

An e-business Roadmap for VM/ESA Customers



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Agenda



- e-business Overview
- Tools Available on VM
- Examples of VM sites doing e-business
 - VM home page
 - EMEA publications
- Linux and the possibilities
- Summary



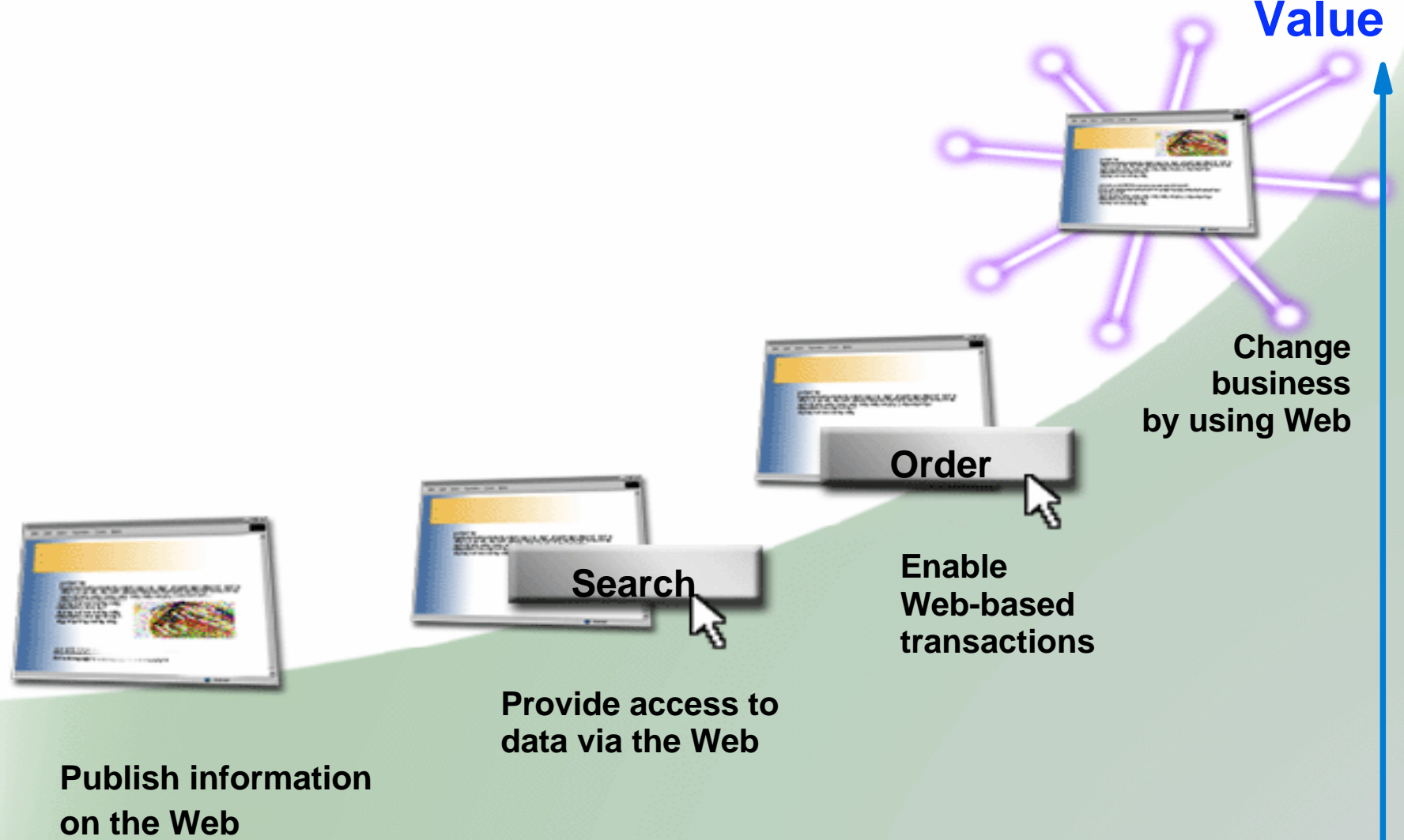
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The Road to e-business



e-business

Value

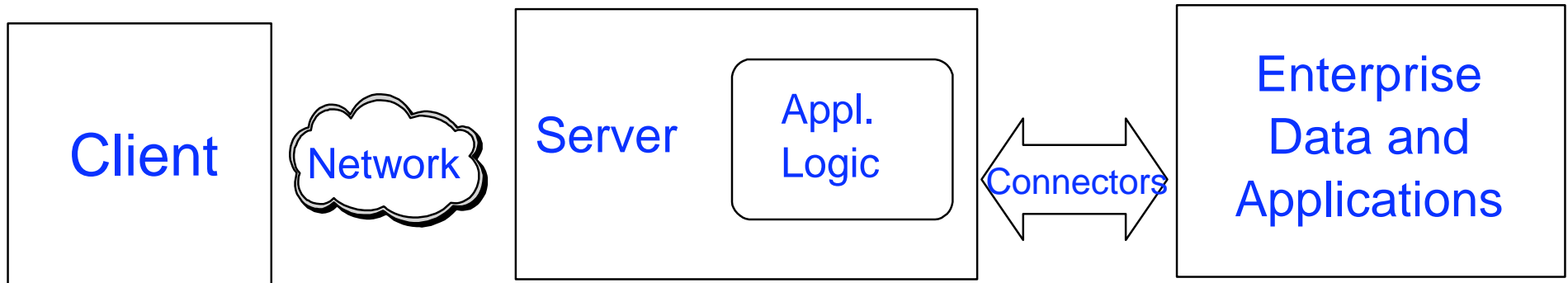


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Building Blocks



Security



System Management



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Ask yourselfWHY?



- ✓ Information sharing
- ✓ Reduce cost of doing business
- ✓ Expand base of customers
- ✓ 24 x 7 operation
- ✓ Enhance customer relationship
- ✓ More competitive



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Ask yourself HOW?



✓ Setup

- planning
- register URL
- TCP/IP
- Web server

✓ Near term

- planning
- HTML pages
- CGI scripts

✓ Long term

- planning
- change business applications
- new business applications



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Steps to Internet Success



1. Look at what's out there
2. Define clear objectives
3. Create or upgrade your Web site
4. Measure your results
5. Market your Internet presence



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Look At What's Out There



Do some research online and determine what would work for your business.



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Define Clear Objectives



What are your objectives and in what order do you want to achieve them?



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Create or Upgrade Your Web Site



- ✓ Image you wish to portray
- ✓ Easy to navigate
- ✓ Don't assume everyone has "fast" connections
- ✓ Do all parts convey consistent message?
- ✓ Customer support
- ✓ **Beware:** this WILL change how you do business



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Measure Your Results



Think about what information is needed to determine if your web site is successful. How many unique visitors; what path did they follow; are you getting return customers?

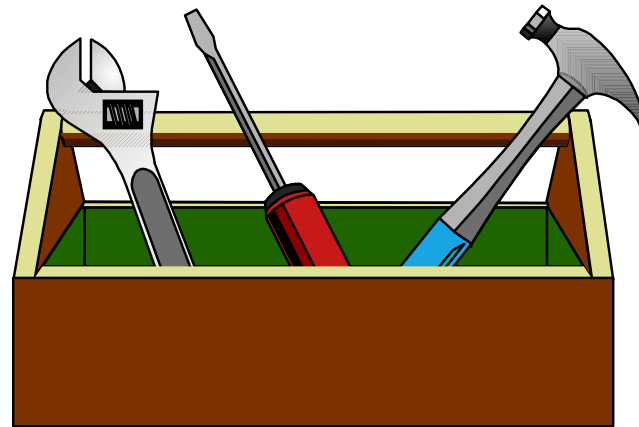


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Technology versus Tools



Don't let technology drive your decisions.
Rather, choose the tools you need in order
to be successful.



e-business Tools Available on VM/ESA



TCP/IP



Web
Server



Data and
Applications



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TCP/IP



- ✓ Improved messaging
 - service extension support for Message Size Declaration
 - 8-bit MIME message transfers.
- ✓ Increased reliability and availability
 - Virtual IP Addressing
 - TCP/IP server automatically adjusts storage pool sizes
- ✓ Robust dynamic routing with routeD support
- ✓ Expanded network connectivity
- ✓ Native ATM Support enables VM TCP/IP to use an Open Systems Adapter (OSA) configured to support native Asynchronous Transfer Mode (ATM)



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Web Server



- ✓ VM:Webgateway
from Sterling Software, Inc.
- ✓ Shadow VM Web Server
from NEON Systems, Inc.
- ✓ Web390
from Information Builders, Inc.
- ✓ ESAWEB
from Velocity Software, Inc.
- ✓ RP/Web
from Aonix



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Data and Applications



- ✓ Resources you already have
 - data
 - programs
- ✓ New applications available
- ✓ Robust development environment

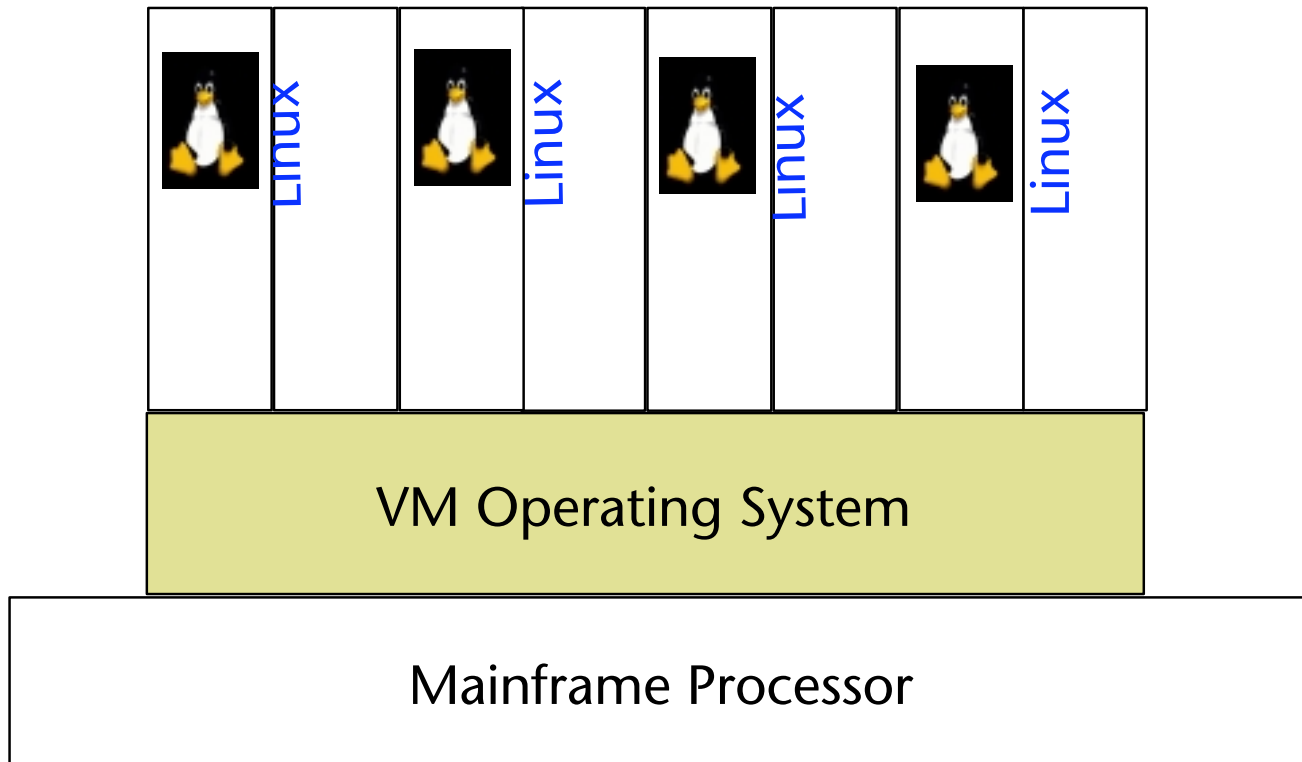


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New to VM



Guest Machines



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You can do e-commerce on VM



- ✓ SSL
 - VM:Webgateway
 - Shadow VM Web Server
 - Web390
- ✓ SET
 - not available
- ✓ Examples of e-commerce on VM
 - Ducks Unlimited at <http://www.ducks.ca/>
 - IBM web site for Business Partners in Europe



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VM Home Page



IBM's VM/ESA Operating System Home Page - Netscape

File Edit View Go Communicator Help

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S/390 Worldwide

VM/ESA[®] Operating System

VM/ESA is a high-performance, interactive operating system for IBM S/390 servers. VM/ESA supports today's computing environments by providing a natural infrastructure for network computing, letting you participate in multi-system environments. [[More](#)]

▶ [VM News and Site Updates/Changes](#) 30 March 2000
([Subscribe to be notified of VM site changes](#))

VM spotlight

Generally available!
[-VM/ESA Version 2 Release 4](#)
[-Tivoli Storage Manager \(ADSM\)](#)
[- "First in a Location" Promotion](#) **NEW**

S/390 and Linux:
[-Statement of interoperability](#)
[-VM and Linux Resources](#)
[-Linux on S/390 Redbook residency](#)

New papers about VM:
[- VM and VSE Vitality](#), by [ACTS Corp](#)

Featured information

VM/ESA V2 R4.0 & Related Products:
[-VM Printing Resources](#)
[-Performance Report](#)
[-Online product publications](#)
[-Data areas and Control Blocks](#)
[-2000 VM & VSE Tech Conferences](#)

Teleconference on March 15:
[-Enterprise Storage Management with Tivoli Storage Manager](#)
[- View the charts](#)
[- Vision-TSM Solutions for the](#)

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VM Site Overview



- ✓ 210 SFS directories, 12,200 files, 1.0 GB
- ✓ 8,000 http transactions per day, 5,000 visits per day
- ✓ A little CGI, most static files
 - HTML
 - PDFs of lots of our manuals
 - Presentations and other documents

Security Concerns - Fencing



- ▶ No everyday users
- ▶ All minidisk passwords removed
- ▶ No TELNET or FTP on external stack
- ▶ CGIs audited daily for changes
- ▶ All HTTP daemons class G
- ▶ External stack - **PERMITTEDUSERONLY**
- ▶ PVM - external daemons excluded
- ▶ Internal stack - external daemons excluded
- ▶ One-way ISFC (patent filed)



Automation



- ▶ OTTO - programmable operator
- ▶ SUBMIT - catcher for download library
- ▶ SFSWATCH - watches for down filepool
- ▶ VMHOMEB - does SFS backups
- ▶ INDEXER - rebuilds site keyword index
- ▶ CHANGES - builds /changes.html
- ▶ EWSTAT - EnterpriseWeb/VM status watcher



OTTO - Our Man in Bldg. 256



OTTO's daily checklist:

- ▶ Clean out the spool
- ▶ Maintain HTTP logs (reverse DNS daily, VMARC monthly)
- ▶ Find changed CGIs and report them
- ▶ Update download library popularity contests
- ▶ Do SFS control data backup
- ▶ Remind Brian to eat lunch
- ▶ Rebuild HTML boilerplate (once daily)
- ▶ Rebuild site keyword index (Sunday only)
- ▶ Autolog the SFS backup machine (VMHOMEB)
- ▶ Send Bill Bitner the day's monitor data



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OTTO - He's Right on Time



Every so often, he makes sure:

- ▶ ISFC link is up, and...
- ▶ Crucial servers (RSCS, e.g.) are up, and...
- ▶ Page and spool have enough room, and...
- ▶ SFS control data backup minidisk is OK



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OTTO - He Takes Orders, Too



Via **TELL**, OTTO will:

- ▶ Add a directory to the site
- ▶ Change SFS authorizations
- ▶ Cycle a site's daemons
- ▶ Cycle a TCP stack
- ▶ Issue CP commands for me



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SUBMIT - The Download King



- ▶ Internal submissions - unpack and post
- ▶ External submissions - unpack, queue, tap
Brian
- ▶ Post command - dequeue and post

An IBM attorney looks at each external submission before it is posted.



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VMHOMEB - SFS Backup Machine



- ▶ Autologged each night
- ▶ Crams entire filepool into a file on GDLVM7
- ▶ Sends Brian a notice if backup fails



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EWSTAT - Watches Daemons



- ▶ EWeb drives exits, sends CP MSGs (lots) to EWSTAT
- ▶ EWSTAT digests messages, tracks status, displays on console
- ▶ Forces hung CGIs (5 minutes)
- ▶ Forces hung transactions (2 hours)



Monitoring



- ▶ An NT system on same ring
- ▶ Runs a Rexx program to check site once per minute (HEAD /index.html)
- ▶ Calls Brian's pager if site doesn't respond
- ▶ "Phone number" says what's wrong
- ▶ It hardly ever calls



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More Monitoring



- ▶ Disconnected machine on GDLVM7
- ▶ Runs a Rexx program to monitor:
- ▶ ISFC link status
- ▶ RSCS link status
- ▶ Calls Brian's pager if links are down
- ▶ "Phone number" says what's wrong
- ▶ It called once (thunderstorm).



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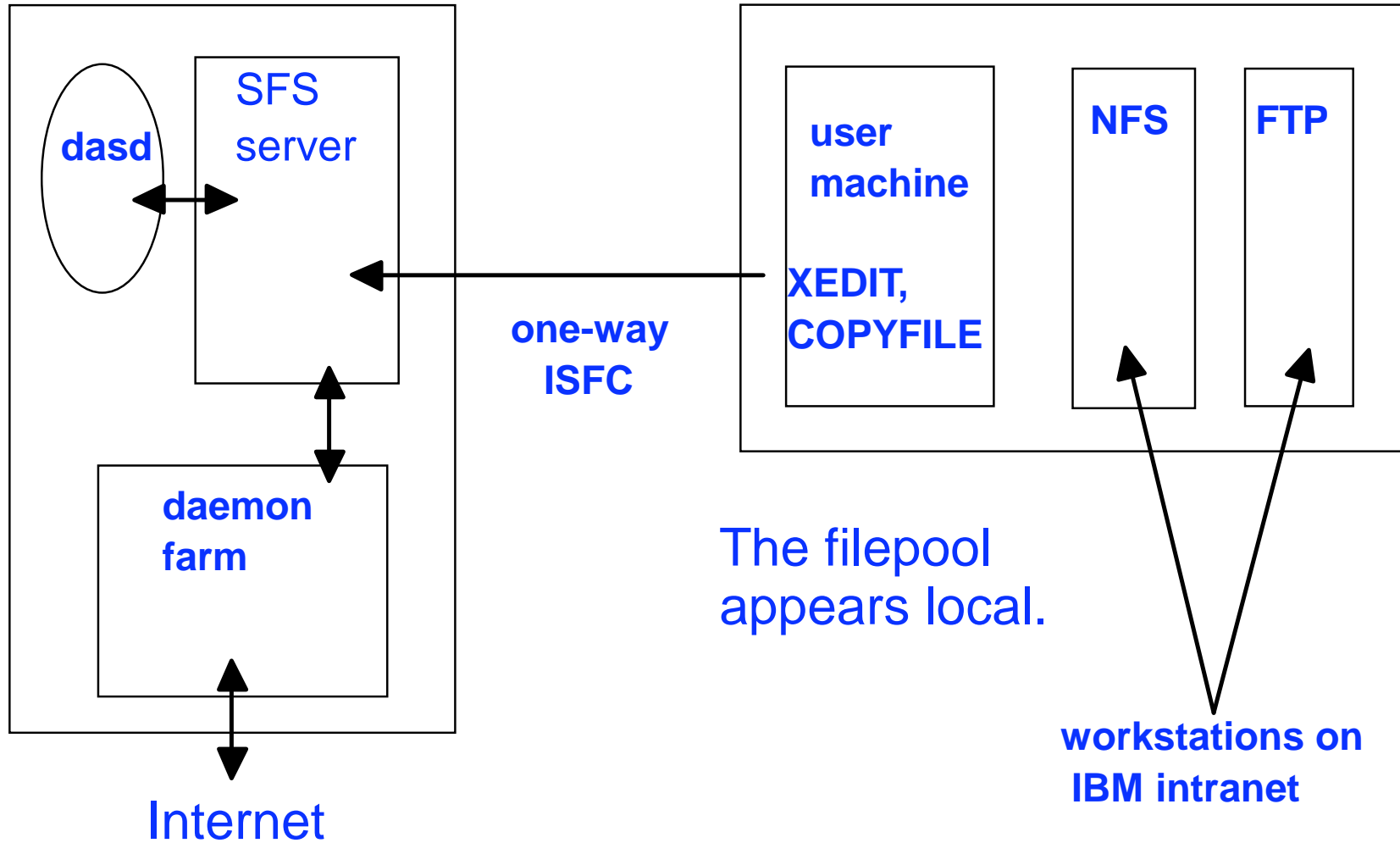
Content Maintenance



e-business

GDLVMWEB

GDLVM7



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Reliability



This thing is cast-iron reliable.

- ✓ It runs error-free for weeks on end.
- ✓ We have had a few outages:
 - ✓ SFS control data backup - my fault
 - ✓ Two power failures - squirrels' fault (they paid)
 - ✓ Weird TCP/IP failure - I lost some hair
- ✓ Service processor died



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Other Lessons



Programming:

- ✓ Keep CGI code snippets handy.
- ✓ CMS Pipelines is indispensable.
- ✓ Remember to take out **trace ?r**.

Users:

- ✓ Most are cooperative and benign.
- ✓ Everybody needs guidance on copyright.
- ✓ Security has not been an issue.



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EMEA Web Site



IBM Publication Ordering System (POS) - Netscape

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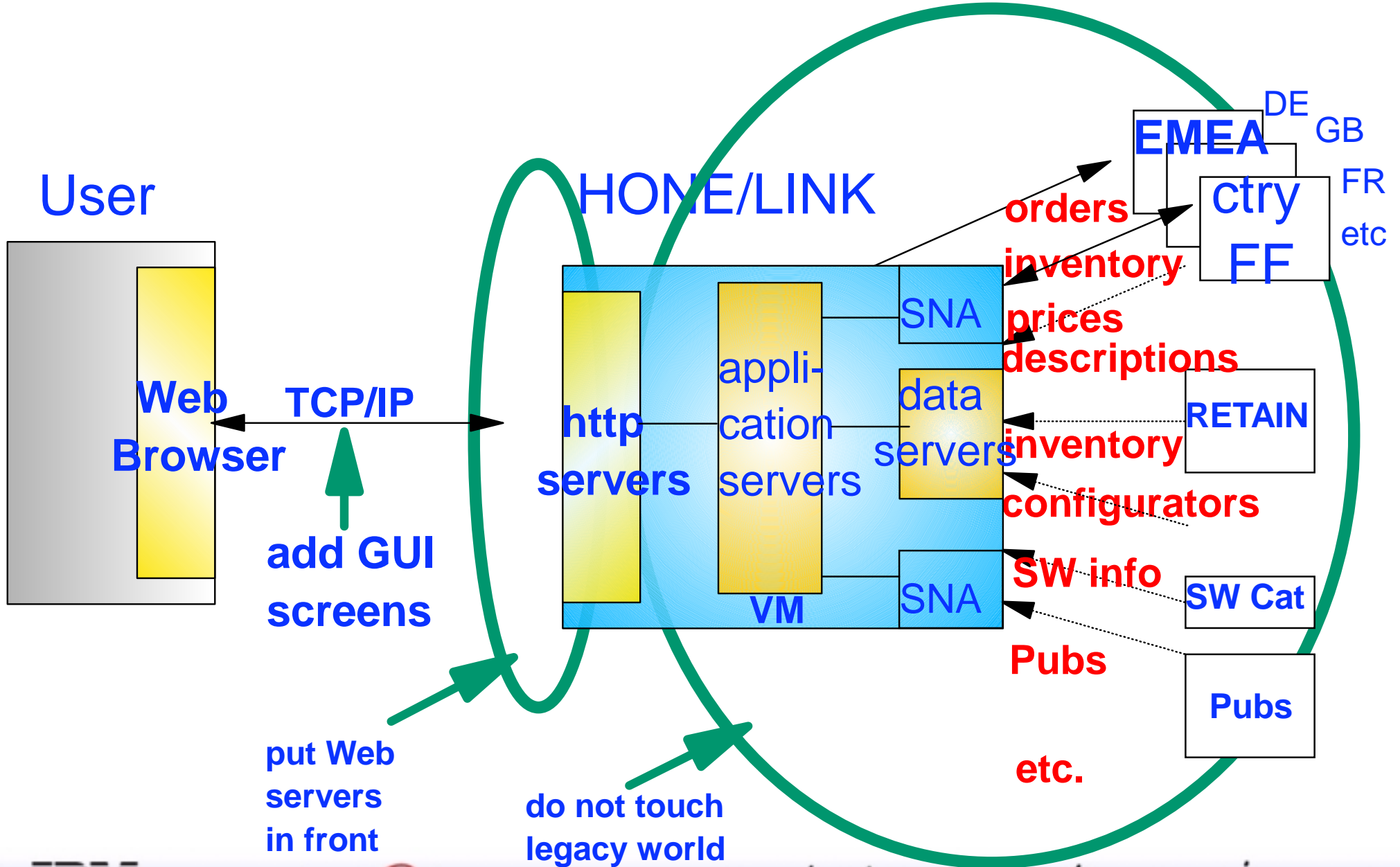
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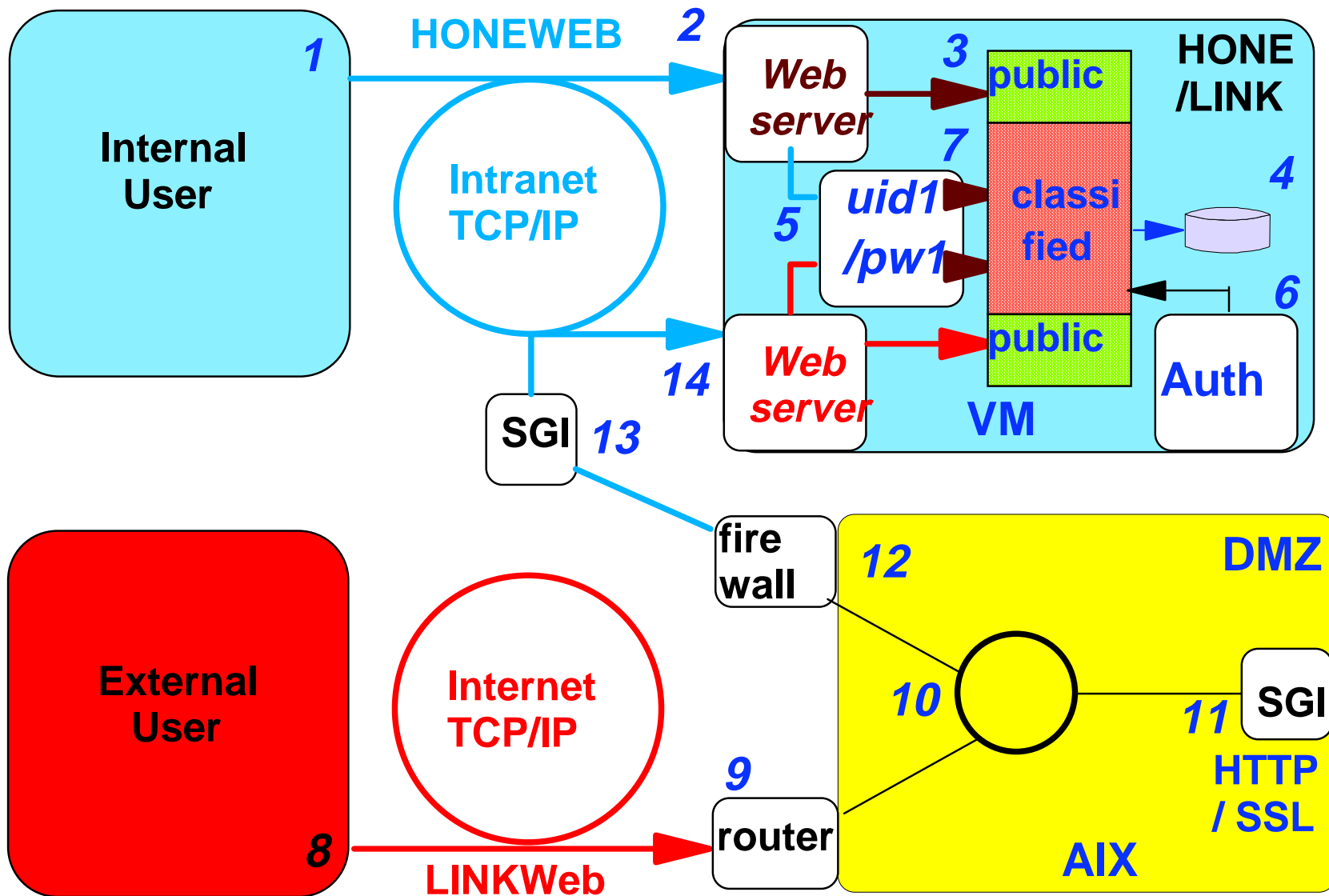


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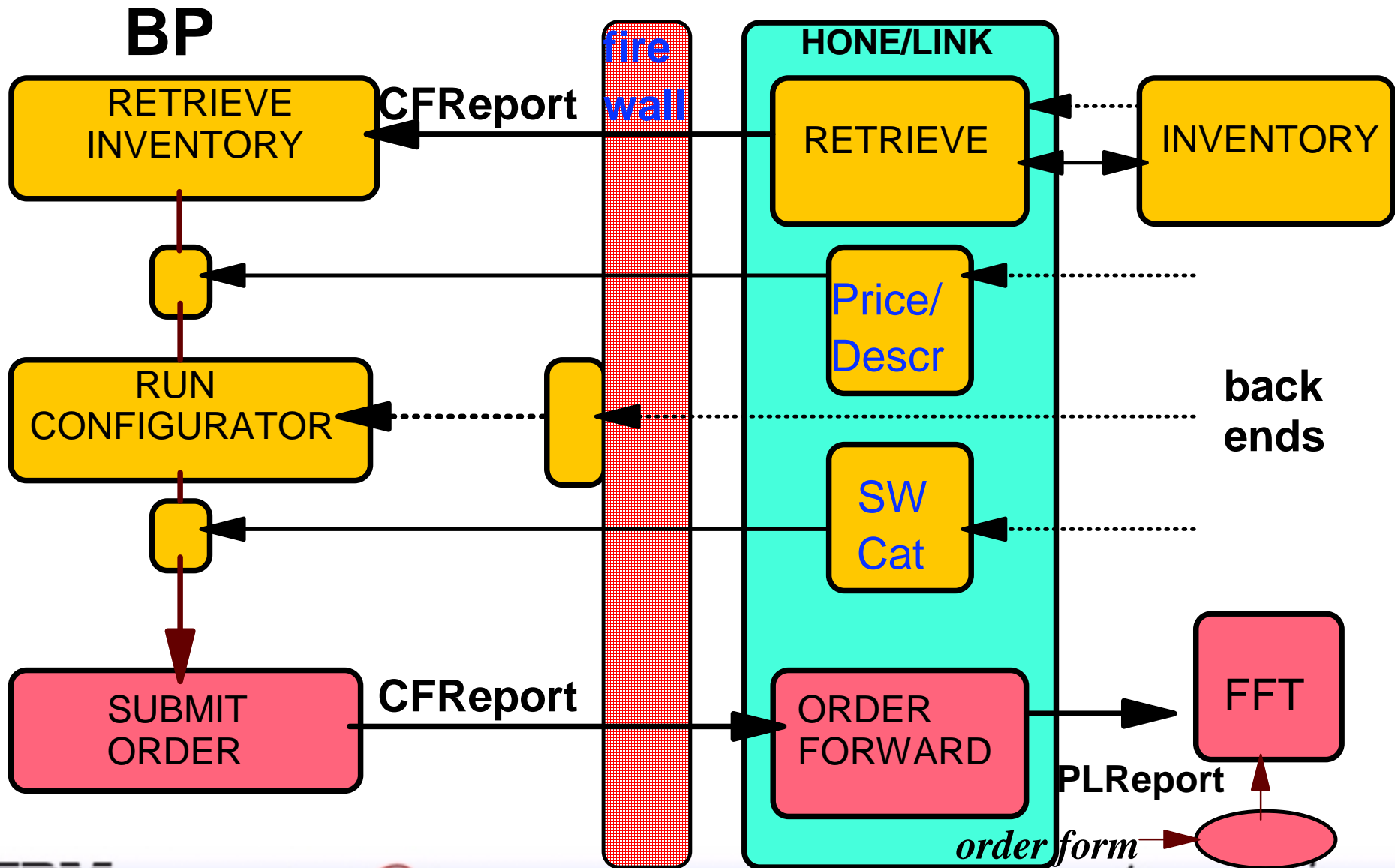
HONE/LINK - Web



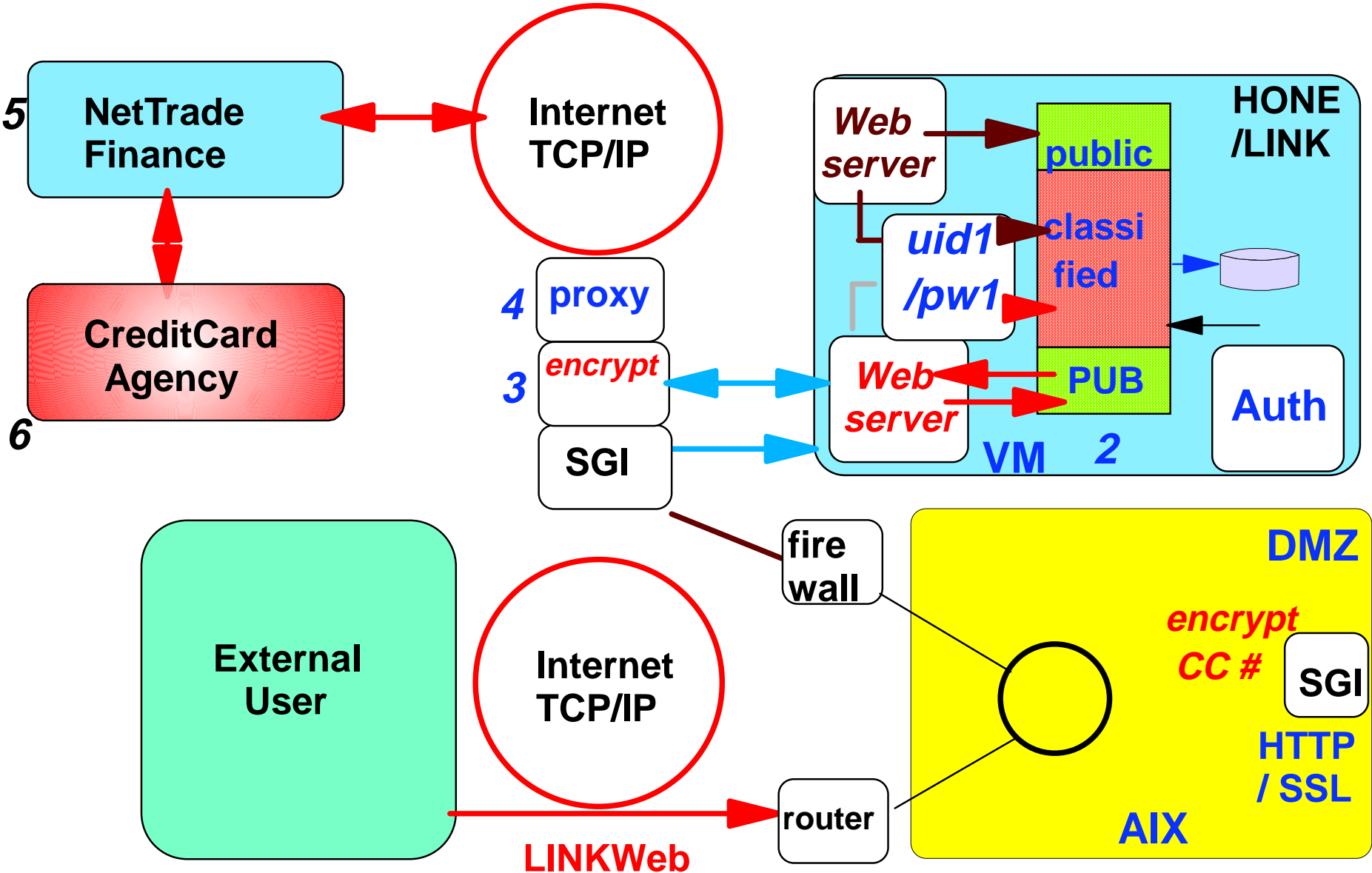
HONE/LINK - Web - detail



LINKWeb Order support

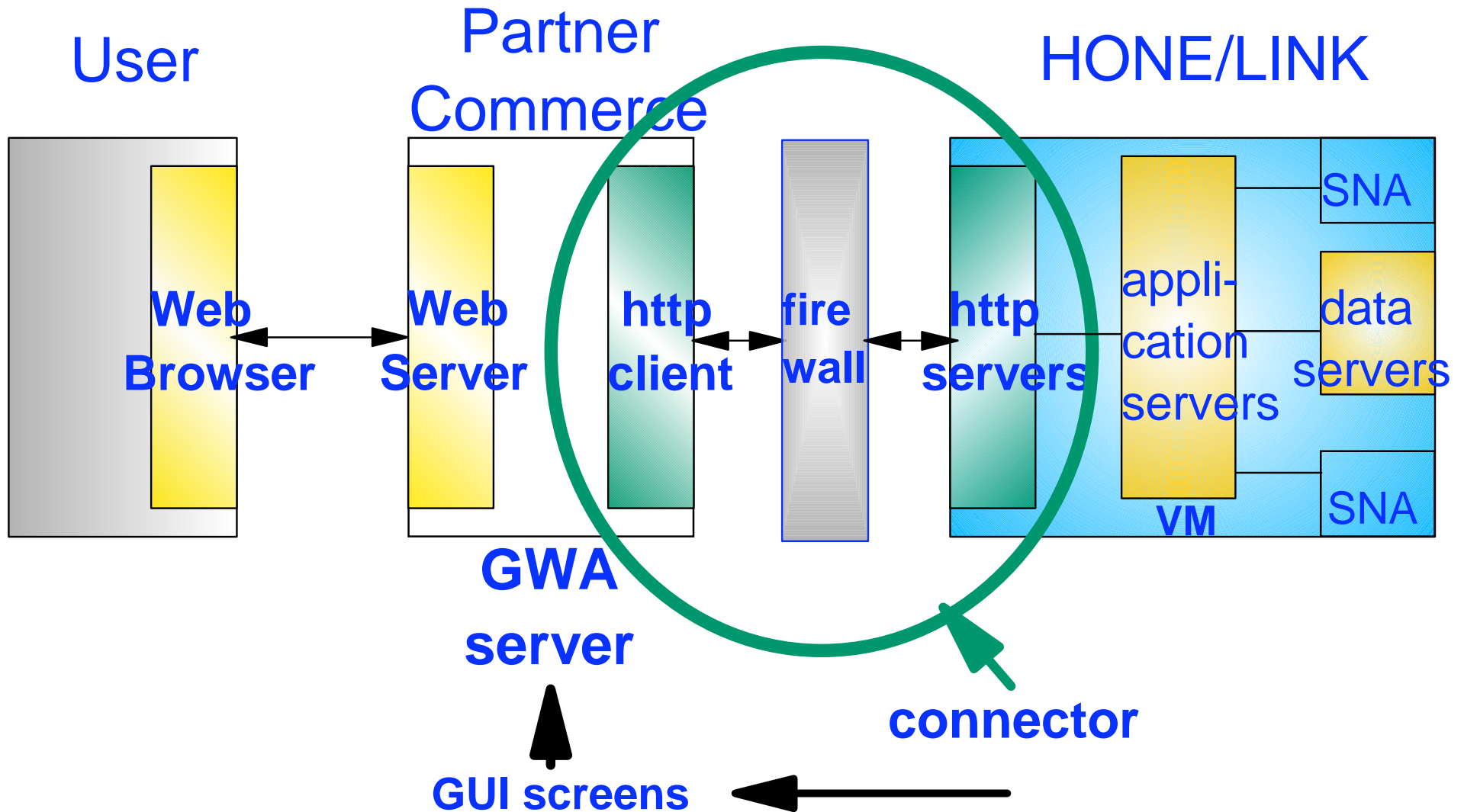


LINKWeb Publications ordering

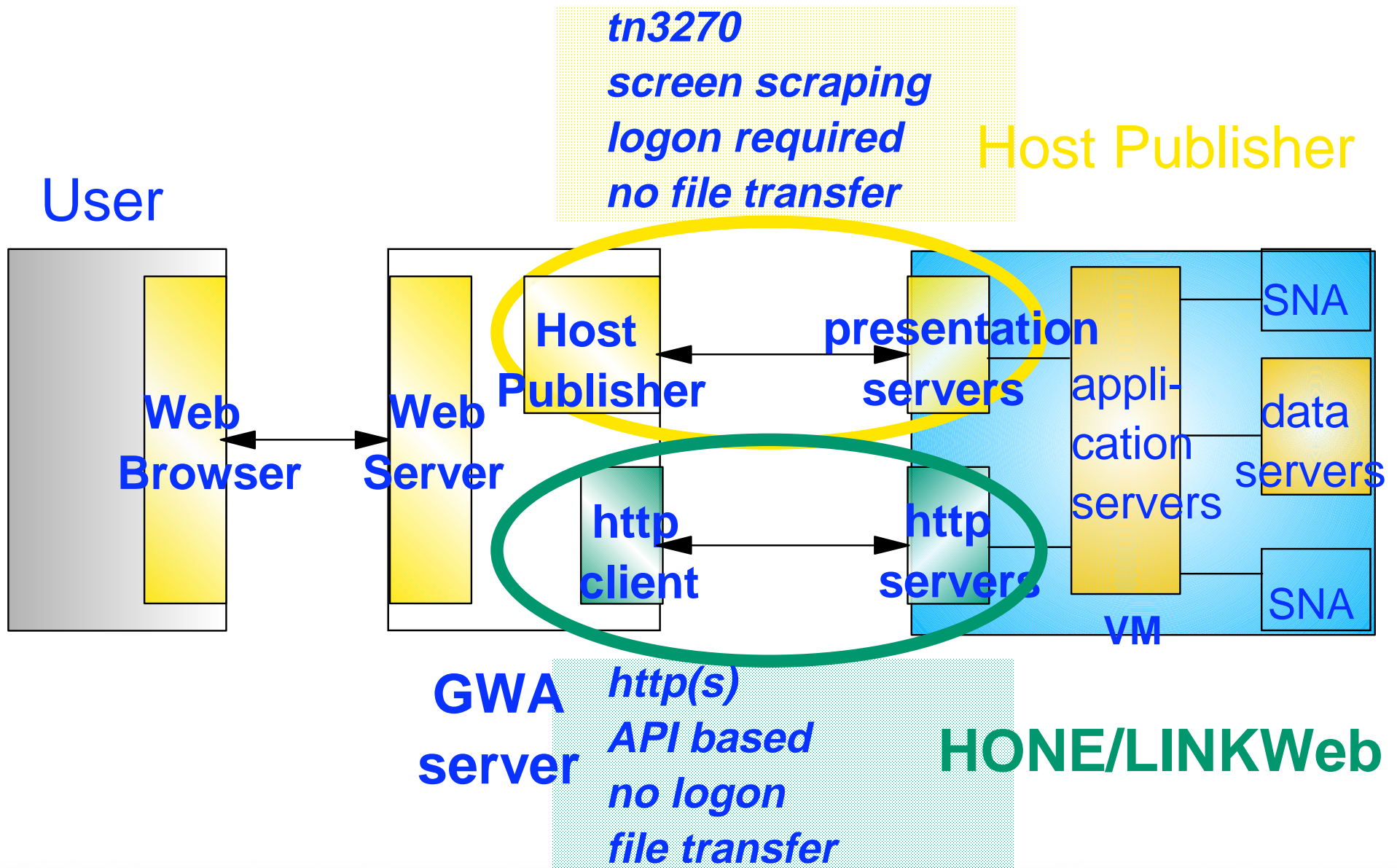


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PartnerCommerce and LINKWeb



HONE/LINKWeb and Host Publisher



HONE/LINKWeb - Lines of Code

application	legacy LOC	Web i/f LOC	%
Order Submission	80000	3400	4
Inventory Retrieval	67000	2000	3

And The Possibilities.....



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Recommended Reading - I

Marketing on the Internet

- by Jan Zimmerman published by Maximum Press

Redbooks

- Web-Enabling VM Resources (SG24-5347)
- Web Server Solutions for VM/ESA (SG24-4874)
- Linux on S/390 (coming soon)

Customer references

- <http://www.ibm.com/software/casestudies>

Linux

- <http://penguinvm.princeton.edu/>
- <http://linux.s390.org/>

Listserv

- SUBSCRIBE to LINUX-VM (LISTSERV@VM.MARIST.EDU)

Recommended Reading - II



Linux

- IBM developer works - Linux for S/390
<http://oss.software.ibm.com/developerworks/opensource/linux390/index.html>
- Linux at IBM
<http://www-4.ibm.com/software/is/mp/linux/>
- Linux/390 at Princeton University
<http://penguinvm.princeton.edu/>
- Thinking Objects
<http://linux.s390.org/>

Listserv

- SUBSCRIBE LINUX-VM (LISTSERV@VM.MARIST.EDU)
visit: <http://vm.marist.edu/linuxvm>



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Linux On S/390 Project - Netscape

File Edit View Go Communicator Help

Bookmarks Location: <http://vm.marist.edu/linuxvm/> What's Related

Linux On S/390

Linux
for S/390
(Virtual Penguin Power)

[Linux/390 in the Press](#)

[Frequently Asked Questions about Linux on S/390](#)

[Linux on ESA/390 architecture page by Linas Vepstas](#) - Lead developer of the non-IBM port

[IBM's release of Linux for S/390](#)

[Linux-VM discussion list](#)

[Linux for System/390 \(running at Marist\)](#)

[Old VM proposal from Terrence Zellers](#)

Penguin logo borrowed from [Larry Ewing](#) who created the original using [The GIMP](#).
I used Microsoft's PhotoDraw 2000 to add the VM on his chest.

Webmaster: [Thomas Kern](#)

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Achieving Success



Transform key business processes
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Run applications in an available,
scalable, secure environment
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