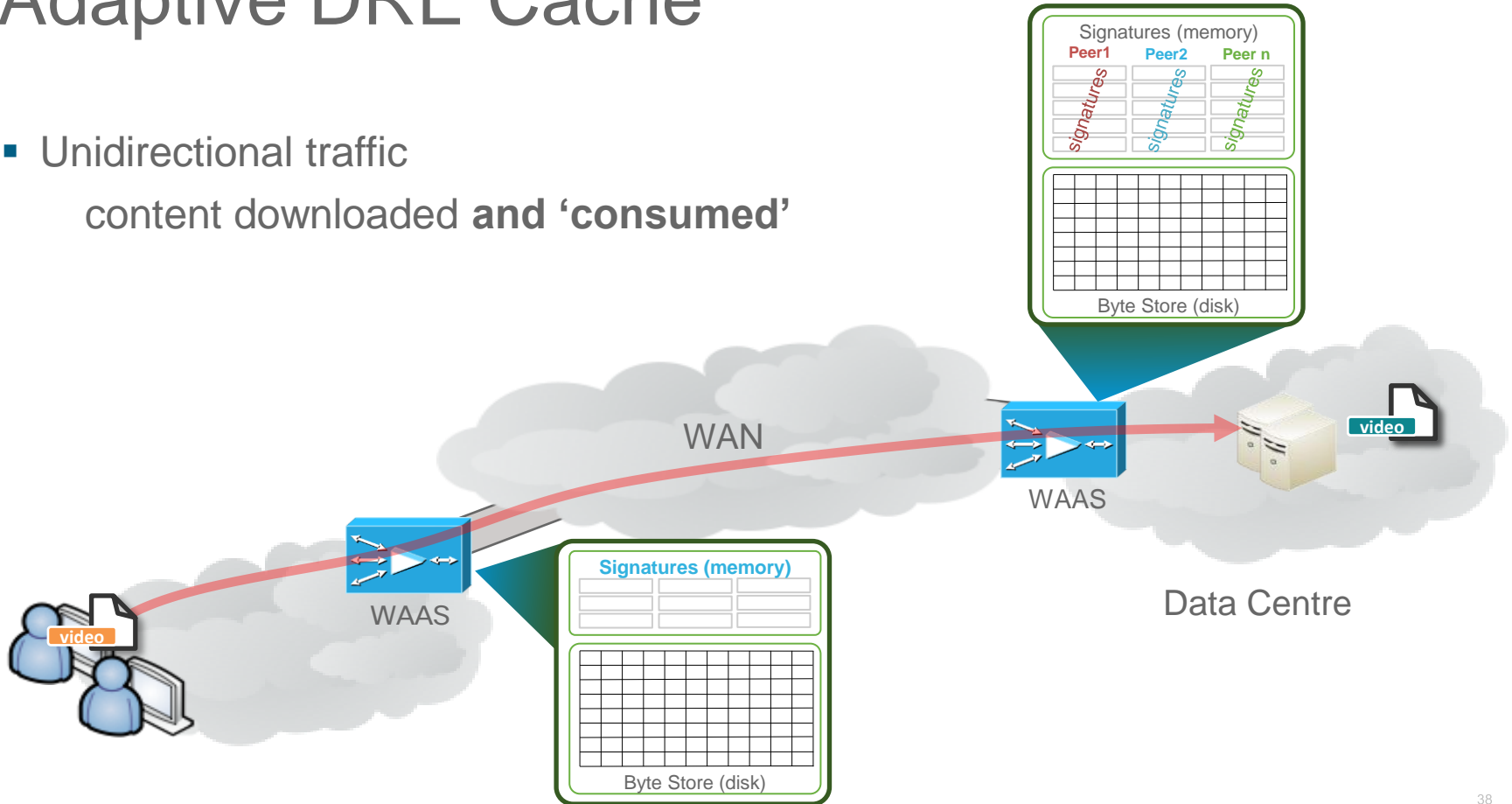
Adaptive DRE Cache

- Symmetrical traffic
content downloaded **and** uploaded



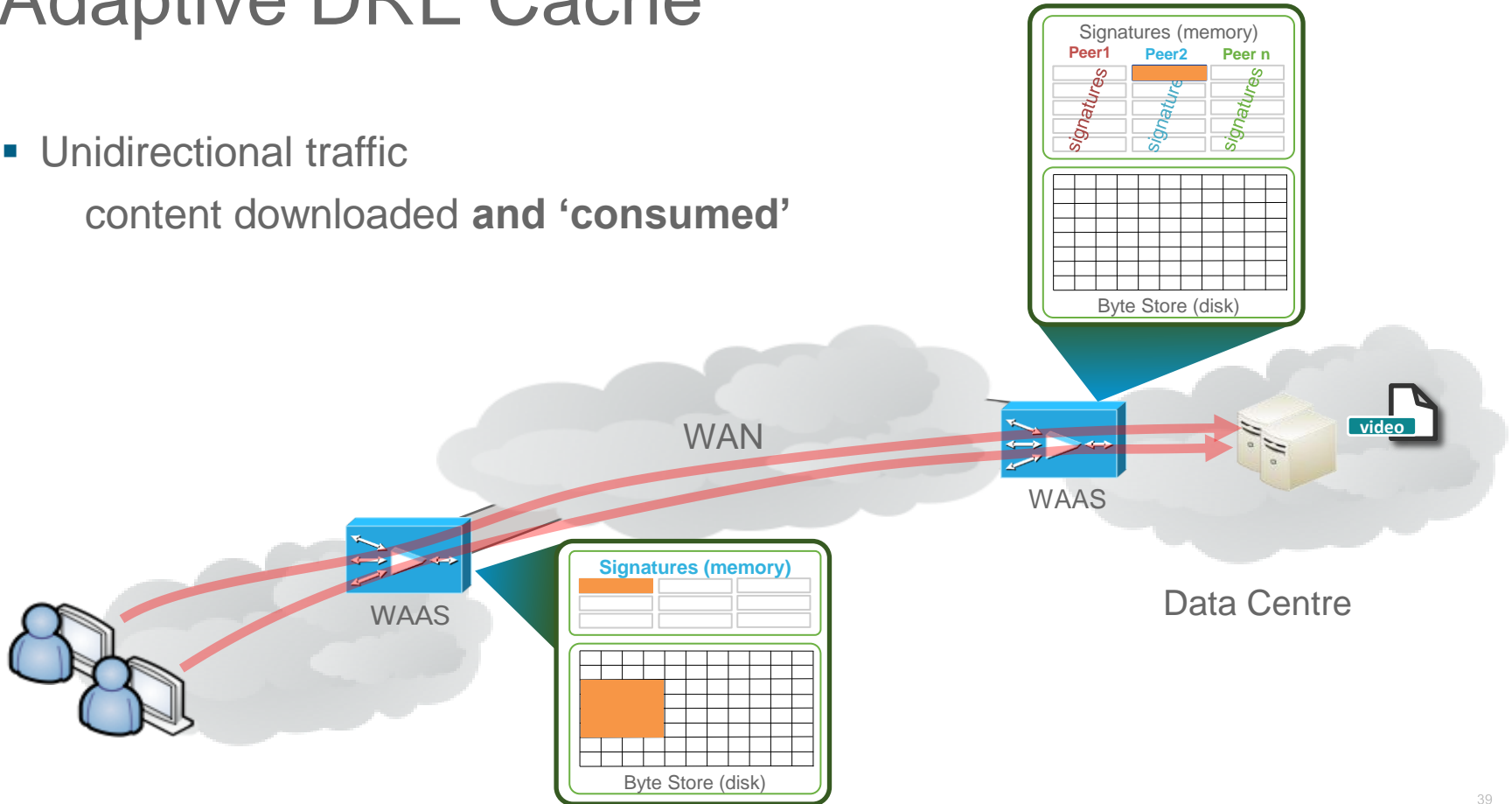
Adaptive DRE Cache

- Unidirectional traffic
content downloaded and **‘consumed’**



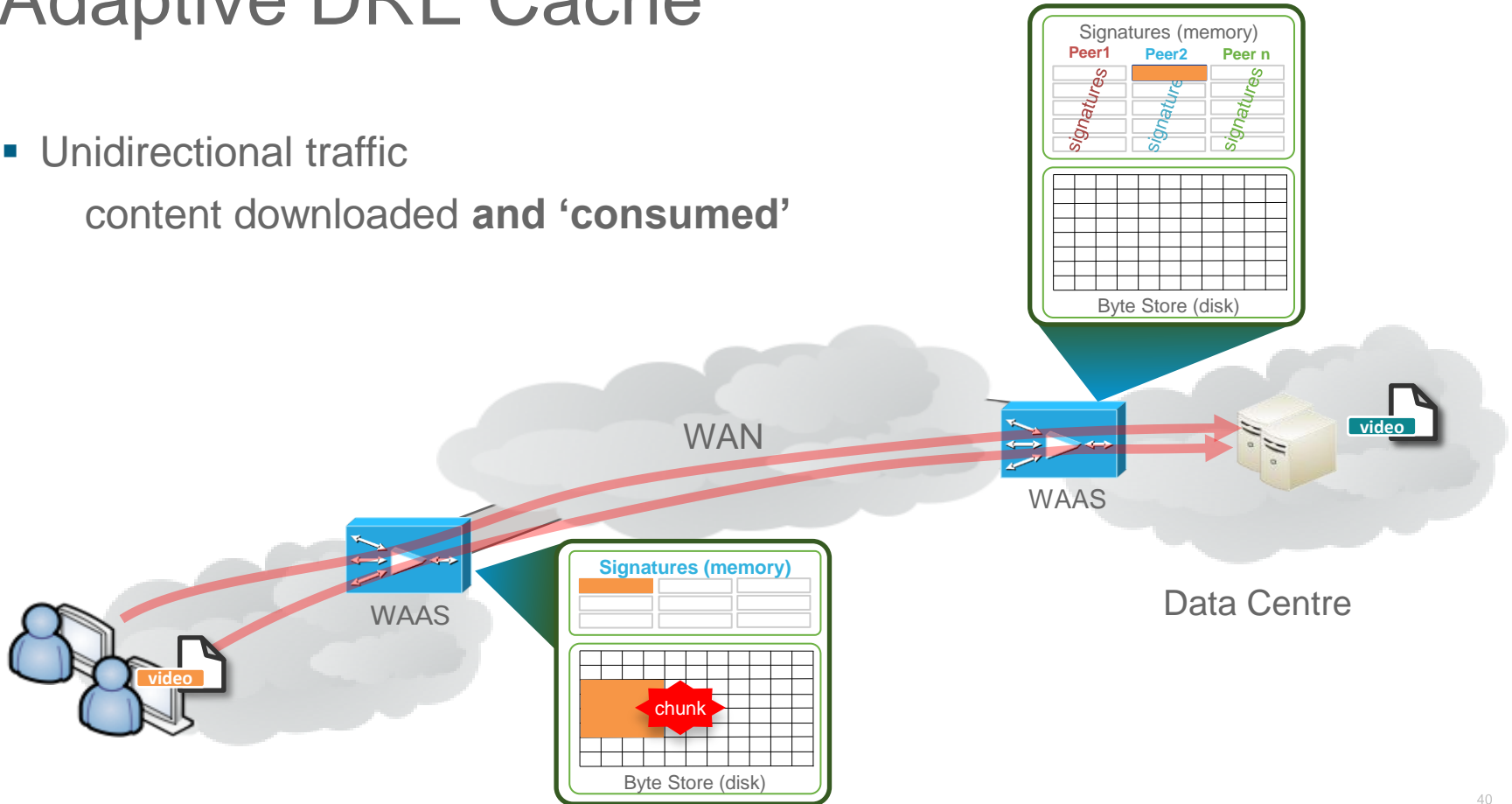
Adaptive DRE Cache

- Unidirectional traffic
content downloaded and **'consumed'**

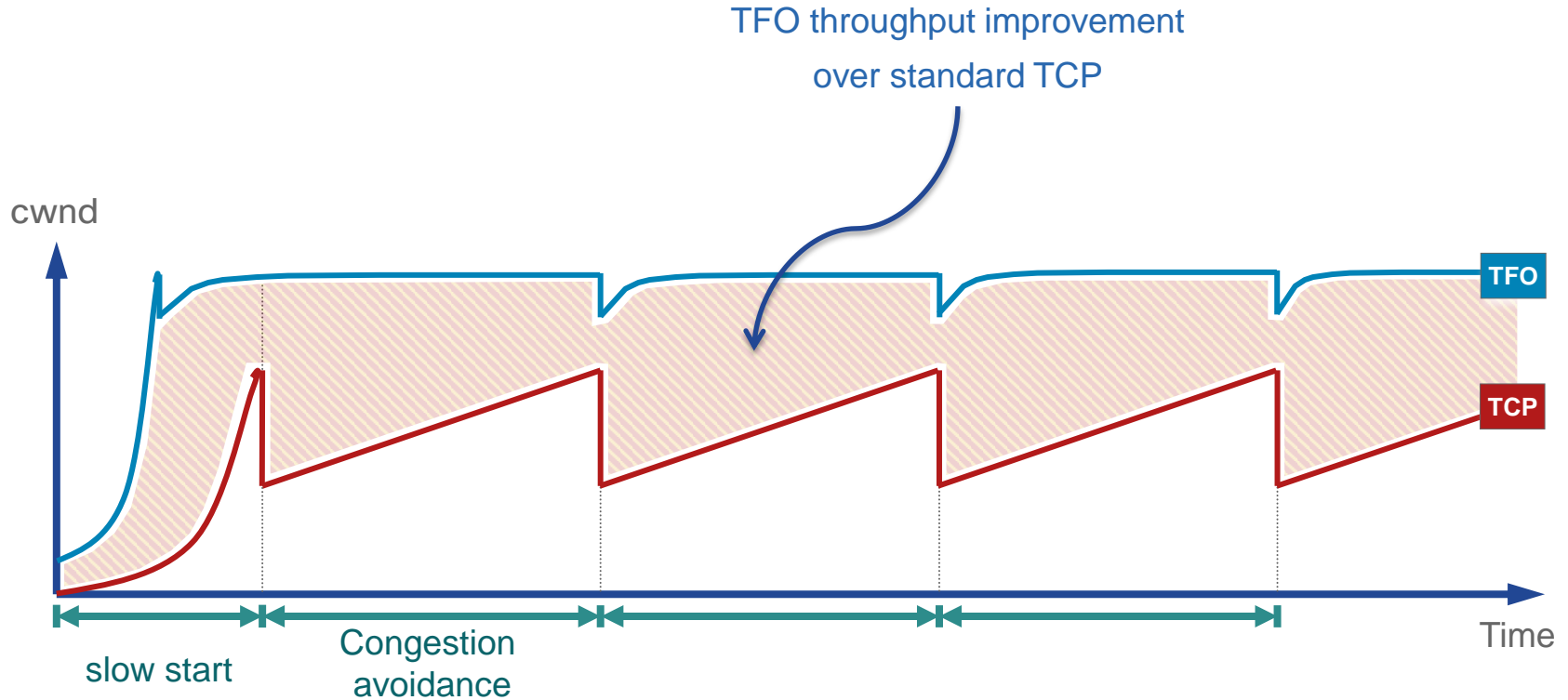


Adaptive DRE Cache

- Unidirectional traffic
content downloaded and **‘consumed’**

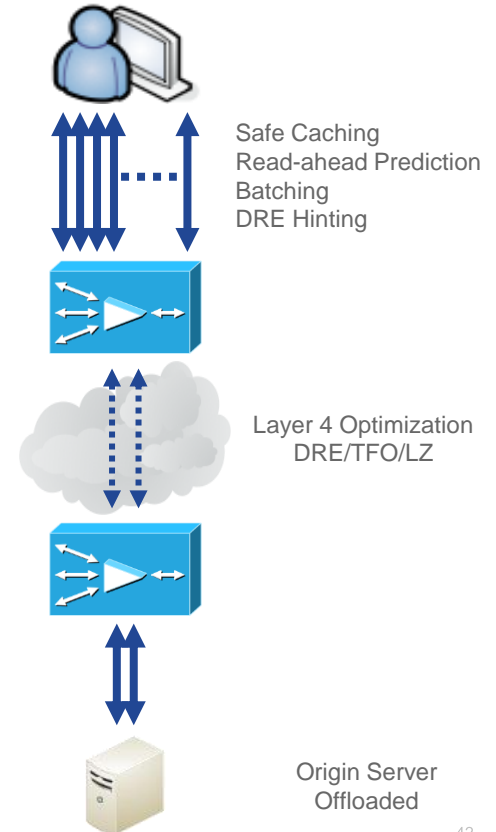


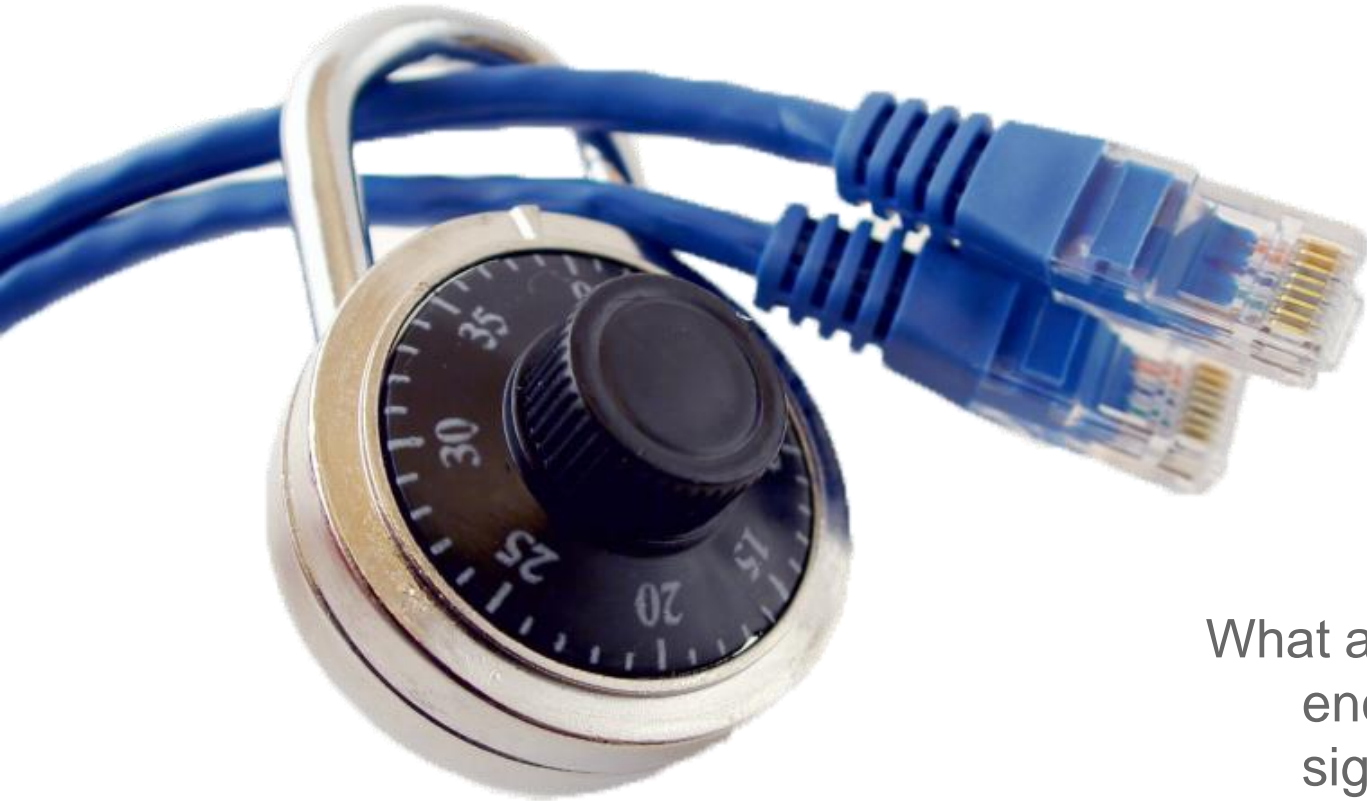
TCP Flow Optimizations



Application Specific Acceleration

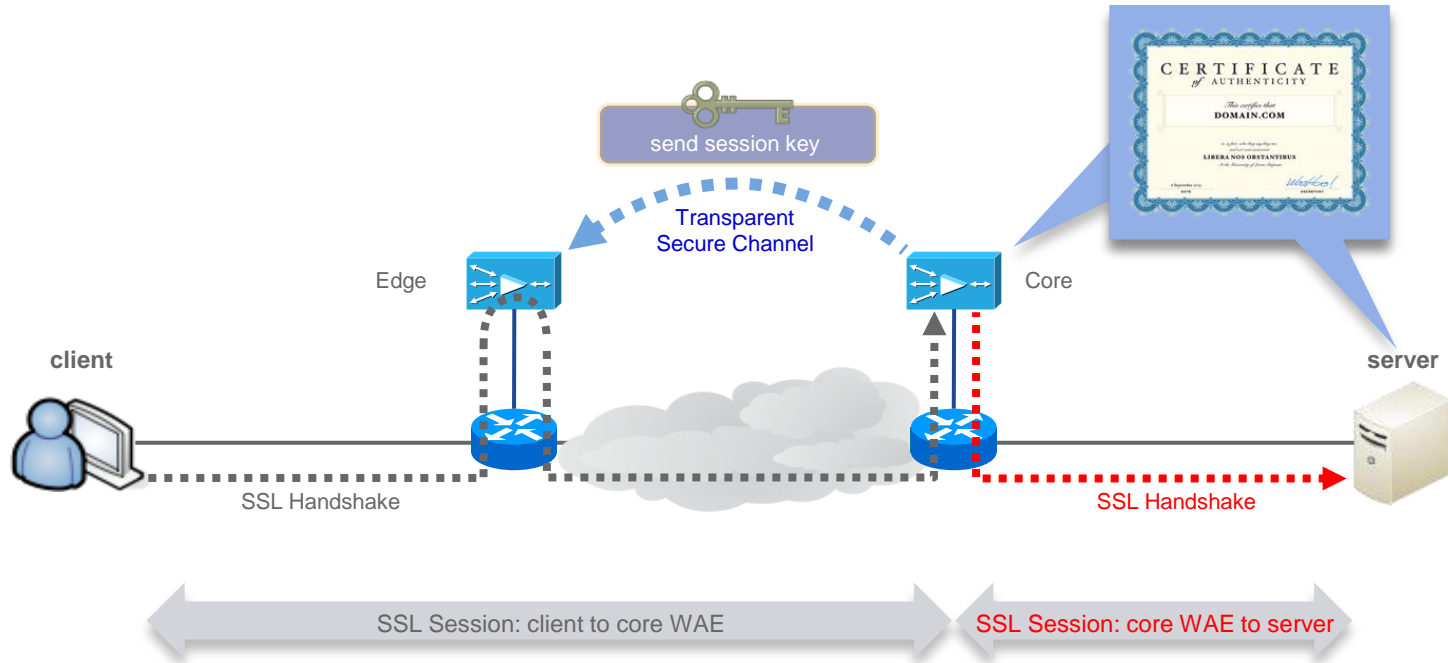
- Transparent to client and server
- Intelligent protocol awareness
 - Improve response time
 - Offload origin server
- DRE Hints



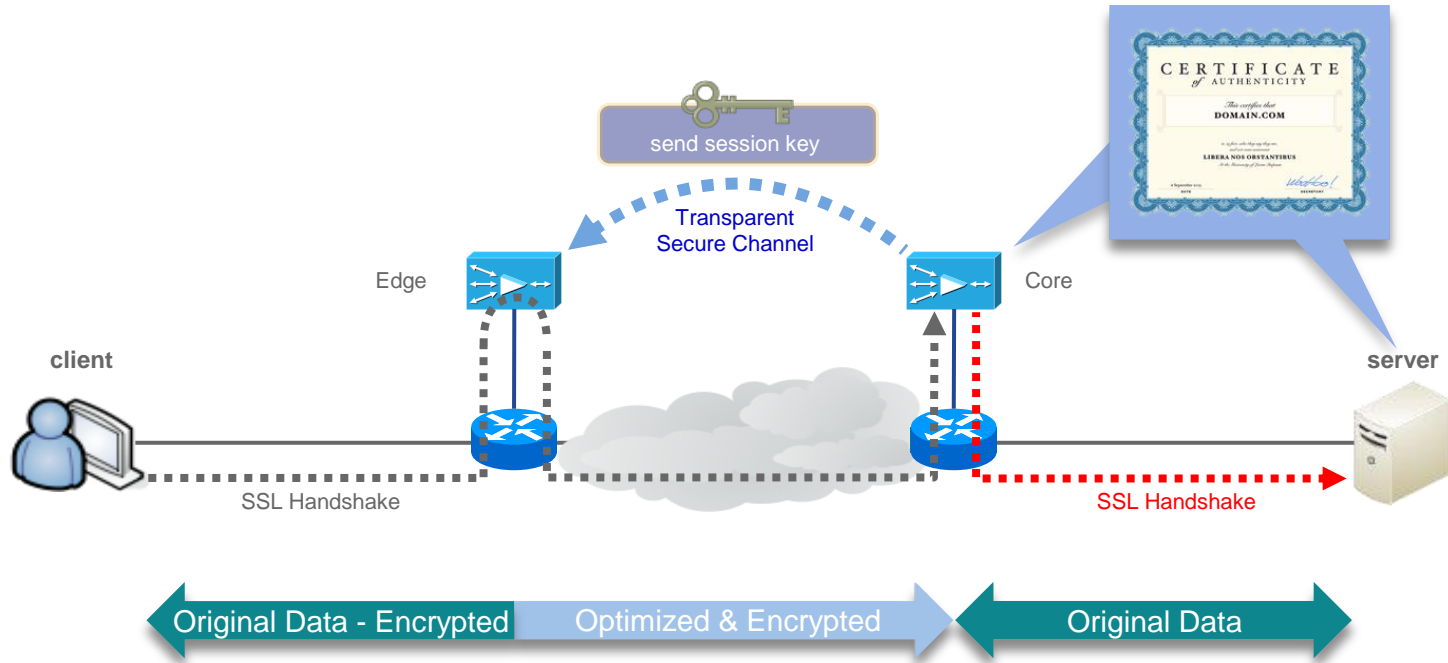


What about ...
encrypted traffic?
signed traffic?
compressed traffic?

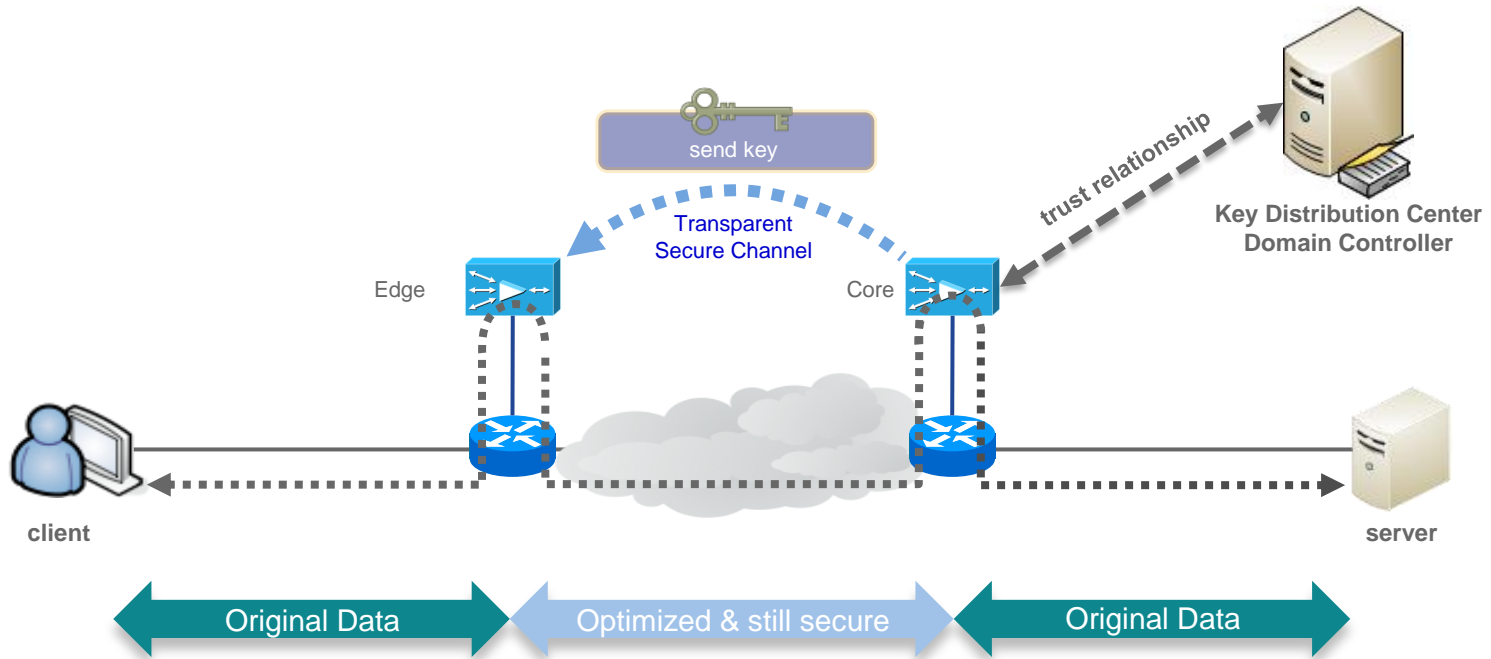
Dealing with encryption



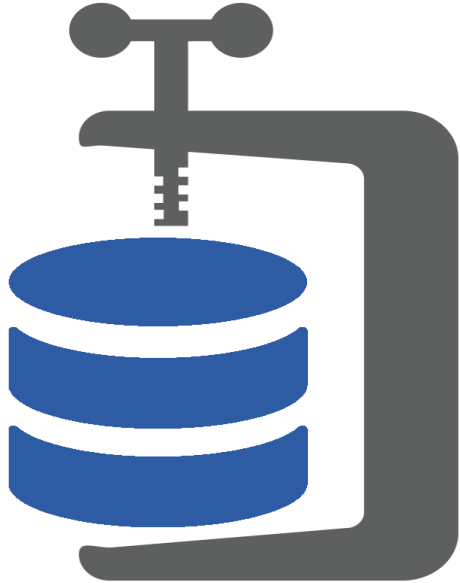
Dealing with encryption



Microsoft encryption & signing



What about compression?

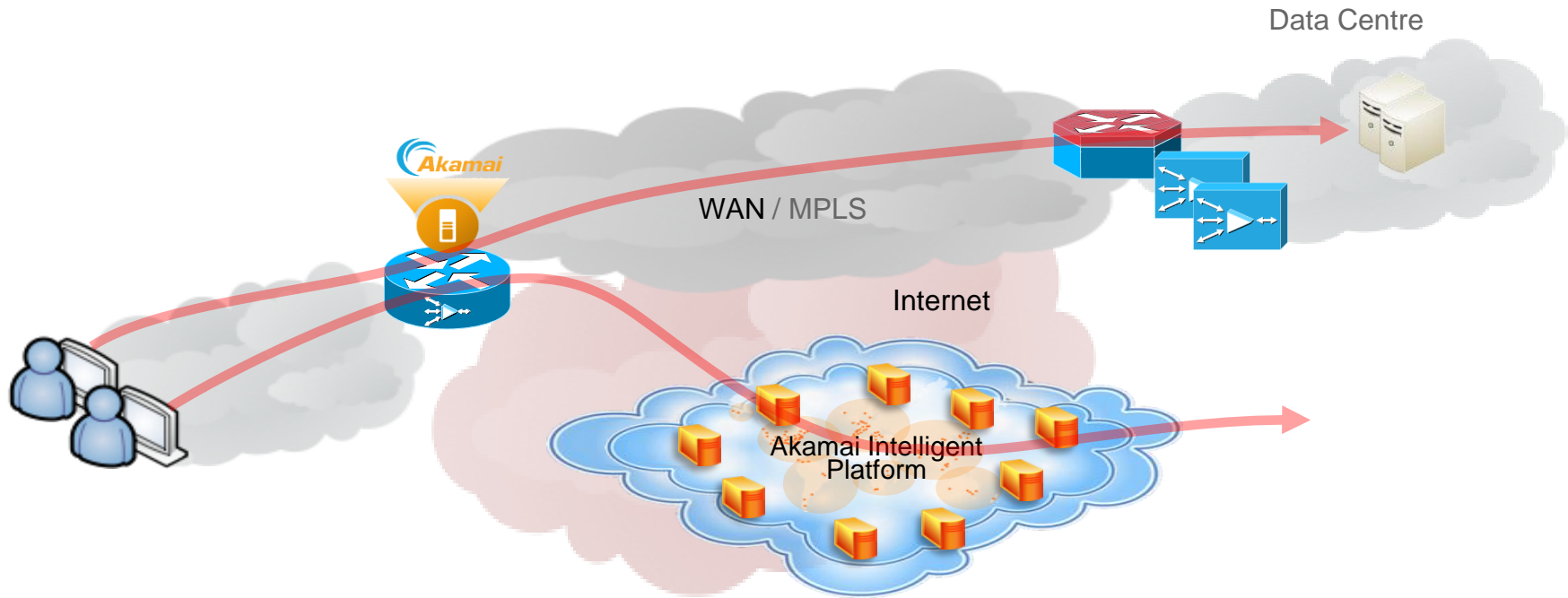


Compress already compressed traffic?
Bad idea...

Better Idea:
Turn it off!

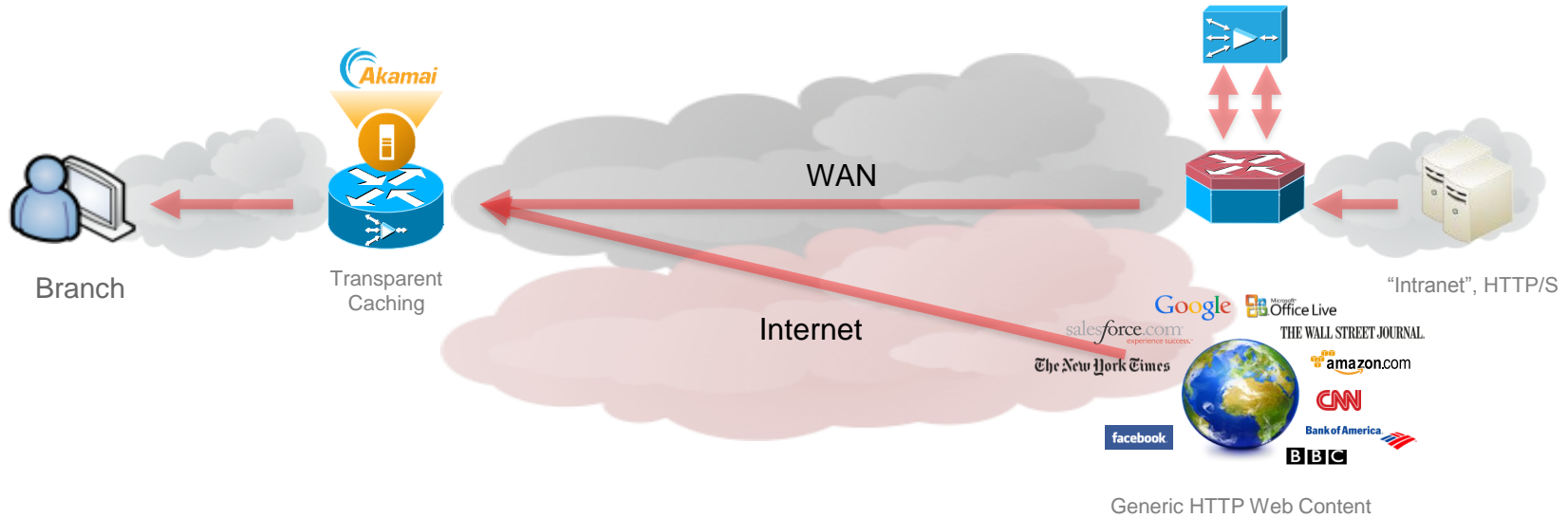
Why?

HTTP GZIP, ICA compression, EMSMDB compression



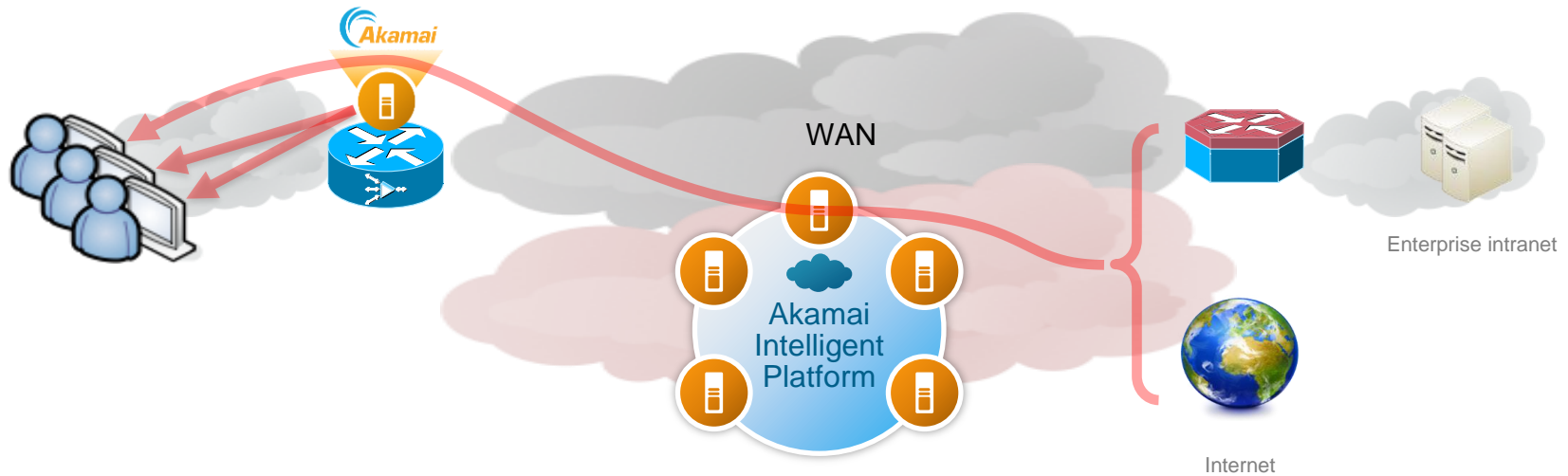
Akamai Connect

Akamai Connect – Transparent Cache



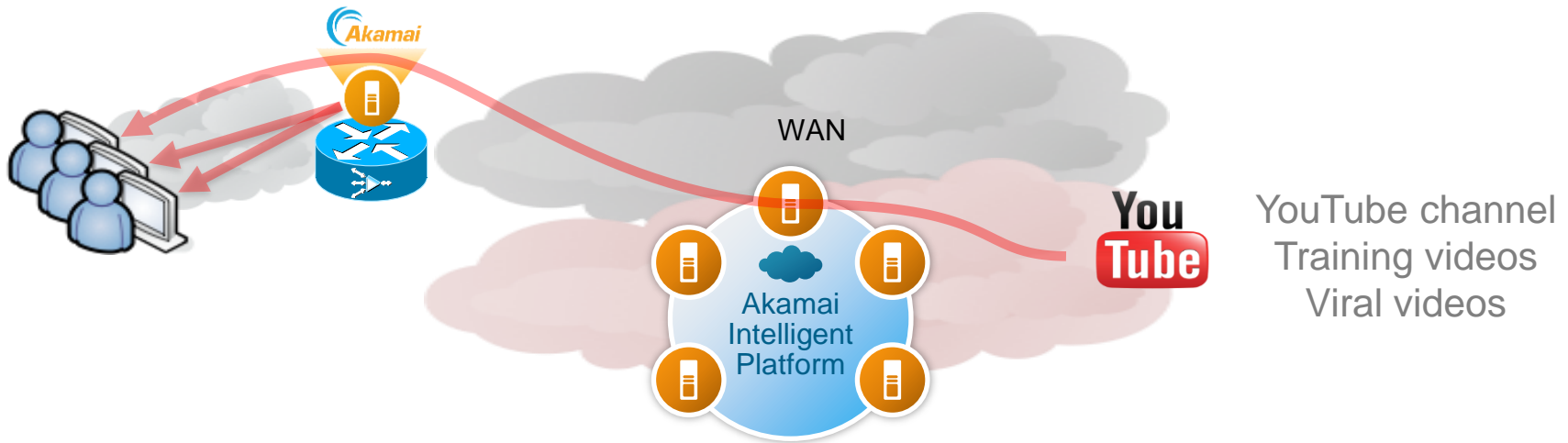
- Improve User Experience
- Reduce network congestion
- Akamai smarts for caching
- WAAS provides:
 - SSL Handling
 - Transport Optimization
 - Deduplication

Akamai Connect – Use Case 1



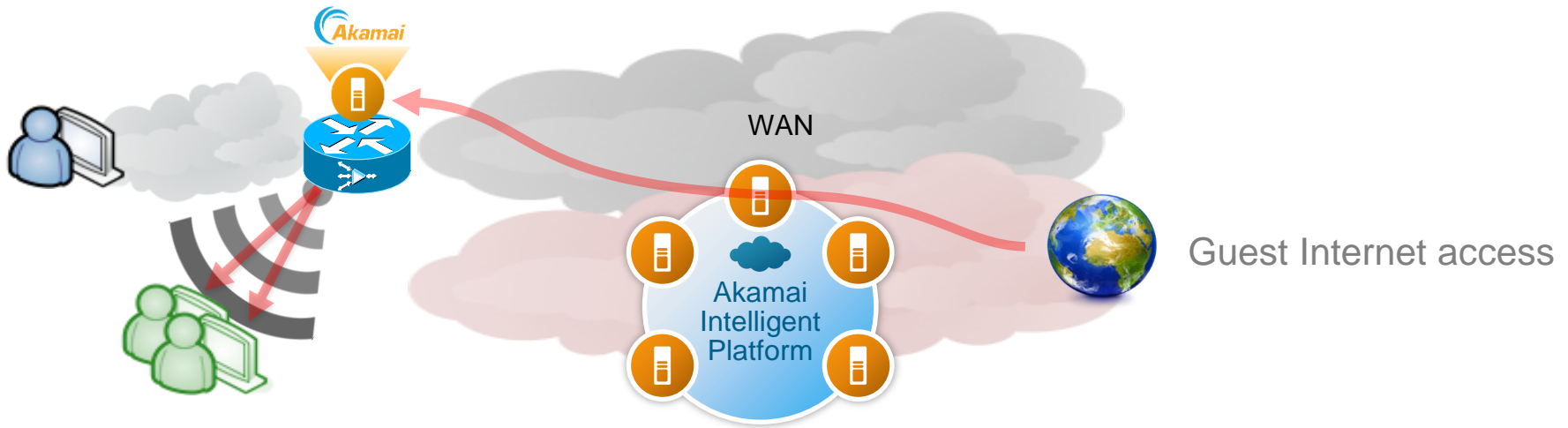
- Generic Web Cache

Akamai Connect – Use Case 2



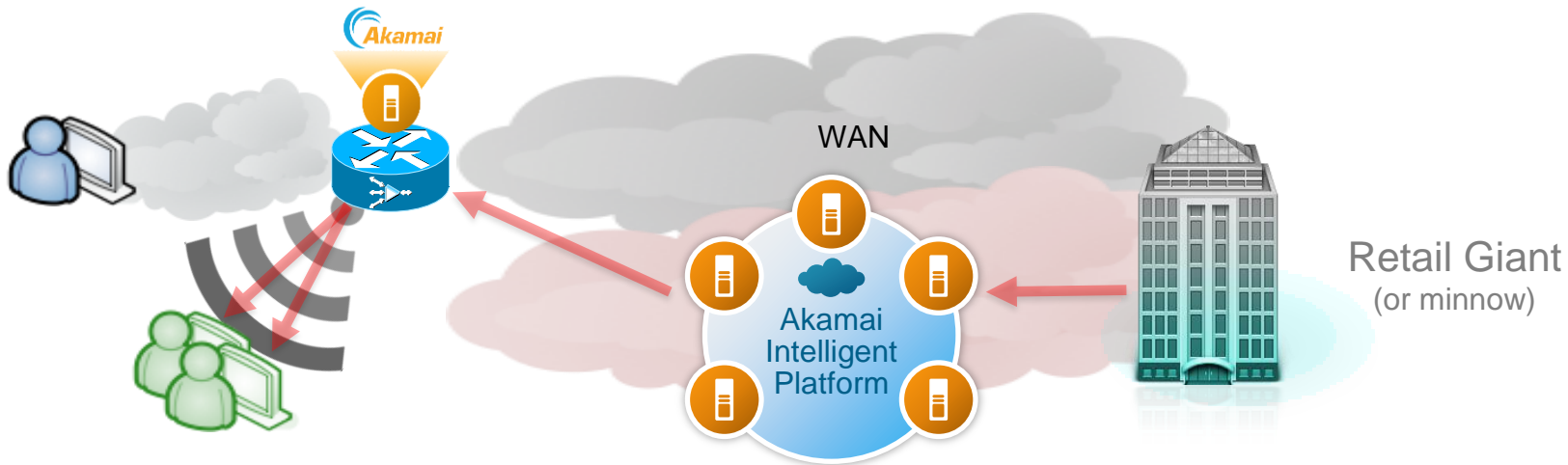
- Generic Web Cache
- Training: over-the-top cache

Akamai Connect – Use Case 3



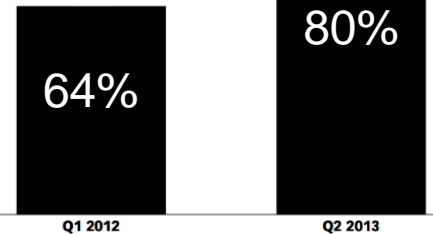
- Generic Web Cache
- Training: over-the-top cache
- Guest Wi-Fi

Akamai Connect – Use Case 4



- Generic Web Cache
- Training: over-the-top cache
- Guest Wi-Fi
- Omnichannel retail

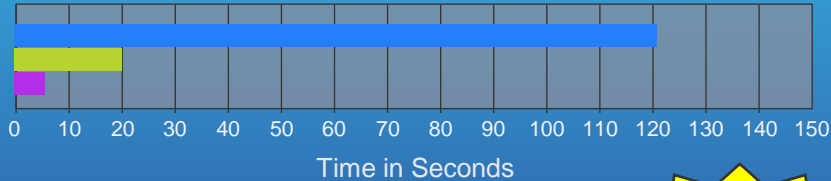
US mobile Wi-Fi users who Use their mobile device while shopping In-Store



But does it work?

WAAS Delivers User Experience at Scale

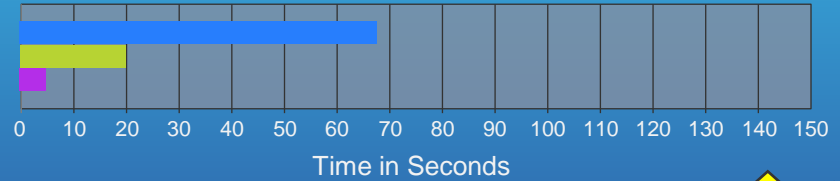
Email



- Send and Receive Email over native WAN
- First Optimized with WAAS
- Second Pass Optimized with WAAS

24x
FASTER

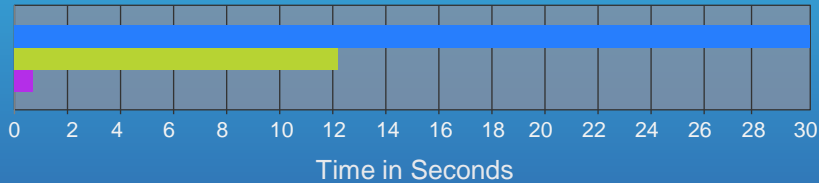
File Services



- File Drag and Drop Over native WAN
- First Optimized with WAAS
- Second Pass Optimized with WAAS

17x
FASTER

MS Sharepoint



- Sharepoint File Download over Native WAN
- First Pass Optimized with WAAS
- Second Pass Optimized with WAAS

30x
FASTER

VDI (Citrix)



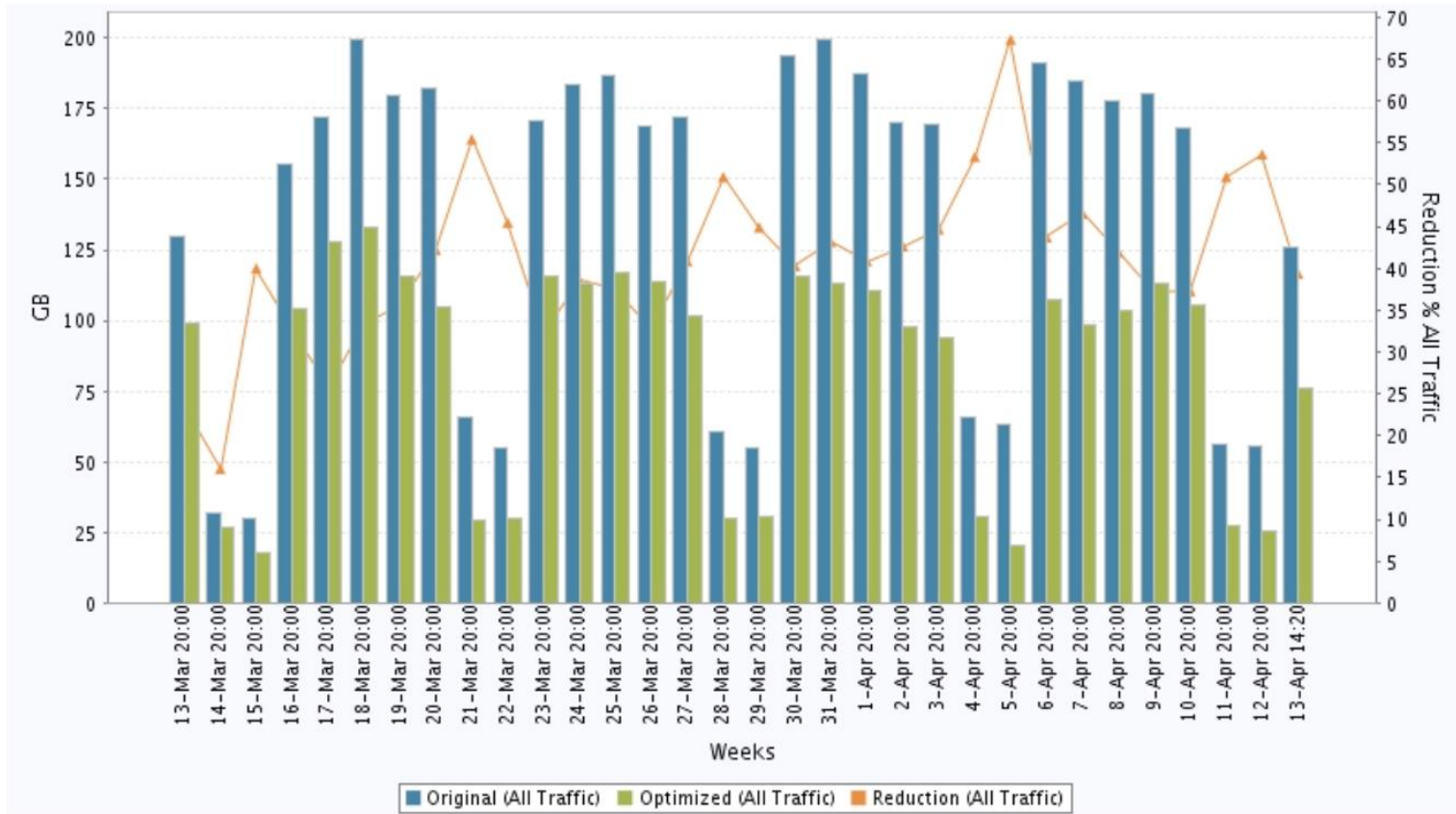
- Launch Citrix XenDesktop Over Native Citrix ICA/SSL
- Launch Citrix XenDesktop with WAAS
- Site Navigation Over Native Citrix ICA/SSL
- Site Navigation with WAAS

3-8x
FASTER

W*** Traffic Volume & Reduction

From : Mar 13, 2015 20:00:00 EDT

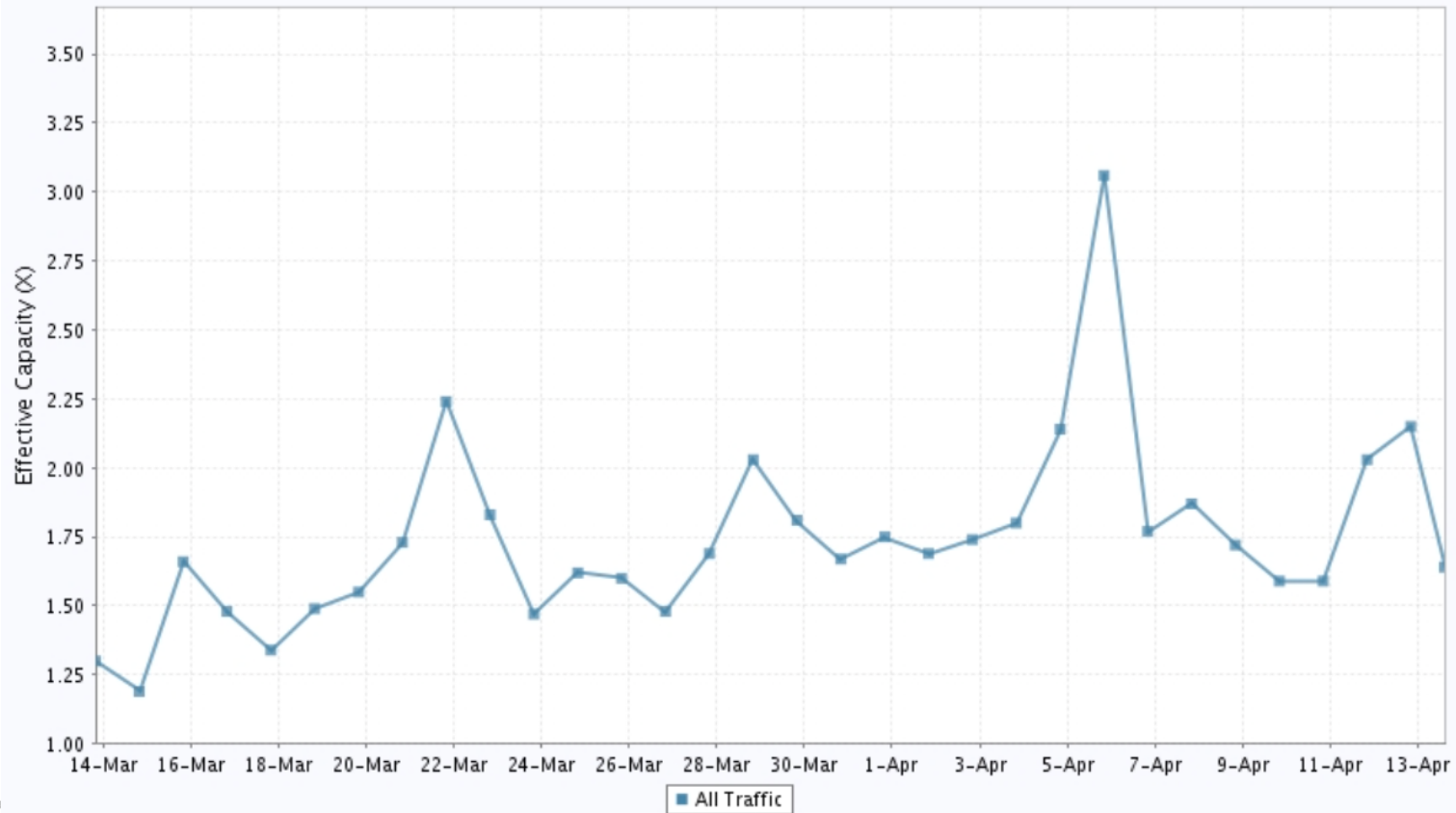
To : Apr 13, 2015 14:20:00 EDT



W*** Effective WAN Capacity

From : Mar 13, 2015 20:00:00 EDT

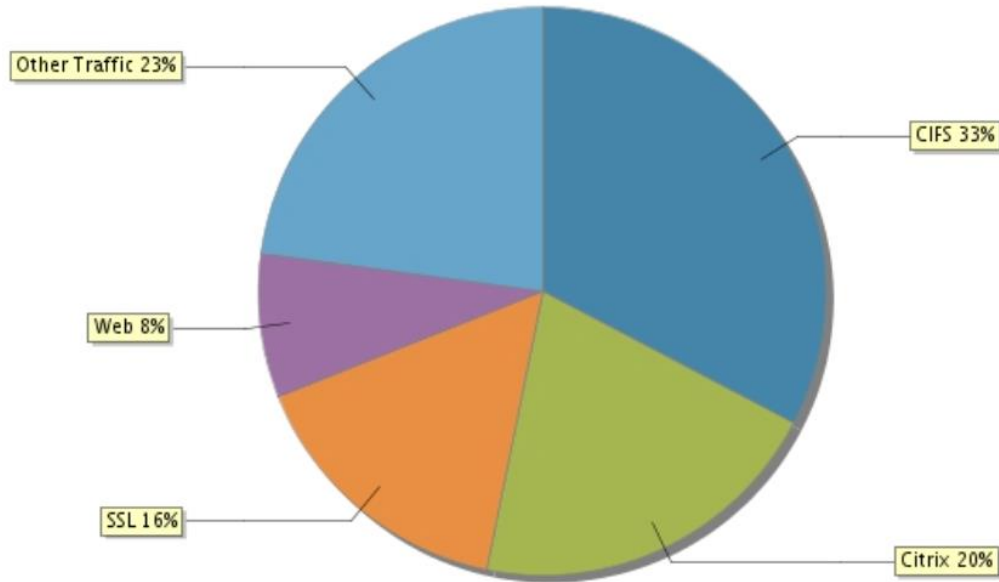
To : Apr 13, 2015 14:20:00 EDT



W*** Traffic Mix

From : Mar 13, 2015 20:00:00 EDT

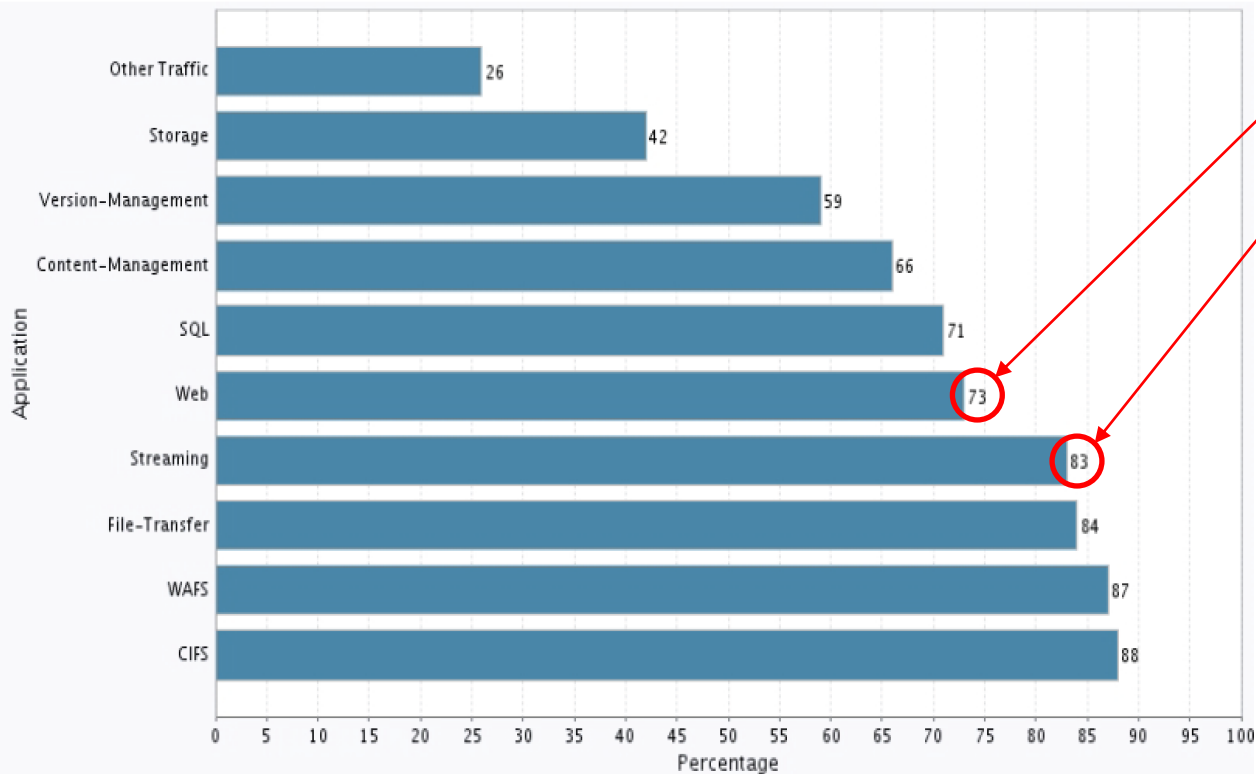
To : Apr 13, 2015 14:20:00 EDT



A** Bandwidth Reduction

From : Mar 14, 2015 18:00:00 CST

To : Apr 14, 2015 10:40:00 CDT



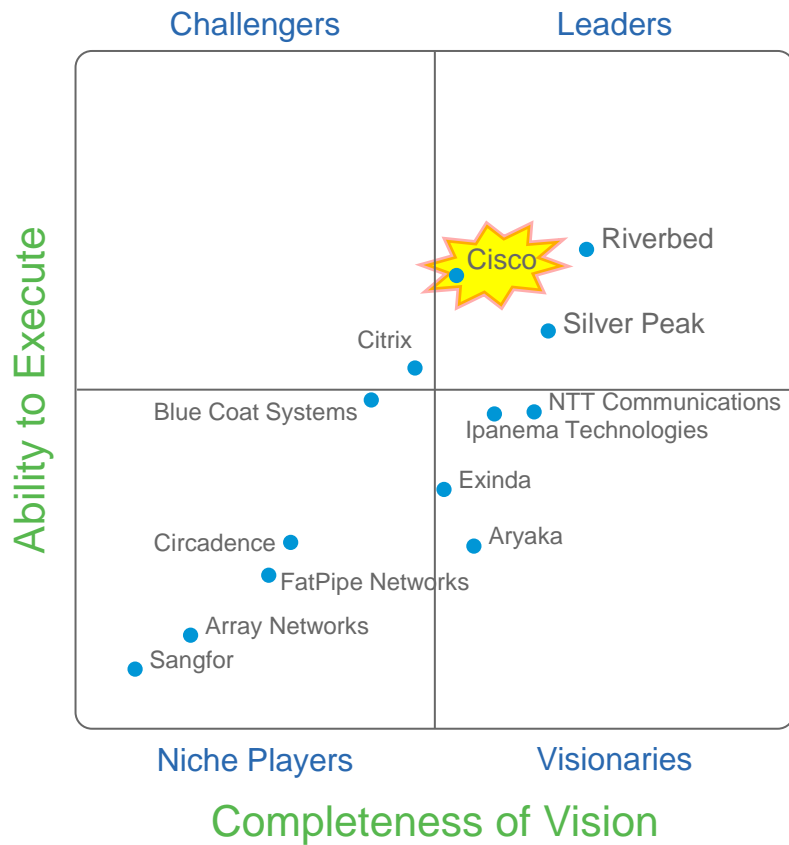
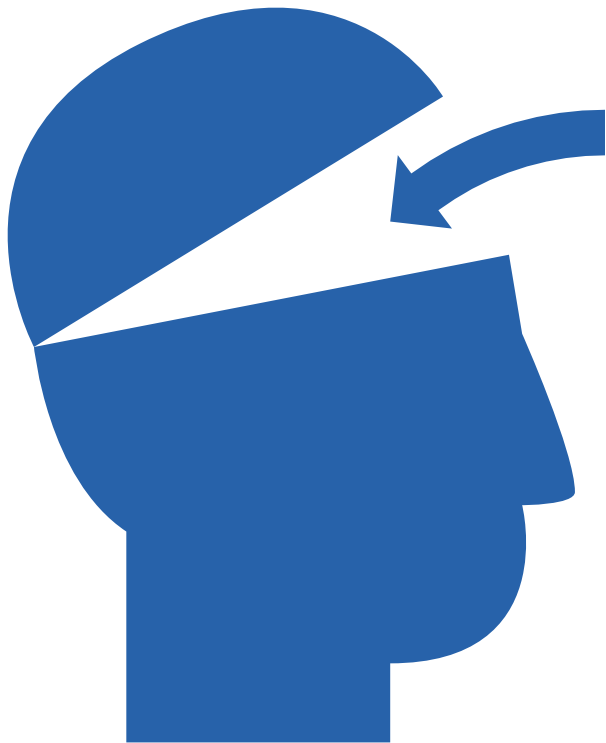
Web - 73%

Streaming - 83%

Key Takeaways



- IWAN is Cisco's Hybrid WAN solution
 - Tailored to your needs
 - Foundational to Cisco's SD-WAN
- Counter exploding bandwidth demands with Cisco IWAN with WAN optimization
- WAN optimization deliver improved user experience
save money, utilize bandwidth efficiently





CISCO

TOMORROW starts here.



cisco.com/go/iwan

cisco.com/go/waas

We appreciate feedback...

When you exit this event, a window with the evaluation survey should open.

Please take a moment to let us know if this session met your needs and expectations.

Thank You!