Ca$hing in on caching – an old approach reborn at UNSW

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Agenda

• So, what's the problem?
• Solutions
• Lessons Learnt
• Now, what’s next?
So, what’s the problem?

With $60,000 per month what connectivity would be available between New York and London?

a) 50,000Mbps capacity/ $1.2 per Mbps
b) 2,488Mbps capacity/ $24.1 per Mbps
c) 320Mbps capacity/ $193.5 per Mbps
d) Enough for World of Warcraft
So, what’s the problem?

With $60,000 per month what connectivity would be available between Sydney to California:

a) 50,000Mbps capacity/ $1.2 per Mbps
b) 1,244Mbps capacity/ $48.2 per Mbps
c) 400Mbps capacity/ $150 per Mbps
d) Bill Gates home connection
So, what’s the problem?

- UNSW Centralised traffic costs in 2007
- Significant wireless growth in 2008 including:
  - 300% increase in base stations
  - 1500% increase in concurrent users
- Bandwidth capacity far exceeds usage
- Cisco CE-590 Cache engines outdated and with no like for like replacement at the time
So, what’s the problem?

UNSW Internet Connectivity

- 34Mb
- 100Mb
- 1Gig
- 10Gb


UNSW Downloads in TB’s

- 86
- 120
- 250
- 458

So, what’s the problem?

What is the source of the problem?

a) Port 80 traffic
b) VOIP
c) Peer 2 Peer
d) I don’t care – I am too busy downloading Macgyver
So, what’s the problem?

The Solution

- Reviewed Cisco offering, Squid proxy and other vendors – no Enterprise solution
- Discovered BlueCoat at QUESTnet 2008
- Short period for implementation with initial deployment limited in scope to Internet traffic caching
- Training and certification available
The Solution

- Business case stood on just caching – without advanced features including streaming, quota management or peer to peer
- Ease of management, appliance device, small form factor, performance, feature rich and works "out of the box"
- Splash page / web site blocking deployed

$400,000 cost reduction year 1
ROI 1 year
$400,000 plus saving per year thereafter
The Solution

[Diagram showing network architecture with routers and internet connections]

The Solution

[Bar charts showing on-net and off-net traffic over time]

UNSW

Celebrating 60 YEARS of extraordinary achievement
Lessons Learnt

- Many ways to implement – a very flexible product
- Miracles can happen – from no product to implemented, flexible product with staff training completed in 4 months
- Transparent proxy and interaction with WCCP
- Watch out for a massive fall in Aussie dollar – even in such a short period

And the world changed...

- No AARnet excess traffic charges for 2009
- Fixed pipe will not be offered
- Long term subscription fee
- Have we just blown UNSW’s investment?
The Future

• Modify implementation to utilise Load Balancer (Cisco Content Services Module) to utilise transparent proxy
• Quota implementation
• Proxy services (Implementing Q3 09)
• Report to management how much money we save them as often as possible

Thank you for your time

You won’t get it back – but I hope you found it of value...