WASD: why is it chosen when there's VMS Apache?

OpenVMS Advanced Technical Bootcamp 2006
Sessions D211 and D215
Mark Daniel
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WASD: why is it chosen when there's VMS Apache?

Open^

OpenVMS Advanced Technical Bootcamp 2006
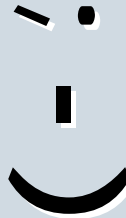Sessions D211 and D215
Mark Daniel
mark.daniel@wasd.vsm.com.au

An objective assessment

An objective assessment

by the author of WASD

An objective assessment

by the author of WASD

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WASD: why does it **continue** to be chosen when there's Apache?

Apache: why is it chosen when there's WASD?

Rationale

Why would any developer choose something not 'industry standard', with a smaller user base, fewer tools and seemingly more tenuous support?

Rationale

Why would any developer choose something not 'industry standard', with a smaller user base, fewer tools and seemingly more tenuous support?

Same might be asked of OpenVMS!

Rationale

Purpose of the session is not (necessarily) to proselytize WASD but to explain how it might end up the preferred option for given projects and sites.

Thanks to Sponsors

Hewlett Packard

John Gillings and OpenVMS Engineering for the 'admit one'

VSM Software Services

Jeremy Begg for not needing to swim here

Defence Science and Technology

Paul Amey for 'board and lodging'

My wonderful spouse

Robyn for a long-*ish* leash and some pocket-money

Session Overview

Selection Considerations
Apache and WASD Features
Scripting Support
Performance
Case Studies
> Education
> Finance
> Telecommunication

Poll

> Differentiators
> Testimonials

Rumination
Questions

Selection Considerations

Selection Considerations

- **Purpose**
  - Document publication
  - Data connectivity
  - Web 'applications'
- **Security**
  - Authentication sources
  - Access control
  - Privacy (e.g. SSL)

- **Content**
  - Static
  - Dynamic
    - Scripting
    - *Pages (e.g. JSP, PHP)
- **Scripting**
  - CGI
  - Perl, PHP, Python, etc.

Selection Considerations

- **Load**
  - Peak
  - Average
- **Platform**
  - Alpha, Itanium, VAX
  - OpenVMS V*n.n*
  - Hobbyist, SOHO, Enterprise

- **Other**
  - Policy
  - 'Industry standard'
  - Documentation
  - Community
  - Contractual
  - Skills base
  - Comfort zone

Features

Apache and WASD Toe-to-Toe

Macro Comparison

	Apache	WASD
HTTP/1.1	Yes	Yes
Alpha/Itanium	Yes	Yes
Secure Sockets	Yes	Yes
IPv4 & IPv6	Yes	Yes
Persistent Scripting	Yes	Yes
Access Control	Yes	Yes
Request 'Rewrite'	Yes	Yes
Proxy	Yes	Yes
Logging	Yes	Yes
Perl, PHP, Python, etc.	Yes	Yes
License	GPL	GPL

Platform Support

	Apache	WASD
Alpha	Yes	Yes
Itanium	Yes	Yes
VAX	No	Yes
V6.0	No	Yes
V6.1	No	Yes
V6.2	No	Yes
V7.1	No	Yes
V7.2	V1.3	Yes
V7.3	V2.1	Yes
V8.2	V2.1	Yes
F8.3	V2.1(?)	Yes
Install ODS-2	V1.3	Yes
Install ODS-5	Mandatory V2.1	Yes

Concurrent Serving

	Apache	WASD
Server	Child Processes	Single Process
Concurrency	Per-Process*	VMS AST
Multi-CPU	Per-Process	Multiple Instances**
Scripting	Per-Process or Subprocess	Detached Process

* To support 100 concurrent requests Apache requires a minimum of 101 processes.
** Multiple, per-CPU processes, cooperating via mutex and the DLM.

File   Edit   View   Go   Bookmarks   Tools   Window   Help

Back   Forward   Reload   Stop   https://www.uma.es/httpd/~/admin/report/stats   Search   Print   hp
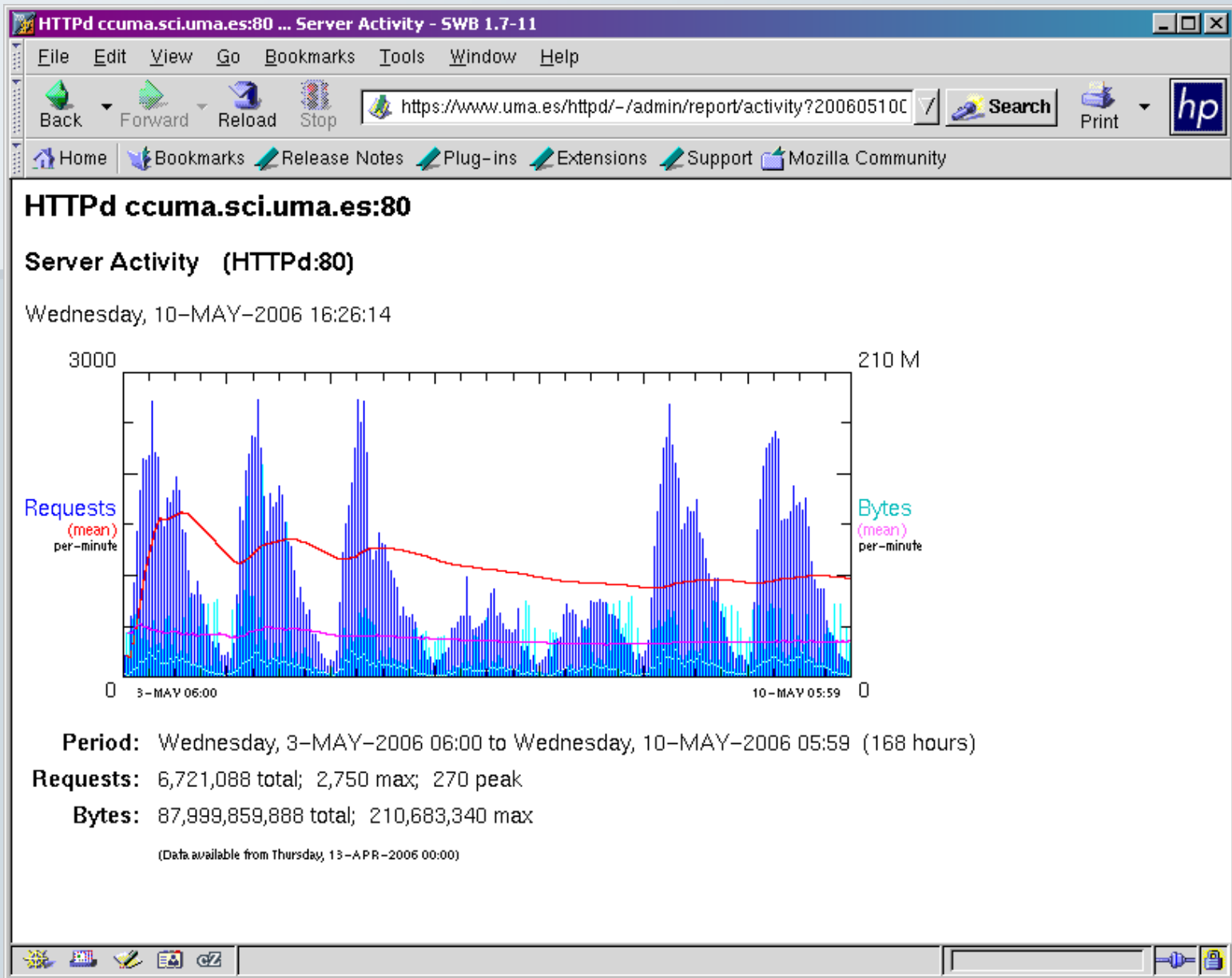
Home   Bookmarks   Release Notes   Plug-ins   Extensions   Support   Mozilla Community

Request Processing

Connection

Total:	11778542
Current:	90
Peak:	602
Busy:	2
Persistent /Current:	85
/Peak:	598
Accepted:	11778540
Rejected:	0
IPv4:	11778542 (100%)
IPv6:	0 (0%)
SSL:	825983 (7%)
Total /Rx:	20,721,796,586
/Tx:	550,615,568,045
Error /Rx:	74336
/Tx:	493057

Request

Total:	47648025
Current:	3
Peak:	177
Busy:	0
Throttle /Queued:	0
/Processing:	0
/Busy:	0%
Redirect /Local:	4626103
/Remote:	103607
Persistent /Total:	33549564
/Max:	1024
Pipeline /Total:	45471
/Max:	79
Not From Cache:	1199612
Forbidden:	55387

HTTP

1.1:	34749583 (80%)
1.0:	8271075 (20%)
0.9:	1318 (0%)

Method

CONNECT:	0
DELETE:	0
GET:	47065581
HEAD:	12365
OPTIONS:	219526
POST:	260154
PUT:	69
TRACE:	0
Extension:	0

Response

1nn:	91340
2nn:	23237181
3nn:	17825067
4nn:	1685289

Duration

Min:	0.000976
Max:	01:00:17
Ave:	0.349806

Done
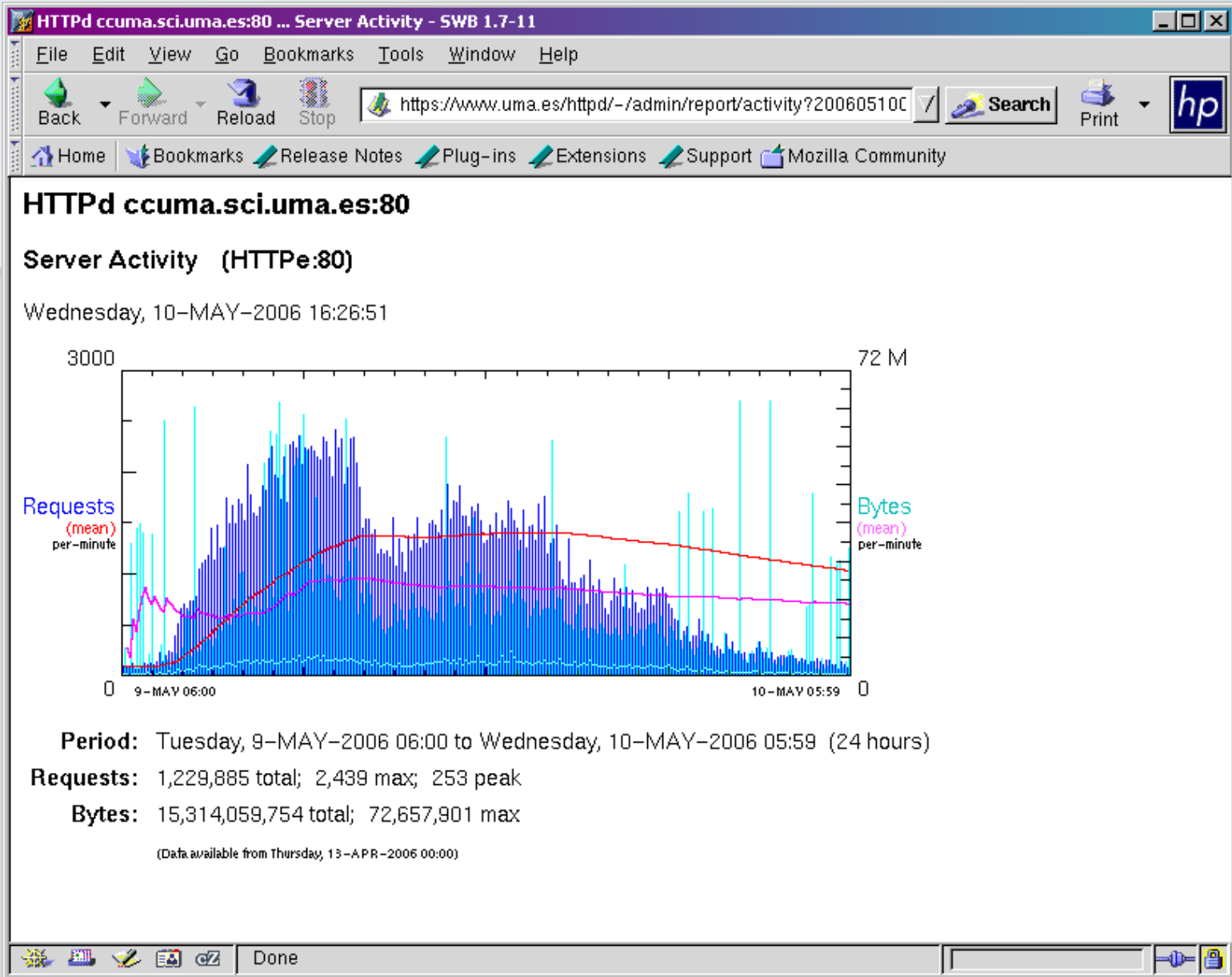
Authentication

	Apache	WASD
Package*	Yes	Yes
SYSUAF	Module	Yes
PKI**	Module	Yes
Custom***	Yes	Yes

*   package-specific username/password
**   Public Key Infrastructure (X.509, etc.)
***   User-written authentication support

Scripting Support

	Apache	WASD
CGI	Just*	Yes
Perl	Module	RTE**
PHP	Module	RTE
Python	Module	RTE
Tomcat	Module	Reverse Proxy
Persistence	Yes	Yes

* Implied criticism of OpenVMS Apache performance
** RTE is a persistent Run-Time Environment

Persistent Scripting

So what is 'persistence' then?

The ability of the server to reuse resources (such as processes) over multiple requests

A scripting/interpretation engine retaining it's initialized state over multiple requests

Persistent Scripting

Why is 'persistence' so important?

Process activation expenses
- Latency
- CPU cycles

Scripting engine initialization
- Latency
- CPU cycles

Persistent Scripting

CGI paradigm is <u>very</u> expensive; solutions:

Apache
- child processes
- loadable modules

WASD
- reusable detached processes
- CGIplus
- Run Time Environment (RTE)

WASD CGIplus

CGI   - plus lower latency
         - plus greater throughput
         - plus far less system impact

CGIplus eliminates the overhead associated with creating the script process and then executing the image of a CGI script. It does this by allowing the script process and optionally any associated image/application to remain instantiated between uses, eliminating process and/or application startup overheads.

The script interface is still CGI, with all the usual environment variables and input/output streams available, which means a new API does not need to be learned and existing CGI scripts are simple to modify.

RTE (implemented using CGIplus) is intended as an environment in which a script source is interpreted or otherwise processed by the application. That is, for scripting engines, although it is not limited to that. Perl, PHP and Python engines for WASD are implemented using RTE. Start once - execute many.

Performance

The test system was a lightly-loaded AlphaServer 4100 4/400 (4 x 400MHz CPUs), OpenVMS V7.3-2 and DEC TCP/IP 5.4. No keep-alive functionality was employed so each request required a complete TCP/IP connection and disposal. DNS (name resolution) and access logging were disabled. The server and test-bench utility (ApacheBench v1.3) were located on separate systems with 100 Mbps Fast-Ethernet interconnection.
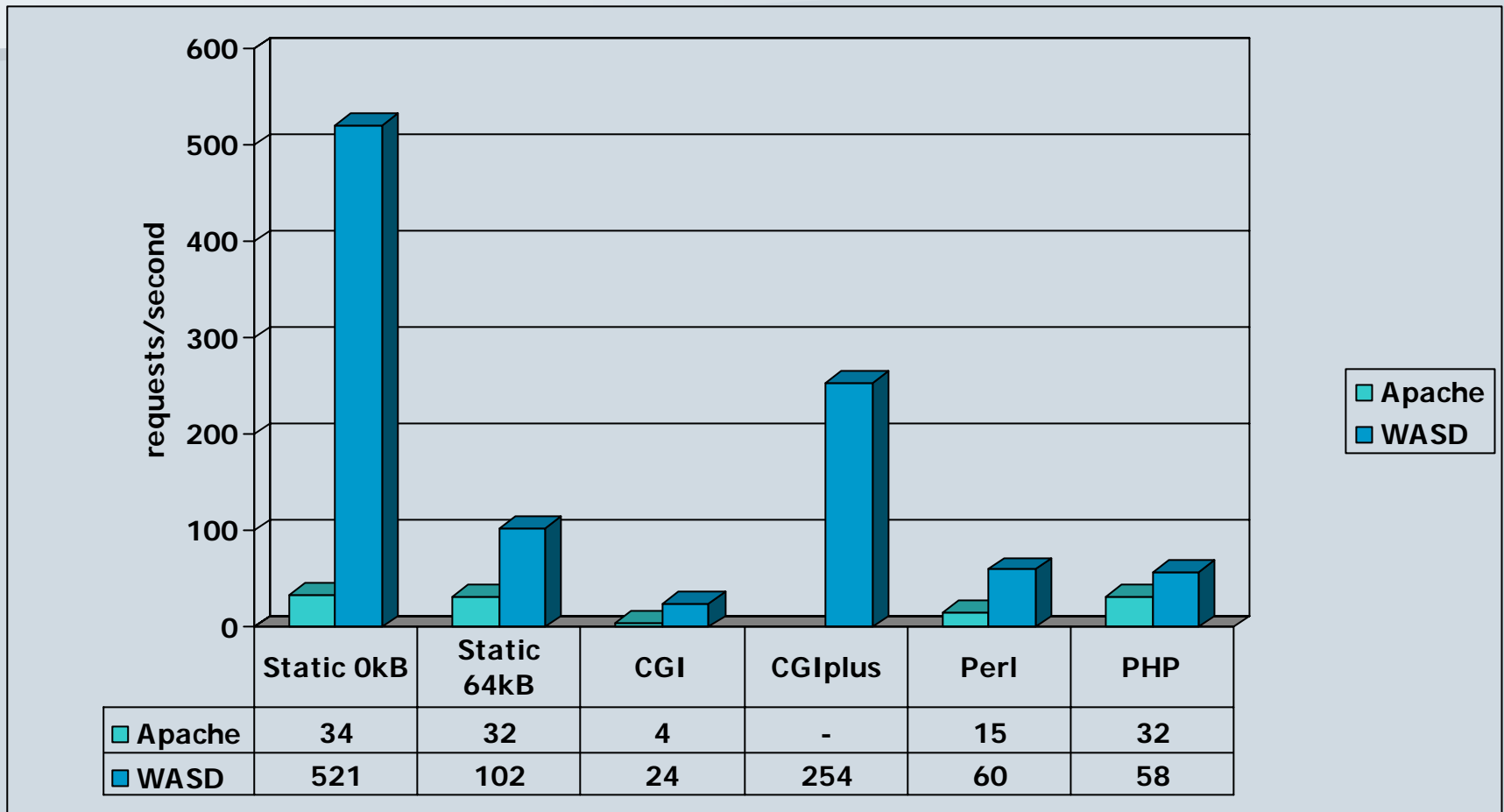
On clustered, multi-user systems too many things vary slightly all the time. Hence the batching of accesses, interleaved between servers, attempting to provide a representative result.
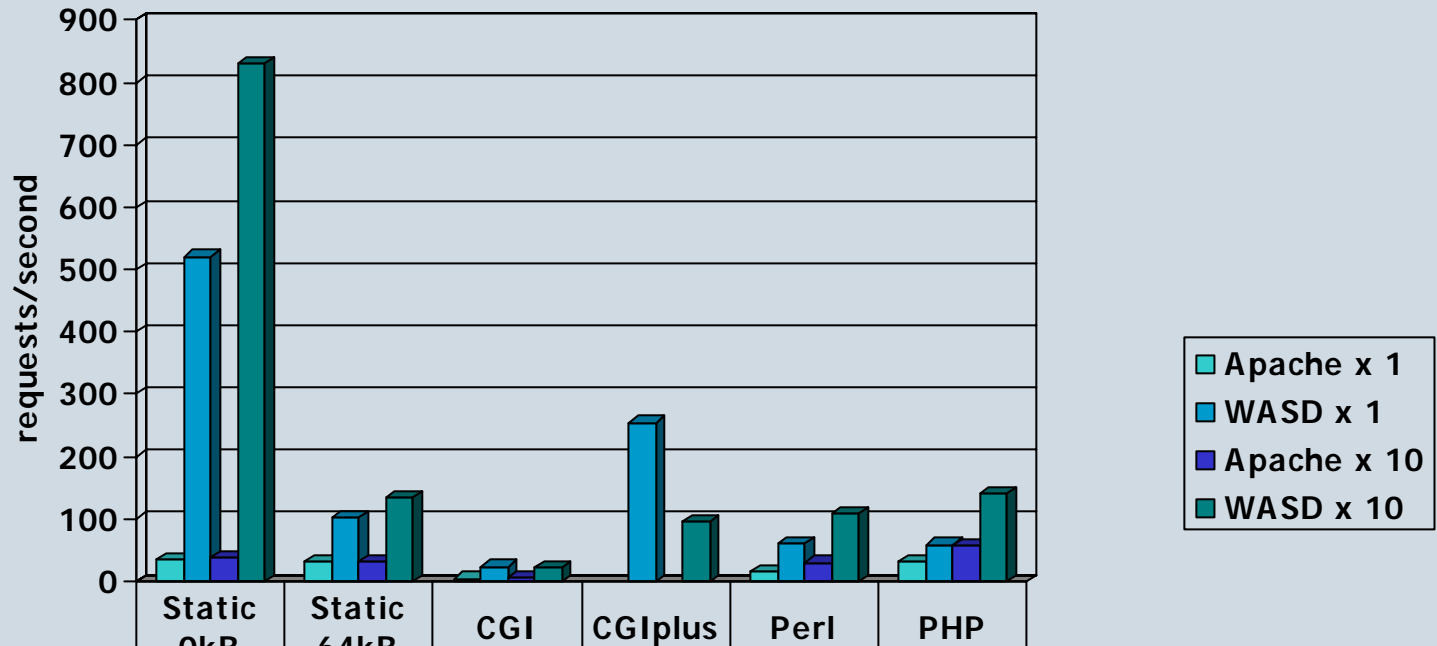
CSWS 1.3 (based on Apache 1.3.26)
WASD 9.0

Source: http://wasd.vsm.com.au/ht_root/doc/htd_2100.html

Performance – 1 concurrent

	Static 0kB	Static 64kB	CGI	CGIplus	Perl	PHP
■ Apache	34	32	4	-	15	32
■ WASD	521	102	24	254	60	58

requests/second

■ Apache
■ WASD

source: http://wasd.vsm.com.au/ht_root/doc/htd_2100.html

Performance – 10 concurrent

requests/second

	Static 0kB	Static 64kB	CGI	CGIplus	Perl	PHP
☐ Apache x 1	34	32	4	-	15	32
☐ WASD x 1	521	102	24	254	60	58
☐ Apache x 10	38	32	5	-	29	57
☐ WASD x 10	831	134	21	95	108	140

Legend:
- ☐ Apache x 1
- ☐ WASD x 1
- ☐ Apache x 10
- ☐ WASD x 10

Case Studies

OpenVMS+WASD success stories

Case Study - Education

Universidad de Málaga - Spain

- 4 campuses; 19 faculties; 65 undergraduate courses; 3760 staff; 40,000 students
- A significant user of OpenVMS for email, Web, database and administration
- Planning migration from OSU to Apache in late 2002 evaluation revealed show-stopping issue with Apache

"A second threat for [SSL certificate] key disclosure exists during script execution because scripts run in the context of the server and have complete access to key files no matter where they exist (as long as they exist in a directory accessible to APACHE$WWW). Therefore, it is not advisable to allow the execution of arbitrary user scripts when using SSL." *OpenVMS Apache Release Notes*

Case Study - Education

Universidad de Málaga - Spain

Evaluated WASD in early 2003 and put it into production shortly after!

76 virtual servers

>1M requests and >15GB per weekday

>600 concurrent connections and >100 requests in-progress routinely supported (using 2-30 processes)

X.509 based PKI authentication access control

Extensive deployment using PHP, along with existing OSU scripts, and more recent CGI based applications

File   Edit   View   Go   Bookmarks   Tools   Window   Help

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Home   Bookmarks   Release Notes   Plug-ins   Extensions   Support   Mozilla Community

CONSTRUIMOS FUTURO
building a future

UNIVERSIDAD DE MÁLAGA

ENGLISH   Contenidos   Colectivos   Información   Personas ● Noticias ○

CONTENIDOS

Preuniversitarios
Descripción y visita
Órganos de gobierno
Espacio Europeo
Campus virtual
Centros
Departamentos
Oferta de Estudios
Matrícula
Servicios
Investigación
Tercer ciclo
Cultura
Deporte
Programas de movilidad
Coordinación universitaria
Cooperación empresarial
Desarrollo Tecnológico
Infraestructura
Gerencia
Plan Estratégico
Fundación

CANAL DE NOTICIAS

28 de Abril de 2006

Las salas de exposiciones del Rectorado acogen dos nuevas muestras de fotografía y pintura
Se pueden visitar todos los días de la semana hasta el próximo 14 de mayo

[ampliar]

La UMA colabora en la celebración del Festival solidario 'Entresures', organizado por CC. OO.
Los fondos irán destinados a la rehabilitación de centros escolares en el Sáhara

[ampliar]

El Consejo Social apuesta por potenciar los proyectos innovadores de las empresas
Pone en marcha Innovanos.es junto a la Junta, la Cámara de Comercio y la CEM

[ampliar]

Inaugurado el Congreso sobre el agua subterránea en los países del mediterráneo
250 congresistas se dan cita en este evento, que se celebra en el Palacio de Ferias y Congresos

[ampliar]

▶ BUZÓN DE NOTICIAS   ✚ MÁS NOTICIAS

CANAL TV

• Calles del campus con nombres célebres
• 12 Andalucía Cinema
• Concierto de Jazz
• Proyectos de Diseño Industrial

■ MÁS CONTENIDOS

COLECTIVOS

PROFESORES
ALUMNOS
PAS

AGENDA

< Abril 2006 >

Lu	Ma	Mi	Ju	Vi	Sa	Do
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
1	2	3	4	5	6	7

Gobierno

Acuerdos del Claustro Universitario

Presupuesto de la Universidad de Málaga, 2006

Logotipos oficiales. Zona de descargas

Servicio de traducción automática

CALENDARIO   HORARIO

Case Study - Education

Universidad de Málaga - Spain

"WASD has allowed us to build a very robust, and above all, secure, web infrastructure, without having to give up twenty years of VMS knowledge. For us, the strongest points of WASD are excellent performance, excellent VMS security model integration and unbeatable support."

site: http://www.uma.es/

Case Study - Education

ESME-Sudria – France

Ecole d'Ingénieurs Généralistes
(College of Engineering)

- Automation
- Electronics
- Telecommunications
- Computer and Software Engineering

Case Study - Education

ESME-Sudria – France

> Internet
>
> Intranet
>
> Standard proxy
>
> Reverse proxy
>
> Gatewaying

Les services Web à l'ESME-Sudria

Cluster VMS/WASD
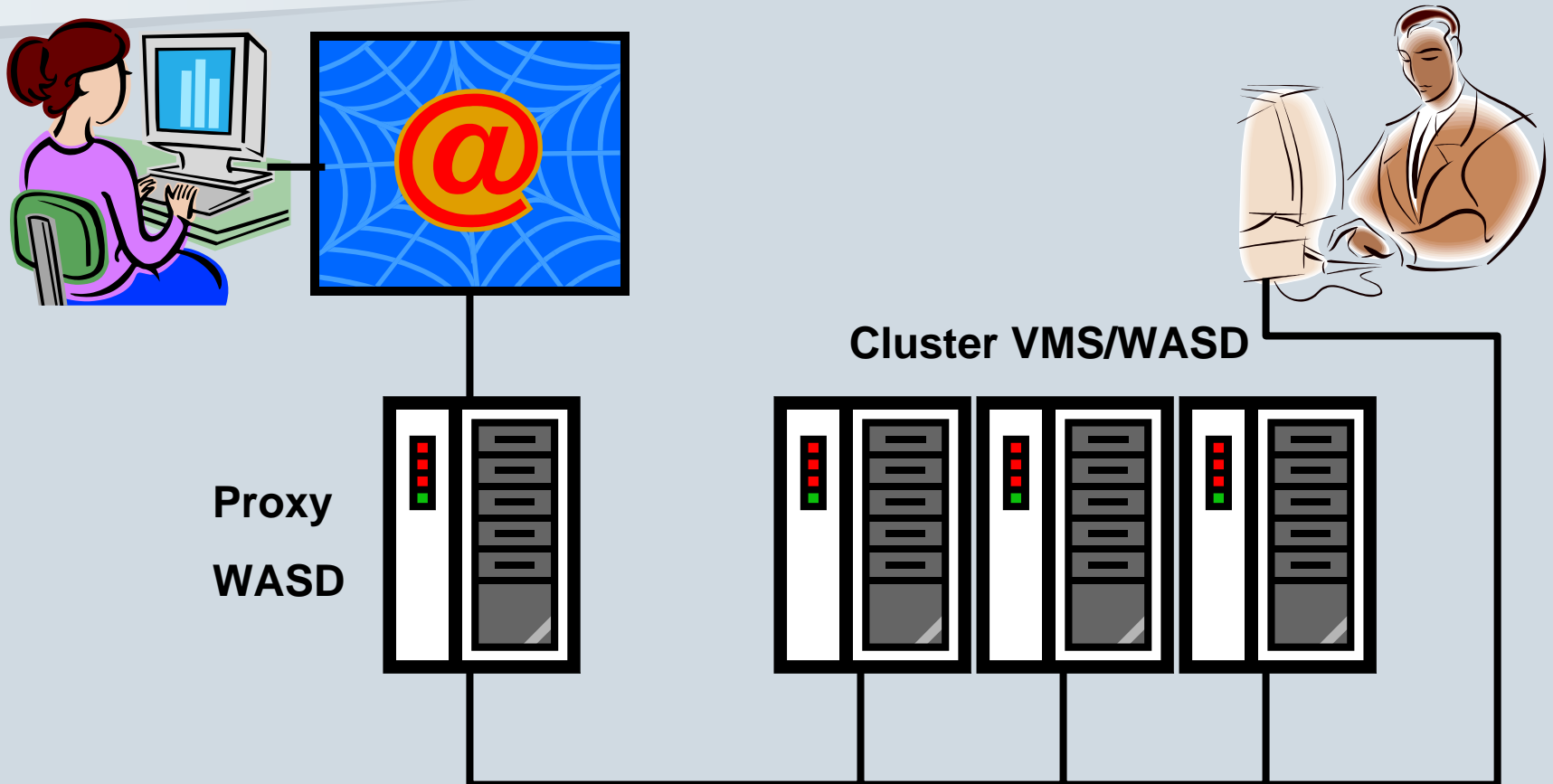
Proxy

WASD

Serveurs Intranet

Proxy

WASD

Site interne
intranet.esme.fr
WASD
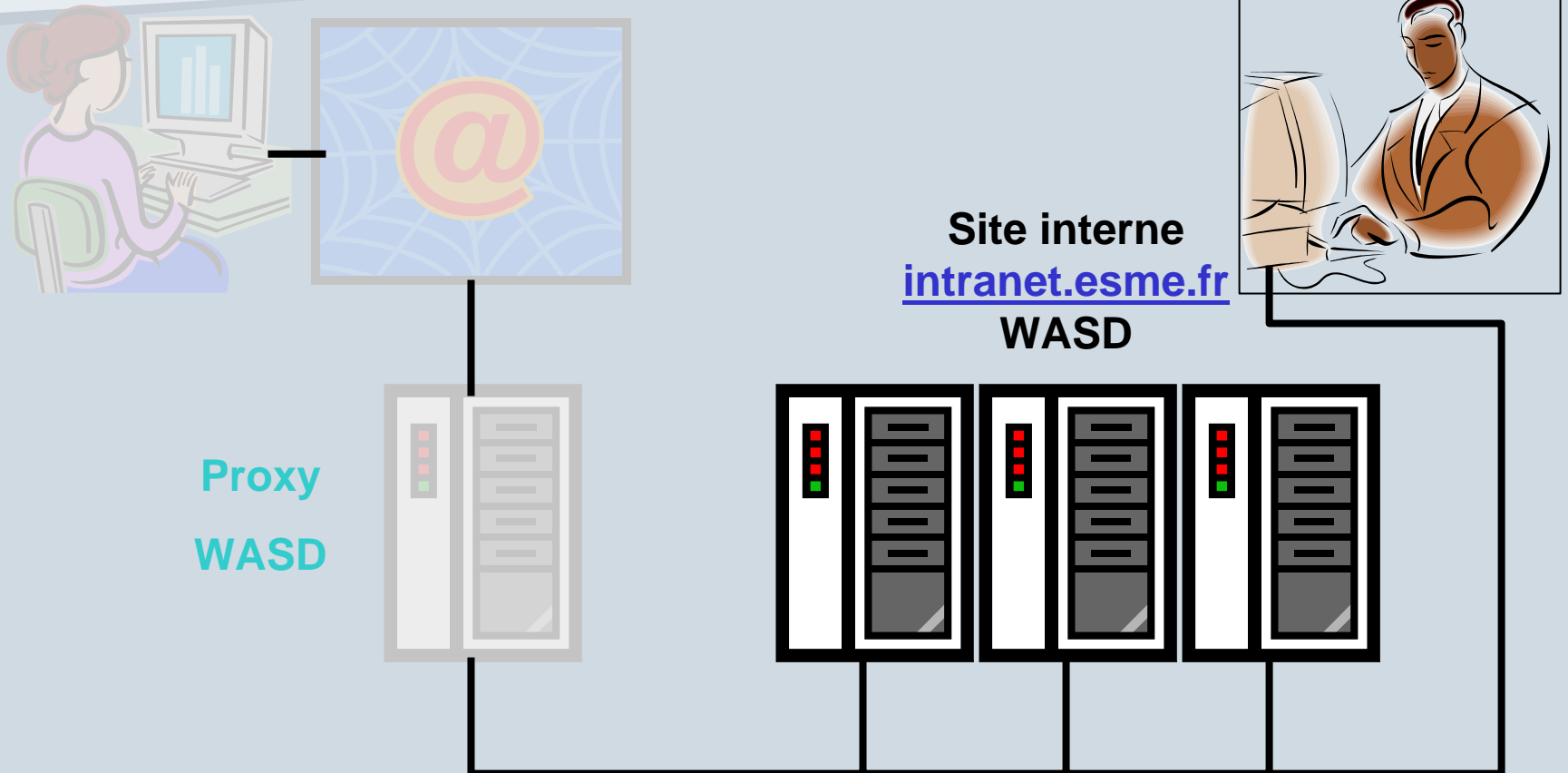
Proxy standard d'accès à Internet

Proxy

WASD

Cache

HTTP

Cluster VMS/WASD
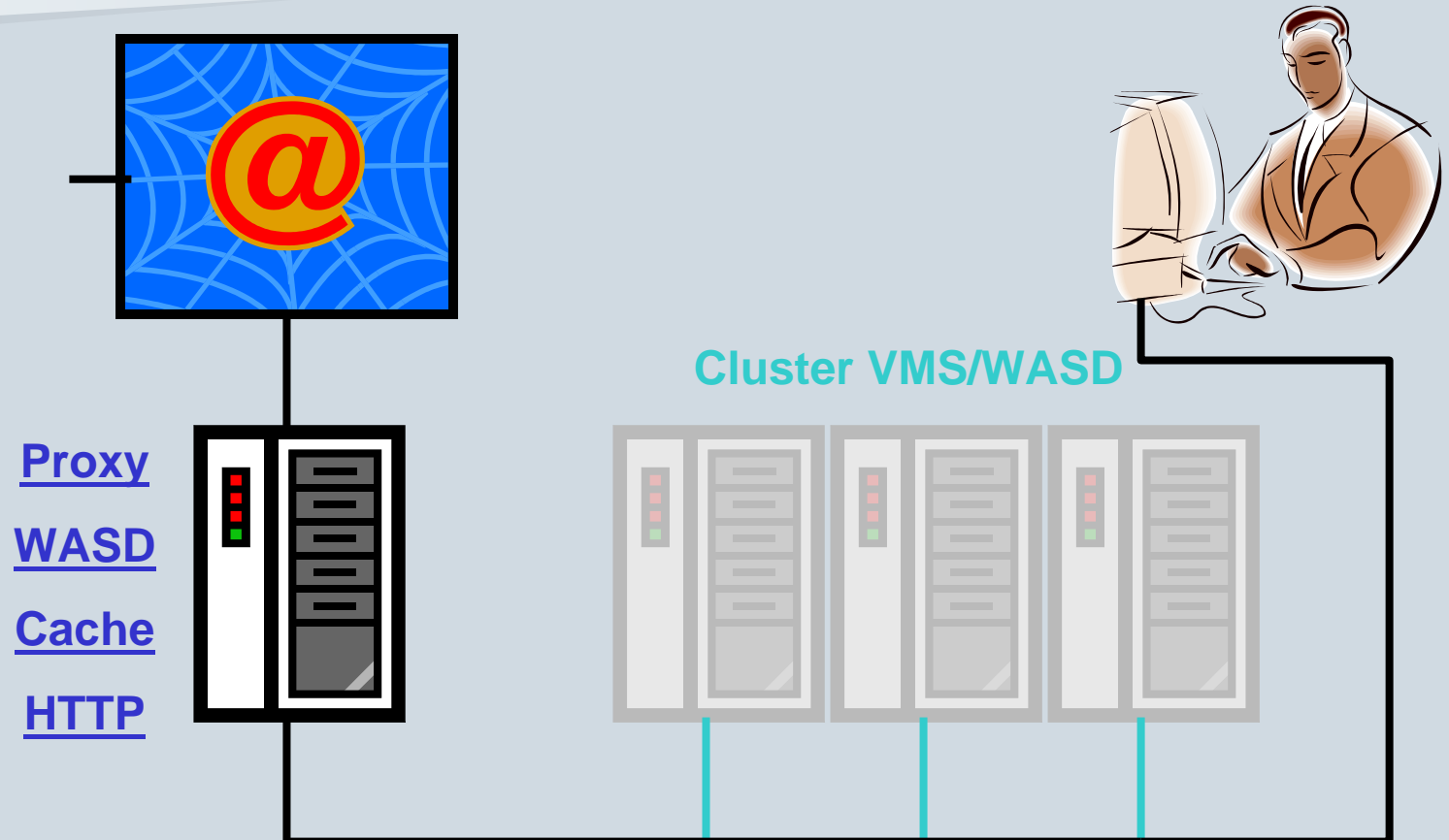
Reverse proxy HTTP

Reverse

Proxy

WASD

Site public
www.esme.fr
WASD

Reverse proxy HTTPS

Site interne
intranet.esme.fr
WASD

Reverse

Proxy

WASD

DNS wildcard proxy

Site externe bibliographique
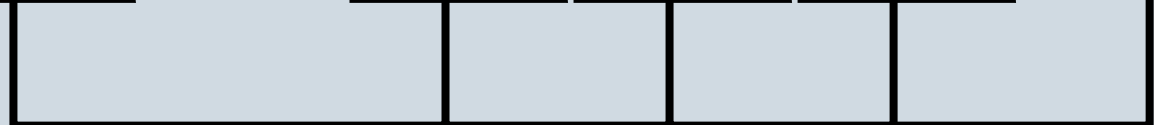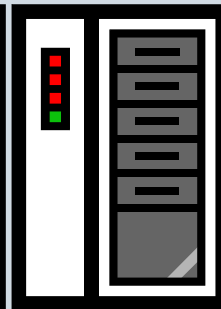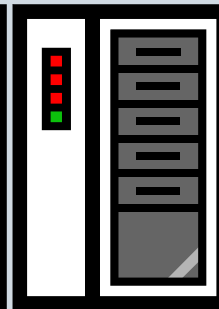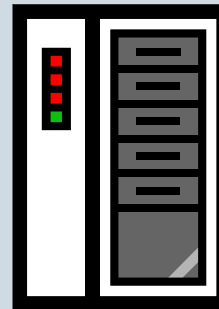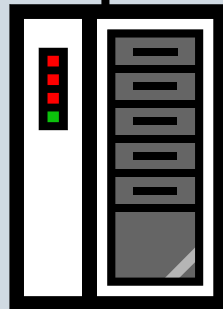
Reverse Proxy WASD
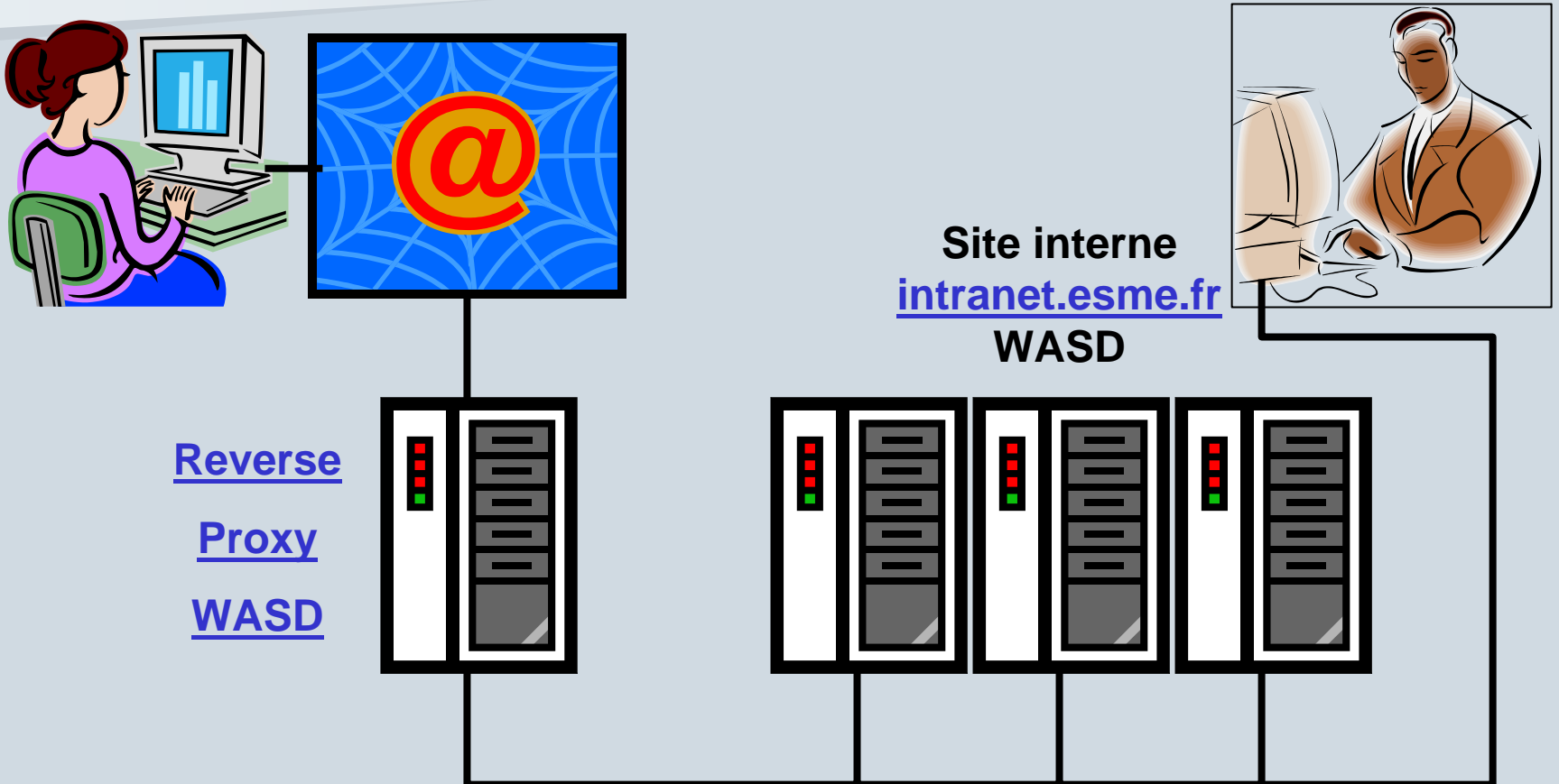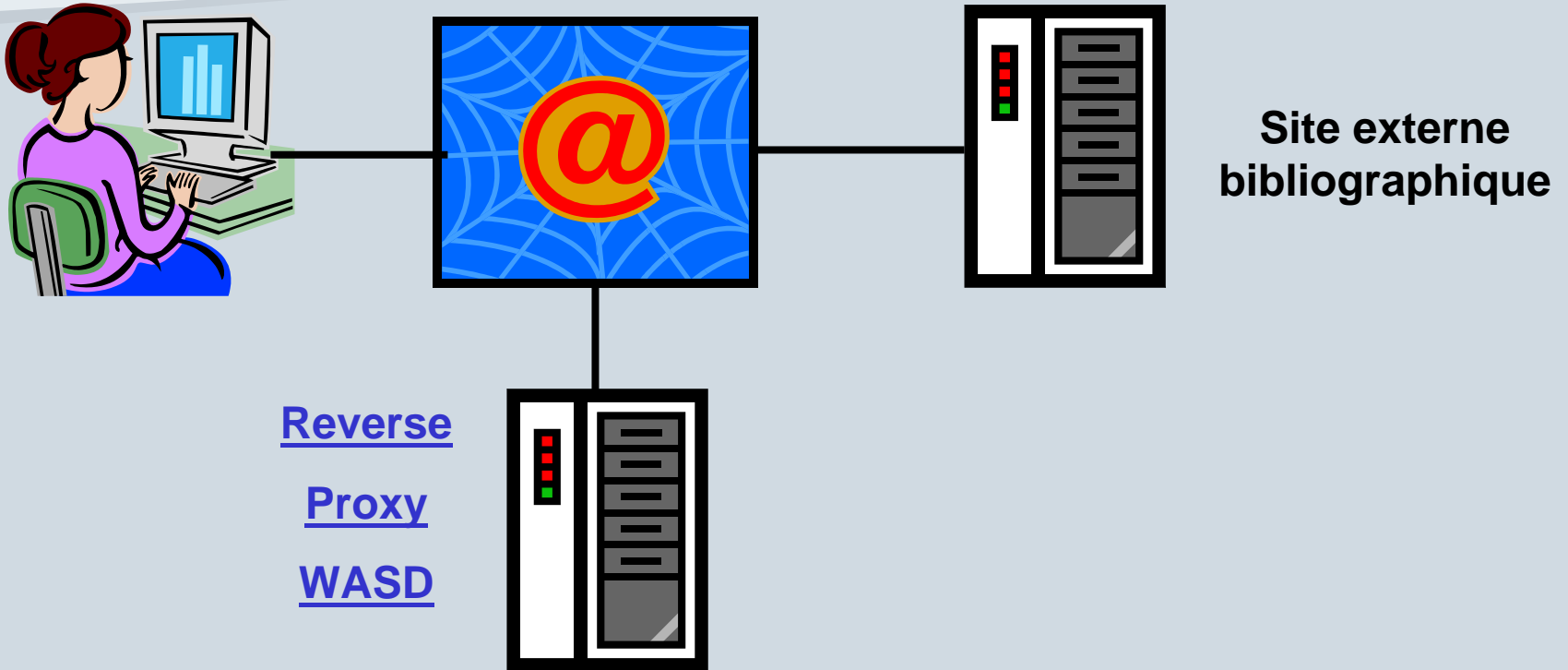
Case Study - Education

ESME-Sudria – France

"WASD has enabled us to webify more and more applications and develop brand new ones with excellent performances. CGI+ has provided us with applications that responds in a tenth of a second ... A lot of features are in use at ESME-Sudria: web servers, proxy, reverse proxy, DNS wildcards proxy... Even some IIS server are protected by authorization through a WASD reverse proxy, giving to VMS the ability to allow single sign-on to different platforms."

site: http://www.esme.fr/

Case Study - Finance

Coast Capital Savings - Canada

Coast Capital Savings is a credit union servicing 300,000 customers in the Lower Mainland and southern Vancouver Island regions of British Columbia, Canada. Coast Capital Savings banking system runs on OpenVMS AlphaServers and is written in Greystone Technology M (M).

WASD is principally used as an application server (middleware) for integrating traditional 'green-screen' financial database application with Windows-based (.NET) applications.

The XML-SOAP-RPC mechanism implemented for this serves approximately 1500 interactive workstations, as well as a busy customer-facing IVR system.

Case Study - Finance

Coast Capital Savings - Canada

- Ease of integration
    - CGI or CGIplus programming in DCL, Python, MUMPS, C, etc.
- VMS security mechanisms
    - persona scripting and particular account contexts
- Performance
    - persistent CGIplus provides a low-latency (few milliseconds) high throughput transaction infrastructure
- Application management
    - load-balancing, throttling, script process rundown allowing 'gentle' application/server shutdown and/or system migration

Case Study - Finance

Coast Capital Savings - Canada

"WASD came bundled with a friendly gentleman in Australia who appears to be online 24x7 … also appears to read all the latest specs, to do tons of testing, and keep pushing WASD forward … makes WASD worth it's weight in platinum."

more information: http://h71000.www7.hp.com/openvms/journal/v7/wasd.html

Case Study - Telecommunications

EDS Telco Solutions Group - Australia

Developed by EDS on behalf of an Australian telecommunications carrier providing landline, cell phone and Internet services. Due to Commercial-in-Confidence considerations, the customer cannot be identified.

Service Profile data includes billing, product information, discounts, promotions, and mobile features information.

To permit existing corporate systems and middleware to exchange Service Profile information, web services technologies based on XML, SOAP 1.1, and HTTP were employed. These enable the exchange of XML encapsulated information to and from retailers, OpenVMS applications and the GSM network hardware.

Case Study - Telecommunications

EDS Telco Solutions Group - Australia

- Available for VAX platform
  - some remaining systems required consideration
- CGIplus persistent scripting
  - eliminate per-request process creation on busy systems
  - allow database context(s) to remain instantiated
- Script process termination
  - WASD issues $FORCEX before shutting-down idle scripts
  - allows exit handlers to elegantly release database context(s)
- Monitoring and troubleshooting
  - server statistics, WATCH facility, WOTSUP utility

Case Study - Telecommunications

EDS Telco Solutions Group - Australia

"Truth be known, I put my choice behind Apache initially due to the number of developers out there … then I found out that WASD was developed specifically for VMS … an OpenVMS solution. I'm glad my decision on choosing Apache was not adhered to because WASD has proved a very good choice indeed. WASD … is cluster-aware … synergic with the OpenVMS OS's philosophy and design. WASD developer(s) and community are helpful and very responsive.

Because it simply kicks-arse!"

more information: http://h71000.www7.hp.com/openvms/journal/v7/wasd.html

info-WASD Poll

These are lists distilled from respondent comments to the mailing list poll where some particular WASD attribute was of particular significance in the package preference.

Poll - Differentiators

VMS Integration

– AST event driven model

– OPCOM

– SYSUAF

– ACME

– DLM

– Mailboxes

– Cluster 'awareness'

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop https://www.kednos.com/httpd/~/admin/ Search Print

Home Bookmarks Release Notes Plug-ins Extensions Support Mozilla Community

HTTPd freja.kednos.com:80

Server Administration

Configuration			
	Report	Revise	Action
Server	[Statistics] [Log]	[Site-Log] [Edit]	[Zero]
Configuration	[Server] [File]	[Server] [File] [Edit]	
Services	[Server] [File]	[Server] [File] [Edit]	
Messages	[Server] [File]	[Server] [File] [Edit]	
Path Mapping	[Server] [File]	[Edit]	[Reload]
Path Authorization	[Server] [File]	[Edit]	[Reload]
User Authentication	[Server]	[HTA] [HTL]	[Purge]
Secure Sockets	[Service] [CA]	[Edit-CA]	[Reload-CA]
Other Reports	[Cache] [DCL] [DECnet] [Host] [Lock] [Match] [Memory] [Process] [Proxy] [Request] [System] [Throttle] [WATCH] [1, 2, 4, 8, 16, 24, 72, 168, 336, 504, 672 hours activity]		

Control

[RESTART] Log [On] [Off] [Flush]
[RESTARTNOW] Cache [On] [Off] [Purge]
[RESTARTQuiet] Proxy [Adjust] [Zero]
[EXIT] Instance [max, CPU, 1, 2,
[EXITNOW] 3, 4, 5, 6, 7, 8]

/DO=

Node ⦿   Cluster ○

FREJA::HTTPd:80   HAFNER::HTTPd:80
                   FREJA::HTTPd:80
                   ODIN::HTTPd:80
                   NORNS::HTTPd:80

Wednesday, 10-MAY-2006 07:34:14
Wed, 10 May 2006 14:34:14 GMT (-07:00)

Times	FREJA::	21 20:47:45.17
	Process:	21 20:42:59.25
	Image:	1 22:37:12.14
	CPU:	0 00:01:17.92
Requests	Read:	11,604
	Write:	8
Bytes	Rx:	3,805,985
	Tx:	196,202,775

Done

Poll - Differentiators

Performance
- AST event driven
- Single process model
- Conservative resource consumption
- Scripting

Poll - Differentiators

Monitoring and Administration
- WATCH
- Server configuration (loaded)
- WATCH
- Server statistics
- WATCH
- $HTTPD/DO=<something>[/CLUSTER]
- WATCH

Poll - Differentiators

WATCH ...

provides an online, real-time, in-browser-window view of request processing in the running server. The ability to observe live request processing on an ad hoc basis, without changing server configuration or shutting-down/restarting the server process, makes this facility a great configuration, problem resolution and application development tool.

Back   Forward   Reload   Stop   https://wasd.vsm.com.au/httpd/~/admin/report/WATCH   Search   Print   hp

Home   Bookmarks   Release Notes   Plug-ins   Extensions   Support   Mozilla Community

HTTPd slim.vsm.com.au:80

WATCH Report

Saturday, 29-APR-2006 07:09:27

Select WATCH Criteria

Request
- ☑ Processing
- ☑ Header
- ☐ Body

Response
- ☑ Processing
- ☐ Header
- ☐ Body

General
- ☑ Connection
- ☐ Mapping
- ☐ Authorization
- ☑ Error
- ☐ CGI
- ☐ DCL
- ☐ DECnet

Network
- ☐ Activity
- ☐ Data

Other
- ☐ Match
- ☐ Logging
- ☐ SSL
- ☐ Timer

Proxy
- ☐ Processing
- ☐ Request Header
- ☐ Request Body
- ☐ Response Header
- ☐ Response Body
- ☐ *Cache*
- ☐ *Cache Maintenance*

*	Client Filter
*	Service Filter
*	Path/Track Filter

[60 ▼] or [   ] Seconds Duration

☐ Include (☐ only) in Server Process Log

[WATCH]   [reset]

Done

Back   Forward   Reload   Stop   https://wasd.vsm.com.au/httpd/-/admin/report/WATCH?rq   Search   Print   hp

Home   Bookmarks   Release Notes   Plug-ins   Extensions   Support   Mozilla Community

```
29-APR-2006 07:23:36  WATCH REPORT  slim.vsm.com.au:80
-------------------------------------------------------
HTTPd-WASD/9.1.4 OpenVMS/AXP SSL (24-APR-2006 07:27:57.11)
Multinet UCX$IPC_SHR V44A-X1 (09-JUN-2004 12:55:27.47)
OpenSSL 0.9.8 05 Jul 2005 (7-JUL-2005 22:07:00.66)
$ CC (V7.3/60490008) /DECC /STAND=RELAXED_ANSI /PREFIX=ALL /OPTIMIZE /NODEBUG /WARNING=(NOINFORM,DISABLE=(PREOPTW))/FLOAT=D_FLOAT /
COMPAQ AlphaServer DS10L 466 MH with 1 CPU and 512MB running VMS V7.3 (ODS-5 enabled, VMS NAML, VMS FIB, ZLIB 1.2.2, lksb$b_valblk|
$ HTTPD /PRIORITY=4 /SYSUAF=(SSL,RELAXED)/PERSONA/SCRIPT=AS=HTTP$NOBODY
AST:1992/2000 BIO:1995/2000 BYT:165280/499424 DIO:1000/1000 ENQ:319/500 FIL:257/300 PGFL:384912/500000 PRC:0/100 TQ:97/100
DCL Scripting: detached, /script=as=HTTP$NOBODY, PERSONA enabled
Process: HTTPd:80 OTHER HT_ROOT:[STARTUP]STARTUP_SERVER.COM;1 HT_ROOT:[LOG_SERVER]SLIM_20050813154432.LOG;1
Instances: SLIDER::HTTPd:80, SLIM::HTTPd:80
Watching: connect, request, req-header, response, error (539)
Client: "*" Service: "*" Path: "*"
|Time_____|Module__|Line|Item|Category__|Event...|
|07:23:55.52 NET    1504 0001 CONNECT    MULTIHOME match for 150.101.13.15,443 arrived at 150.101.13.15,443|
|07:23:55.52 NET    1509 0001 CONNECT    ACCEPTED 203.122.208.7,62079 on https://150.101.13.15,443 BG1983:|
|07:23:55.55 REQUEST 2203 0001 REQ-HEADER HEADER 530 bytes|
GET /cgi-bin/soymail/~?10 HTTP/1.1
Host: on.level7.net.au
User-Agent: Mozilla/5.0 (X11; U; OpenVMS Digital_Personal_WorkStation_; en-US; rv:1.7.11) Gecko/20050824
Accept: text/xml,application/xml,application/xhtml+xml,text/html;q=0.9,text/plain;q=0.8,image/png,*/*;q=0.5
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Referer: https://on.level7.net.au/cgi-bin/soymail/~
Authorization: ████ ████████████████

|07:23:55.55 REQUEST 3631 0001 REQ-HEADER 10 fields, 0 unknown|
|07:23:55.55 SERVICE 1553 0001 CONNECT    VIRTUAL on.level7.net.au:443|
|07:23:55.55 REQUEST 3702 0001 REQUEST    GET /cgi-bin/soymail/~?10|
|07:23:55.55 DCL    1296 0001 RESPONSE   SCRIPT as HTTP$NOBODY CGI /cgi-bin/soymail CGI-BIN:[000000]SOYMAIL ()|
|07:23:55.64 GZIP    0960 0001 RESPONSE   DEFLATE no, script requested response NOT to be GZIPed|
|07:23:55.65 REQUEST 0767 0001 REQUEST    STATUS 200 rx:744 tx:553 bytes 0.125988 seconds|
|07:23:55.65 REQUEST 0992 0001 CONNECT    PERSISTENT 1 203.122.208.7,62079|
```

Transferring data from wasd.vsm.com.au...

Poll - Differentiators

Scripting
- Performance
- IPC based on mailboxes
- CLI activation and DCL symbols
- CGIplus / RTE
- Persona
- CGI response header directives
- OSU emulation

Poll - Differentiators

Proxy
- – Standard proxy
- – Reverse proxy
- – Tunneling
- – Disk cache model and implementation

Poll - Testimonials

"I have stayed with WASD because I like the product ... Apache would have to be very much better than WASD ... and I don't see that happening, ever."

"WASD just ran from the FREEWARE CD copy ... Besides it was also a fast server which hardly needs significant attention. It is well designed (IMHO) and sports a huge number of interfaces ..."

"Back in the beginning of the century [☺] we were faced to the necessity of making a lot applications available through the web. Most were based on the VMS security model. The ability to to run scripts under the user's persona ..."

"WASD has been performing very well in our demanding conditions. It is even resilient enough to keep serving pages even when there was a hideous bug [☹] that killed some server processes, thus keeping us up. We couldn't be happier with the software and with the excellent mood of its author."

Poll - Testimonials

"Although I have not used HP support for Apache, I have found that HP support for other HP-ported products (Kerberos, SSH, COM, etc.) to be a little difficult to obtain ('Uh, do we support that product?') ... rather than 'Here is how you do it, sorry my docs weren't clear' or 'I will build that into the next release'..."

"I found the experience to be easy, and the support (documentation and mailing list) to be far superior to any other of the webservers."

"WASD comes into the scene. It had the needed reverse proxy feature that made possible a connection to a Tomcat server (or to any other protected server) and had an excellent privilege separation model. We ported our configuration and, in record time, we had a test system running, that let us move quickly into production."

Poll - Testimonials

"[VAX 6000 running VMS 6.0] … we have been the 'low-end hardware/software' beta test site … not that you would notice. WASD's betas are arguably more stable than other people's production releases."

"… there is the best in class support that comes from the southern hemisphere. The kind of support you dream of … you find a problem, send a mail, go to bed and, when you wake up in the morning, there is a cute [☺] answer!"

"Can't improve on all the responses, but in terse terms … VMS integration, security, performance, extensibility, reliability, support. Use Apache? … Haven't used it under VMS, but have under Tru64 and it is cumbersome by comparison."

Rumination

WASD: why is it chosen when there's OpenVMS Apache?

Rumination

WASD does everything Apache does

WASD `CGI` + `CGI`plus/RTE persistence

WASD performance

WASD conservative resource usage

WASD/OpenVMS integration

WASD tools – e.g. WATCH

WASD reliability

WASD support

Rumination

WASD: why … ?

"Because it simply kicks-arse!"

Rumination

WASD: why … ?

"Because it simply kicks-ass!"

Demonstration?

Find me during the Bootcamp.
    +61 407 883422

We'll sit down at an Internet kiosk and spend some time at WASD sites large and small.

Want to know more about WATCH? Ditto!

Where to get it?
    http://wasd.vsm.com.au/wasd/

Questions?