

Don't Let Your Network be an Obstacle to Learning

Web 2.0 Enabled Campus

David Cockerham
ANZ Country Manager



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Exinda at a Glance

- Australian vendor, founded in 2002
- Leading provider of packet shaping and WAN optimisation solutions
- Privately held with venture capital financing
- Over 4,000 customers in 40+ countries



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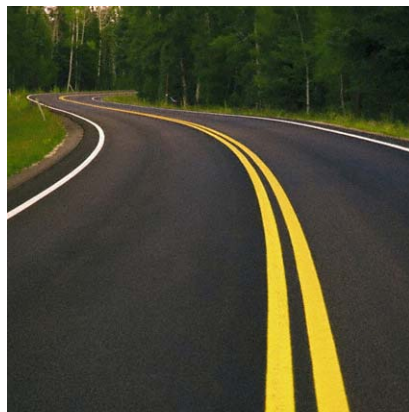
Exinda Unified Performance Management

UPM integrates all the components needed to achieve peak application performance



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Visibility – What You Can't See *Can* Hurt You



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UPM Components: Visibility

- Real-time monitoring reduces trouble-shooting time
- Detailed reports and drill-down enables visibility into all aspects of the network
- Identifies traffic including evasive applications using Layer 7 signature and heuristics
- Historical reports drive capacity planning
- Microsoft Active Directory integration enables reporting at the user name level for tracking and cost allocation

Throughput for Top 10 Inbound URLs

Legend for Top 10 Inbound URLs:

- 01:35AM 07 Apr 10: msn.com, www.theweek.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au
- 03:15AM 07 Apr 10: www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au
- 04:55AM 07 Apr 10: www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au, www.falcom.com.au
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Top 10 Inbound Applications

Legend for Top 10 Inbound Applications:

- SMTP, Flash, HTTP, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail
- HTTPS, SOAP-SSL, SOAP, OutTesting, Mail

Top 10 Applications Represent 100% of 76.39 MB

Control – Take Charge



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UPM Components: Control



- Precise policy-based traffic management and shaping ensures that low-priority traffic doesn't interfere with WAN performance
- Fair sharing ensures no one user or application can 'hog' the bandwidth
- Time of Day Policies
- Adaptive Response creates an adaptive network to changing condition in accordance to the policies that have been set

Before Exinda

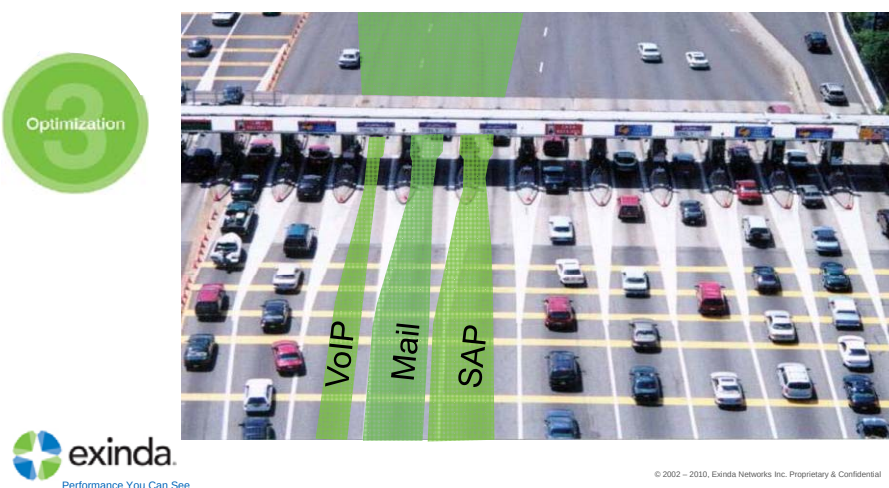


After Exinda

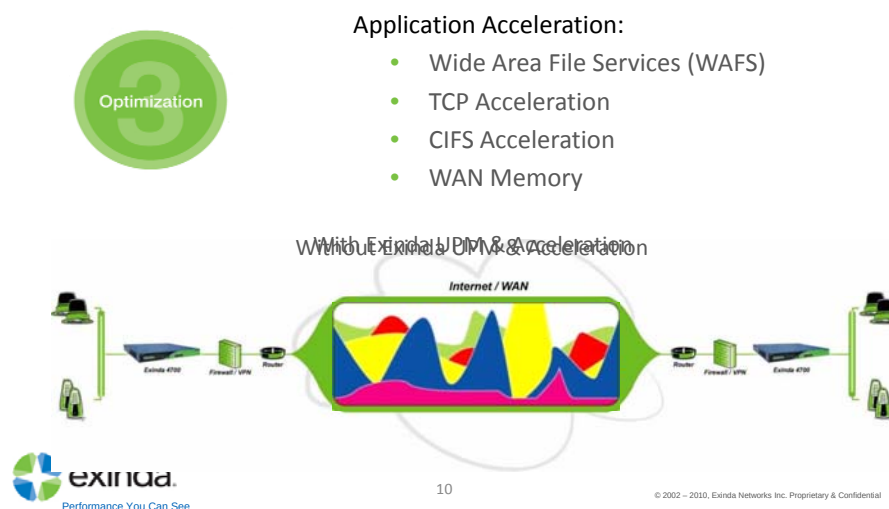


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Optimisation – Get the Most from Your Bandwidth



UPM Components: Optimisation



Market Evolution & Trends

(things that keep network admins up at night)



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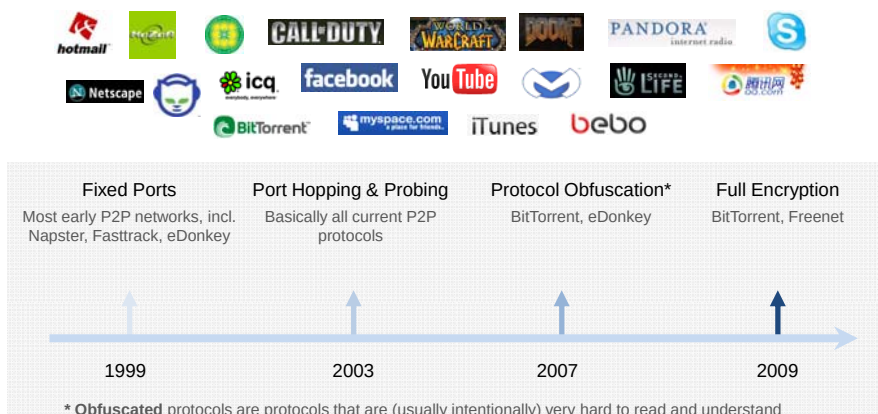
Duty of Care

- Schools have a duty of care to ensure the safety of their students while using technology.... *schools need to take positive, reasonable steps to protect the student from the risks*
- Acceptable use agreement
- Schools want to ensure their students are not exposing the school to liability/infringements
- Legislative changes coming



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The Evolution of Peer-to-Peer (P2P) Technology



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Peer-to-Peer (P2P) Technology

A recent BitTorrent study using data scraped from 19 BitTorrent trackers reported the following:



- 89.9% of all torrents were found to be infringing on copyrights
- Movie and TV shows making up 72.4%
- Only 1 non-infringing torrent (an open source program) was found in the most popular 100 torrents.

Source: Internet Commerce Security Laboratory, July 2010



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Anonymous proxies?

- Anonymous proxies are websites that allow network users to:
 1. Access blocked websites (Facebook, YouTube)
 2. bypass University traffic shaping rules
 3. surf the web anonymously
- But anonymous proxies utilise protocols (such as tunnelling, encapsulation or encryption) that easily bypass traditional filtering devices
- For tech savvy students anonymous proxies provide a means to beat the system
- Exinda allows network administrators to detect and limit/stop the use of anonymous proxies

Top 300 Internal Hosts Receiving Inbound Anonymous Proxy Traffic						
	Host Name	Host IP	Packets	Data (MB)	Throughput Avg (kbps)	Throughput Max (kbps)
1	10.3.201.3	10.3.201.3	11995	1.069	8.50	9.37
2	parkinglot.information.com	208.73.210.27	6220	0.285	1.14	1.30
3	66.37.153.96	66.37.153.96	2156	0.168	6.25	7.65
4	mail.atomintersoft.com	212.158.160.96	3597	0.144	3.03	4.08
5	207.58.178.116	207.58.178.116	1300	0.081	1.01	1.20
6	82.98.86.173	82.98.86.173	1166	0.051	0.82	1.14
7	82.98.86.178	82.98.86.178	1169	0.051	0.78	1.10

Microsoft Active Directory integration

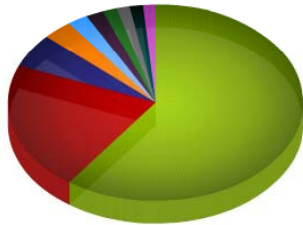
- “Follow the User” model allows tracking network and application usage by Active Directory User Name
- Apply acceleration and optimisation policies to active directory users/Groups
- Active directory User/Group based reporting

Inbound Conversations			
External IP	Internal IP	Application	Rate (kbps)
207.5.72.97	172.16.0.206	IMAP-SSL	377.089
192.168.37.100	172.16.0.206	SSH	16.731
150.101.98.85	172.16.0.179	HTTP[dd.connextra.com]	1.152
150.101.98.78	172.16.0.179	HTTP[fl.connextra.com]	0.605
203.16.214.182	172.16.1.240	SMTP	0.505
64.233.189.19	172.16.0.154	HTTPS	0.448

Inbound Conversations			
External IP	Internal IP	Application	Rate (kbps)
207.5.72.97	anna_leung	IMAP-SSL	941.704
207.5.72.97	anna_leung	HTTPS	17.038
192.168.37.100	anna_leung	SSH	17.038
207.5.72.97	penny_kostas	HTTPS	12.179
203.24.7.21	joe_smith	HTTPS	5.380
207.5.72.97	anna_leung	Skype	1.933

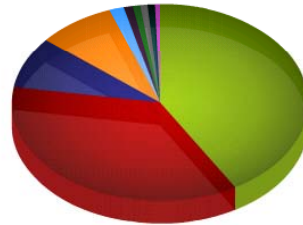
Historical Monitoring by Username

Top 10 Internal Users Receiving Inbound Traffic



Chris John Jamie Kenny Ameya
Avish Patrick Ming Steve Mark

Top 10 Internal Users Sending Outbound Traffic



Chris Kenny Max Jamie Avish
Brent Ameya George Mark Con

Top 100 Internal Users Receiving Inbound Traffic

	User	Packets	Data (MB)	Throughput Avg (kbps)	Throughput Max (kbps)
1	Chris	205833	186.263	60.91	1706.22
2	John	87347	65.931	310.40	3753.39
3	Jamie	111345	17.368	24.49	323.36
4	Kenny	201028	10.161	19.63	49.55
5	Ameya	36068	6.909	1.02	7.18
6	Avish	20382	6.012	18.24	133.71
7	Patrick	5843	4.839	19.82	249.39

Application Performance Score

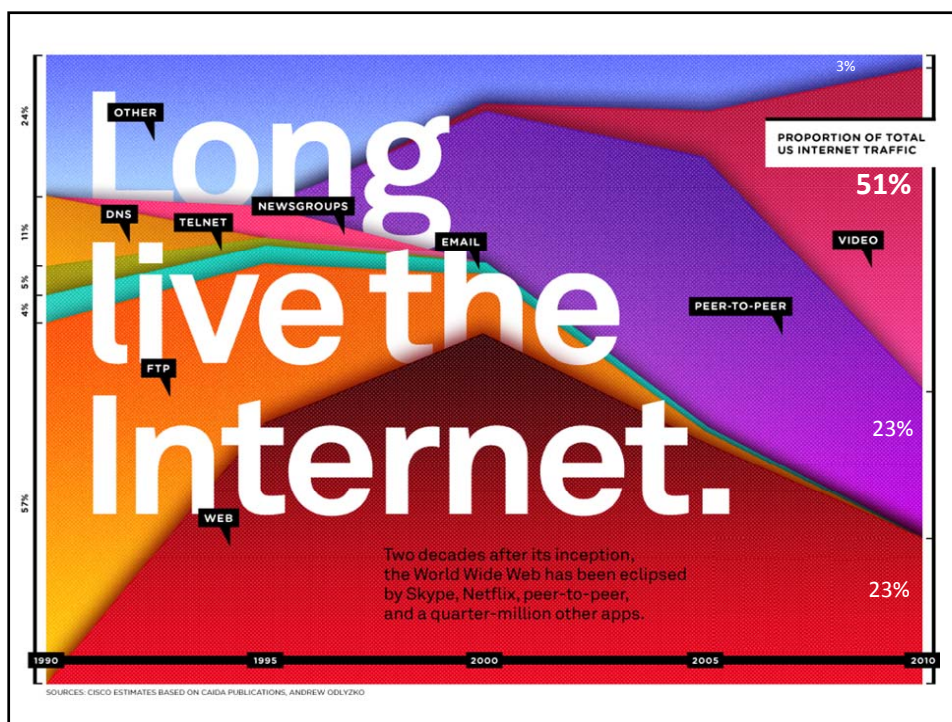
- APS allows the network manager to set the desirable application performance thresholds and monitor if and when the thresholds are being met or exceeded
- Real Time and Historical Data
- Each APS Object is given a score from 0 to 10 based on how well these objectives were met



IP v6

- Exinda provides all the capabilities for IPv6 as we do for IPv4
- Exinda Appliances handle the IPv6 traffic natively, just as it does IPv4 traffic
 - Full visibility for IPv6 (Classification, Monitoring, Reporting)
 - Full policy-based control for IPv6 (Objects, QoS)
 - Flow Export of IPv6 traffic
- No compromises have been made in supporting IPv6
- Exinda allows for you to transition to IPv6 traffic on your own time-line by supporting both IPv6 and IPv4 traffic.

Top 30 Inbound Conversations						
External Host	Internal Host	Application	Data (MB)	Throughput (kbps)		Flows
				Average	Max	
[+] Show Details						
fd45:3619:de0d:10::1	fd45:3619:de0d:1b::1	SSH	1.778	242.71	242.71	1
10.14.0.2	10.3.0.2	ExindaCom	0.221	0.20	0.33	11
fd45:3619:de0d:10::1	fd45:3619:de0d:1b::1	ICMPV6	0.007	0.73	0.73	1
fd45:3619:de0d:10::3	fd45:3619:de0d:1b::1	ICMPV6	0.000	0.16	0.16	1



Introducing Exinda Edge Cache

- What is Edge Cache?

- A *single-sided object cache* for web objects, including web pages, images, videos, and software downloads.

- What does Edge Cache do?

- Edge cache stores or *caches objects* requested from the WAN or Internet.

- How does Edge Cache work?

- Exinda Edge Cache is *single-sided*, meaning it functions independently on one Exinda appliance and does not need to coordinate with another.
- Exinda Edge Cache *transparently* intercepts WAN/Internet requests. If the object is in the cache, the request is served at LAN speed.
- Exinda Edge Cache is fully *integrated* with Exinda Optimiser policies.



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Exinda Edge Cache – Web Objects

- Supports Standard Web Objects

- Web Pages – HTML pages, JPEG images

- Downloads

- Downloads – ZIP, RAR, EXE, ISO

- Software Updates

- Updates – Microsoft, Adobe, Apple, Symantec, etc.

- Video Objects

- YouTube, Vimeo, Google Video, etc.

- Video URLs

- Dynamic URLs – link to video file is dynamically generated
- Static – URL links to actual video object



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DESIGNED SPECIFICALLY TO MEET THE NEEDS OF THE EDUCATION SECTOR, Jet Education is Australia's most popular Quota Management and Billing system throughout Universities.

Obsidian customers can provide quota management utilising Exinda solutions.



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Case Studies



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St Bede's College, Melbourne

Case Study



"Our internet bandwidth usage used to be like an out-of-control school cafeteria. With no order or rules, the biggest, loudest and hungriest students or applications would shout their orders out of turn and devour all the available food or resources. The smallest or more timid students would go hungry. Exinda acts like the canteen supervisor, setting rules, creating queues, silencing the bullies and makes sure there is a fair and efficient distribution of resources for all."



—David Cracknell, IT Director, St. Bede's College

Network

1350 Students

Challenges

Control recreational and P2P traffic
Adaptively respond to bandwidth hogs

Solution

Exinda 4700
Bandwidth management
Recreational and P2P traffic control

Results

Implemented effective bandwidth shaping policies
Improved user experience and application responsiveness
Ensured sufficient network capacity for educational and administrative applications

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North Melbourne Institute of TAFE (NMIT)

Case Study



"With Exinda we have a solution that will scale beyond the 1GB pipe we currently have with only a license upgrade."

— David Hardy - NMIT



Network

Over 74,000 course enrolments in 2009 and 3000 nodes

Challenges

Difficulties in prioritising traffic based on importance and users.
Control recreational and P2P traffic

Solution

Exinda 8760
Multi-GB bandwidth management
Recreational and P2P traffic control

Results

Implemented effective bandwidth shaping policies
Improved user experience and application responsiveness
Ensured sufficient network capacity for future growth

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Manhattan School of Music

Case Study



"We had traffic overload and general latency for surfing, audio, and video that was bordering on being completely unusable. The Exinda WAN optimisation appliance has allowed us to manage network usage, eliminate P2P traffic and easily set optimisation policies to get the most out of our available bandwidth."

— Jonathan Keeley, Manhattan School of Music



Network

800 Students, 275 Faculty Members

Challenges

Control recreational and P2P traffic
Adaptively respond to bandwidth hogs
Defer upgrading bandwidth for 3-7 years

Solution

Exinda 6700
Bandwidth management
Recreational and P2P traffic control

Results

Implemented effective bandwidth shaping policies
Improved user experience and application responsiveness
Ensured sufficient network capacity for future growth
Gained the ability to run dual networks with different optimisation policies

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Value for Money- Exinda 6760-1G

Visibility

Identification

- Layer 7 Classifications
- Heuristic Classification
- URL Classification
- Anonymous Proxy Detection
- Citrix Published Applications
- Active Directory User ID
- VoIP Codec

Performance

- Application Performance Scoring
- VoIP Mean Opinion Scoring (MOS)
- Service Level Agreements
- Network Efficiency & TCP Health

Reporting

- Drill Down Capabilities
- Real Time Monitoring
- Top Talkers/Top Conversations
- Automated PDF Reporting

Control

Quality of Service

- QoS / Dynamic per IP / per User
- Application Predictability
- Bandwidth Guarantees & Limits
- Prioritization
- Traffic-shaping

Fairness

- Bandwidth Management
- Active Directory Integration
- Dynamic Bandwidth Allocation
- Over-subscription

- 1 Gb full duplex bandwidth license
- Edge Cache
- 1 Year HW maintenance with SW upgrades

50k AUD RRP



Questions?



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