



IBM Software Group

Introduction to IBM Caching Proxy

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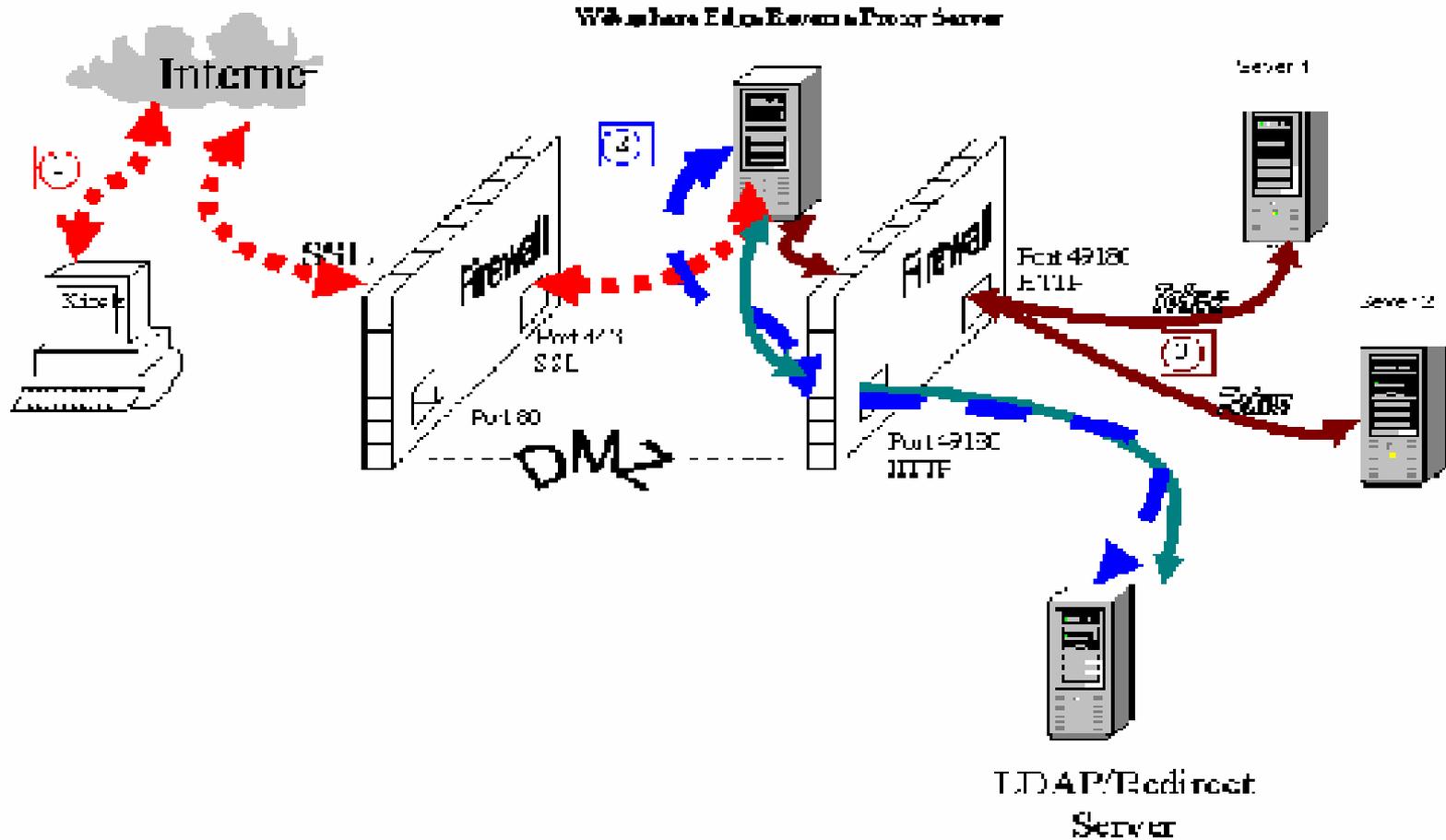


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Agenda

- Edge of Network Overview
- Caching Proxy Overview
- Caching Proxy Basics
- Caching Proxy Configurations
- Problem Determination
- Demos

Reverse Proxy



Caching Proxy Overview

- Version History
 - ▶ Web Traffic Express (WTE) 3.0,
 - ▶ Web Traffic Express (WTE) 3.6, Edge Sever 1.0.x
 - ▶ Caching Proxy (CP) 4.0, Edge Server 2.0,
 - ▶ Caching Proxy (CP) 5.0, Edge Comp., WAS 5.0
 - ▶ Caching Proxy (CP) 5.1, Edge Comp., WAS 5.1
 - ▶ Caching Proxy (CP) 6.0, Edge Comp., WAS 6.0
 - ▶ Caching Proxy (CP) 6.1, Edge Comp., WAS 6.1, to be released

Caching Proxy Overview

- Key Benefits - Caching and Proxying
 - ▶ Caching
 - Reduces network congestion by Caching
 - This translates to faster responses for clients
 - Which leads to....better service to clients
 - ▶ Proxying
 - Content is offloaded from servers, increasing server scalability
 - Improve Enterprise Security in the DMZ

Caching Proxy Overview

Support Platforms for Caching Proxy 5.0, 5.1

- AIX 4.3.3, AIX 5.1
- RedHat Advanced Server 2.1
- SuSE SLES 7.0
- Solaris 7 or Solaris 2.8 (32-bit only)
- Windows 2000
- HPUX 11i (CP 5.0.1.x)
- RedHat 8.0 (CP 5.0.1.x) - Must upgrade glibc to 2.3.1.
- SuSE SLES 8.0 (CP 5.0.1.x) - Must apply SuSE Service Pack 1

Caching Proxy Overview

- Support Platforms for Caching Proxy 6.0, 6.1
 - ▶ AIX 5.1, 5.2, and AIX 5.3
 - ▶ RedHat AS 3.0,
 - ▶ SuSE Linux 8, SuSE Linux 9
 - ▶ Solaris 8, Solaris 9
 - ▶ Window 2000, Window 2003

- <http://www.ibm.com/support/docview.wss?rs=180&uid=swg27007304>

Caching Proxy Basics - Installation

- GUI install or the OS native package installer
- Native Package Install
 - ▶ Linux: rpm,
 - ▶ AIX: smit, smitty, installp
 - ▶ Solaris: pkgadd
 - ▶ HPUX: swinstall
 - ▶ Windows: setup.exe
- Installation order: gskit, icu, admin, cp_locale(s), cp_base
- CP interim fixes require CP base or previous version installed

Caching Proxy Basics - Uninstall

- Remove packages with the OS native package tools
 - ▶ Linux: `rpm -e `rpm -qa |grep -i wses``
 - ▶ AIX: `installp -ug <package name>`
 - ▶ Solaris: `pkgrm <packagename>`
 - ▶ HPUX: `swremove <packagename>`
 - ▶ Window: Add/Remove programs

CP Basics - Starting and Stopping

- On AIX
 - ▶ startsrc start
 - ▶ ibmproxy
- On Solaris
 - ▶ /usr/sbin/ibmproxy
 - ▶ /etc/init.d/ibmproxy start
- On Linux
 - ▶ /usr/sbin/ibmproxy
 - ▶ /etc/rc.d/init.d/ibmproxy start
- On Window
 - ▶ As Window Service
 - ▶ Start ->Programs->IBM WebSphere ->Edge Server->CP

Caching Proxy Overview - Features

- Proxy Functions
 - ▶ Reverse Proxy
 - ▶ Forward Proxy
 - ▶ Transparent Proxy
- Supported Protocols
 - ▶ HTTP (HTTP 1.1 Compliant), FTP, and Gopher
- Caching
 - ▶ Memory Cache and Raw Disk Cache
- Security
 - ▶ Policy Directory Plugin/TAM Plugin
 - ▶ LDAP Plugin
 - ▶ local registry (via Caching Proxy password file)

Caching Proxy Basics

- RootDirectory
 - ▶ Unix/Linux: /opt/ibm/edge/cp/server_root
 - ▶ Windows: C:\Program Files\IBM\edge\cp\server_root
- Configuration Files Location
 - ▶ UNIX: /opt/ibm/edge/cp/etc/<locale>/
 - ▶ Windows C:\Program Files\IBM\edge\cp\etc\<locale>
- Configuration File Names
 - ▶ ibmproxy.conf

Caching Proxy Basics - Log File

- Location
 - ▶ UNIX: /opt/ibm/edge/cp/server_root/logs/
 - ▶ Windows: C:\Program Files\IBM\edge\cp\server_root\logs\
- Log Files Controlled by Directives
 - ▶ CacheAccessLog - cache hits
 - ▶ ProxyAccessLog - proxied requests
 - ▶ AccessLog - requests serviced locally
 - ▶ ErrorLog - Config Errors and request errors
 - ▶ EventLog - Informational Events during runtime
- System Log Files: stderr and stdout

Caching Proxy Configurations

- Configuration
 - ▶ Config Wizard (Window)
 - ▶ Admin Pages
 - ▶ Manually edit ibmproxy.conf
- GUI Admin Pages
 - ▶ <http://CP-Server/admin-bin/webexec/frameset.html>
 - ▶ Useful to new users
 - ▶ Limitation to some directives
- Manually edit ibmproxy.conf (for experienced users)

Caching Proxy Configurations

- Need to determine what to do with a request
- Achieved through Mapping Rules.
 - ▶ Proxy - Proxies request to backend server
 - ▶ Redirect - Redirect request to another URL
 - ▶ Pass - Passes request to the file system
 - ▶ Map - Maps one URL to another
 - ▶ Service - Service request locally
 - ▶ Fail - Fail a particular URL
 - ▶ Exec - Execute a script for a particular URL

Proxy Configurations

- Reverse Proxy
 - ▶ Proxy /* http://web1.com/* site1.foo.com :80
 - ▶ Proxy /* http://web2.com/* site2.foo.com :80

- Forward Proxy ,
 - ▶ Proxy http:*
 - ▶ Proxy ftp:*
 - ▶ Proxy gopher:*

Caching Proxy Configurations

- Proxy by VirtualHost
 - ▶ Proxy /* http://foo.linux.org/* www.host1.com
 - ▶ Proxy all requests to http://foo.linux.org that come in for the domain www.host1.com.
- Proxy by Port example
 - ▶ Proxy /* http://foo.linux.org/* :80
 - ▶ This reads Proxy all requests to http://foo.linux.org that come in on port 80
- Proxy statement Full example
 - ▶ Proxy /* https://foo.linux.org/* www.host1.com :443
 - ▶ Proxy all requests to https://foo.linux.org that come in on port 443 for the domain www.host1.com
- Proxy statement another Full example
 - ▶ Proxy /test/* http://bar.linux.org/* www.host2.com :80
 - ▶ Proxy all requests that contain the template "/test/*" to http://bar.linux.org that come in on port 80 for the domain www.host2.com

Caching Proxy Configurations - SSL

- Clients <-- https --> CP <-- http --> Servers
 - ▶ The Proxy Server Terminates SSL connections
 - ▶ Most popular, and Easy to configure
 - ▶ The intent is to off load backend servers from SSL.
- Clients <-- http --> CP <-- https/http --> Servers
 - ▶ https requests to selected servers
 - ▶ http requests to other servers
- Clients <-- https --> CP <-- https --> Servers
 - ▶ Used in highly secured network
 - ▶ Check certificates on CP and servers

Caching Proxy Configurations -SSL

- Supports hardware accelerator cards.
- IBM GSKIT is used for the SSL implementation
 - ▶ CP 4.0.x - GSKit 5.0.x
 - ▶ CP 5.0.x - GSKit 5.0.x
 - ▶ CP 5.1.x - GSKit 7.0.x
 - ▶ CP 6.0.x - GSKit 7.0.x
 - ▶ CP 6.1.x - GSKit 7.0.x
- <http://www.ibm.com/support/docview.wss?uid=swg27005198#2047>

Caching Proxy Configurations - SSL

- To Enable SSL:
 - ▶ SSLEnable on
 - ▶ KeyRing /path/key.kdb
 - ▶ KeyRingStash /path/key.sth
- Other SSL Directives
 - ▶ SSLOnly on/off -Makes the Proxy only listen for SSL requests
 - ▶ SSLCertificate - Specify key labels for certificates
 - ▶ SSLPort - Define the port to listen on for SSL request
 - ▶ V3CipherSpecs - Determine order of and supported Cipher Specs

CP Configurations - Caching

- Enable Caching: Caching On
- Caching Storages
 - ▶ For Memory Caching: CacheMemory 512 M
 - ▶ For a disk Cache: CacheDev /dev/raw1
 - ▶ Typically, a memory cache is more suitable for a Reverse Proxy
 - ▶ Typically, a disk cache is more suitable for a Forward Proxy

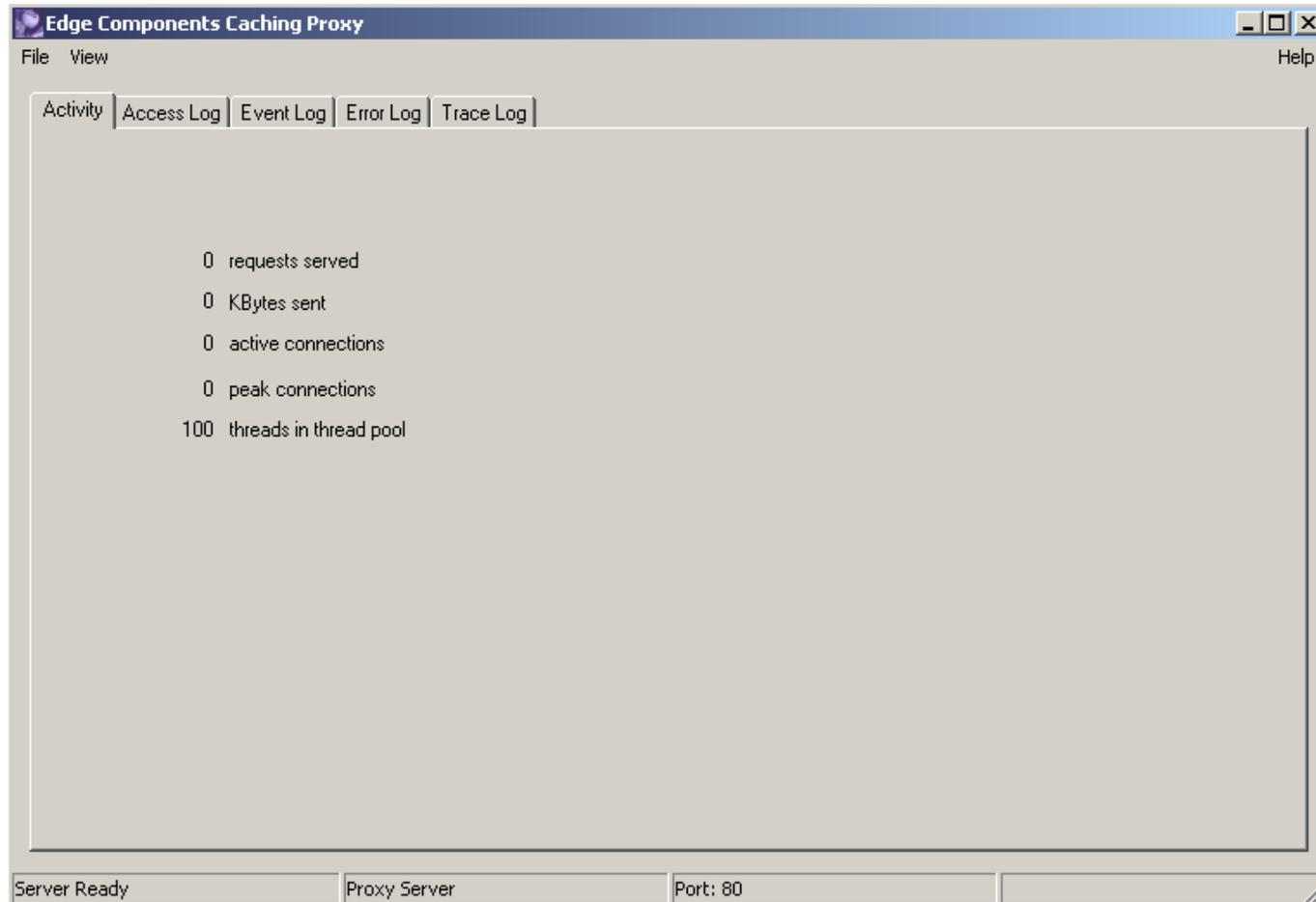
CP Configuration - iNotes

- Enable Rewrite Plugin
 - ▶ JunctionRewrite ON
 - ▶ ServerInit
 - ▶ Transmogrifier
- Mapping Rules (default iNote server is iNote01)
 - ▶ Proxy /iNote01/* http://iNote01.company.com/*
 - ▶ Proxy /iNote02/* http://iNote02.company.com/*
 - ▶ Proxy /* http://iNote01.company.com/*
- ReversePass Rules
- <http://www.ibm.com/support/docview.wss?uid=swg21162818>

Problem Determination - Tracing

- Stop proxy server and remove old logs
- Edit `ibmproxy.conf`, insert
TraceLog C:\PROGRA~1\IBM\edge\cp\server_root\logs\Trace
- Start `ibmproxy` manually
- `ibmproxy -mtv -debug`
- Recreate the problem
- "ctrl - c" to stop proxy server

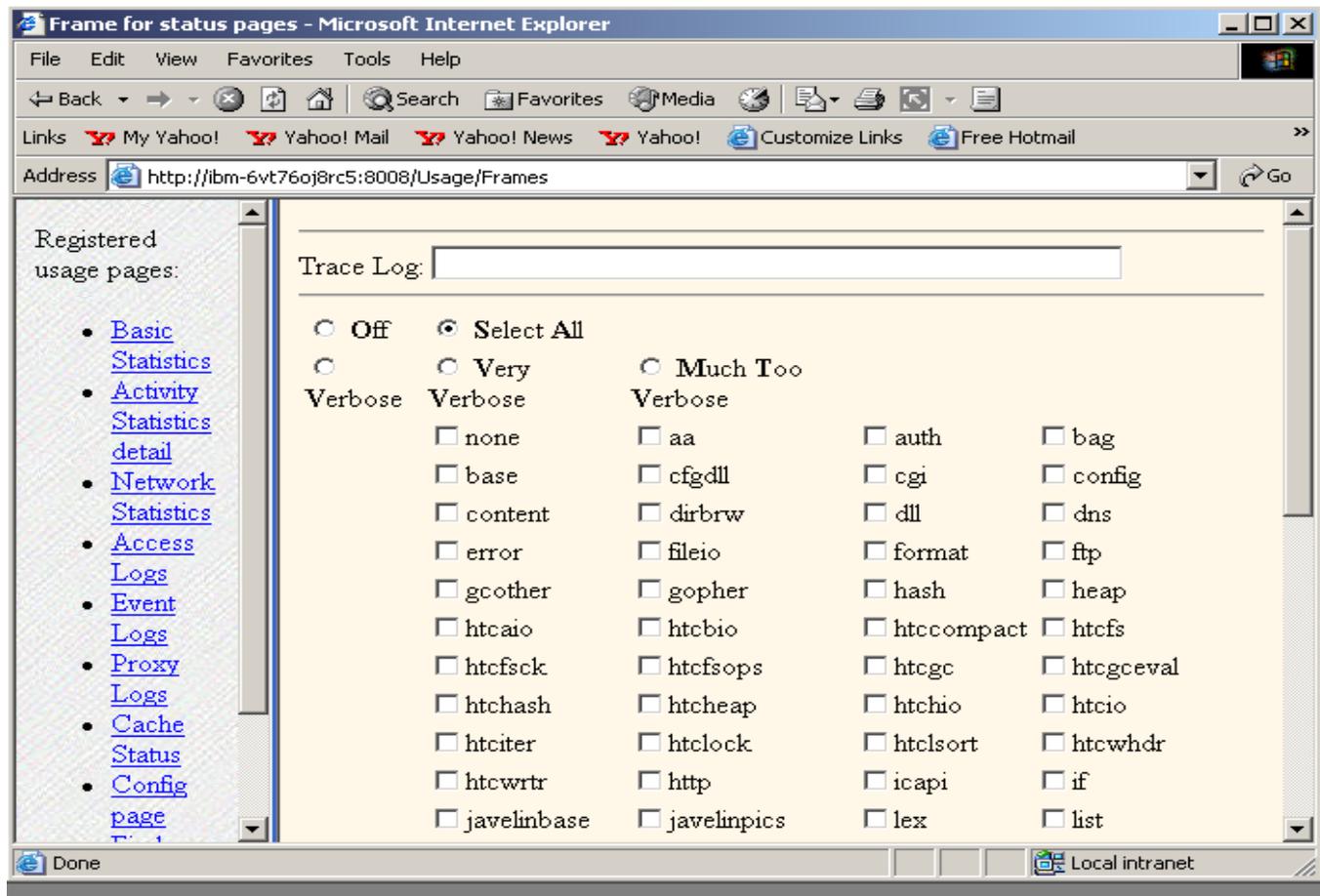
Problem Determination - Tracing



Caching Proxy Basics - Tracing (GUI)

- <http://proxy-server:80/Usage/Frames>
- Select Rtrace on left panel
- Fill out form
- Put file name, /tmp/trace
- Check "Select All" or check individual modules
- Click "Make So" Button
- Restart ibmproxy

Problem Determination - Tracing (GUI)



Problem Determination

- Operating System and OS level
- Proxy Function
 - ▶ Forward Proxy, Reverse Proxy, or Transparent Proxy
- Caching Proxy Version
 - ▶ Linux: `rpm -qa |grep -i wses`
 - ▶ Aix: `lspp -l |grep -i wses`
 - ▶ Solaris: `pkginfo |grep -i wses`
 - ▶ HPUX: `swlist WSES*`
 - ▶ Windows:
HKEY_LOCAL_MACHINE\SOFTWARE\IBM\Edge\WSES-Caching Proxy\CurrentVersion
- Mustgather: <http://www.ibm.com/support/docview.wss?uid=swg21141054>

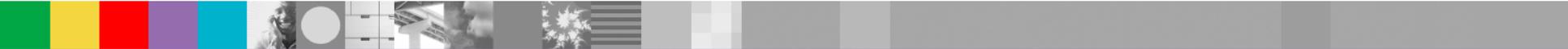
Problem Determination - Caching

- Some Files Should not be Cached
 - ▶ Files returned from requests using HTTP methods other than GET, such as POST and PUT.
 - ▶ Any documents requiring authentication, unless caching such documents is specifically allowed by the origin server.
 - ▶ The dynamic output of any CGI script
- Some files can be cached with
 - ▶ AggressiveCaching URL-pattern
- Troubleshooting Caching Problems
 - ▶ Cache-Control: No Cache
 - ▶ Pragma: No Cache

Additional WebSphere Product Resources

- Discover the latest trends in WebSphere Technology and implementation, participate in technically-focused briefings, webcasts and podcasts at:
www.ibm.com/developerworks/websphere/community/
- Learn about other upcoming webcasts, conferences and events:
www.ibm.com/software/websphere/events_1.html
- Join the Global WebSphere User Group Community: www.websphere.org
- Access key product show-me demos and tutorials by visiting IBM Education Assistant: ibm.com/software/info/education/assistant
- Learn about the Electronic Service Request (ESR) tool for submitting problems electronically:
www.ibm.com/software/support/viewlet/probsub/ESR_Overview_viewlet_swf.html
- Sign up to receive weekly technical support emails:
www.ibm.com/software/support/einfo.html

Questions and Answers



Demos for Caching Proxy Basics

- Demo-1: Installation
- Demo-2: Basic Configuration
- Demo-3: Tracing