Nalini Elkins'

Enterprise Extender Trace Analysis (Web based)

(Contact sales@insidethestack.com for class schedule and pricing.)

Many companies are implementing Enterprise Extender. Diagnosing problems and reading a trace with EE packets is a challenge! Problems occur when first implementing EE and establishing connections – you need to understand exactly how to decode the XID and Path Switch segments. Then, once EE is implemented, do you know how well it is working? We have seen companies with over half their RTP Pipes (virtual circuits) unused, yet transmitting overhead traffic.

There are now multiple headers and segments involved with the embedded protocol used for HPR within UDP: LLC, RTP, ANR Labels, Status, ABR Pacing and others. In this class, we will learn about Adaptive Route Based Pacing and flow control, slowdown mode, keep-alive and RTP retransmissions. We will also discuss the VTAM and other parameters needed for optimum EE performance.

This is a hands-on class. We will actually implement Enterprise Extender in a lab environment between z/OS (on a laptop) and PCOM. This will allow us to trace flows and issue commands. We will spend much of the time in this class in labs reading trace after trace examining the behavior of Enterprise Extender in normal situations and in abnormal. The more experience you have with traces, the more you will become comfortable and adept at resolving many problems in the TCP/IP network. We will use case studies from real situations to see how such problems manifest themselves and have been resolved.

Nalini Elkins, an experienced TCP/IP network performance expert, with many years in network management and working with IBM, will teach you practical TCP/IP diagnostic skills. You will learn how to identify protocol and performance problems. You will receive detailed explanations on how to interpret packet traces and how to resolve problem situations.

Consider this class as being dedicated to deeply and fundamentally understanding the implementation of HPR and RTP under UDP/IP via trace analysis.

Audience

This 1 day (two 4 hour sessions) seminar is designed for systems programmers who are responsible for troubleshooting, performance measurement, analysis, or tuning of their installation's Enterprise Extender network. You will leave class knowing how to read a packet trace with IP, UDP, LLC, RTP, and SNA headers. Most importantly, you will have an understanding of the protocols and how they interrelate to transport data. Then, when you look at a trace – you will understand what you are seeing. You can then find and eliminate potential trouble spots or problems in your Enterprise Extender environment.

This class is for you…

- if you want to troubleshoot your Enterprise Extender network
- if you want to know how well your EE network is performing
- if you are an experienced diagnostician, but want to see what problems other installations have had

Class Participation

During this class you may also analyze your own Enterprise Extender network.

Each student is strongly encouraged to bring packet trace data from their EE installation. Shortly after you enroll in the seminar you will be provided data collection instructions for the data you will be examining in class. We can do a EE Health Check on your data in class.

During the class, Nalini Elkins will be available to help review the data, to answer questions, and provide expert feedback. You can think of this as time that you've scheduled specifically to understand how EE works and if there are problems in your implementation.

Prerequisite

You must have taken the TCP Trace Analysis and Introduction to Diagnostics on z/OS course (or equivalent) before taking this class.

Seminar Dates and Location and Prices

Seminars are regularly offered in the USA, Europe, and Australia.

For more information, please contact:

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Please do not hesitate to call if you would like more information or details on this seminar.

In-house

All seminars are available for in-house instruction.

Instructor

Nalini Elkins, of Inside Products, Inc., (www.insidethestack.com), is a recognized leader in the field of computer performance measurement and analysis. In addition to being an experienced software product designer, developer, and planner, she is a formidable businesswoman. She has been the founder and co-founder of two start-ups in the high-tech arena.

During her career Nalini served in groups responsible for network performance design, analysis, troubleshooting, and systems programming. The classes Nalini produces and instructs, and the products she develops are designed with the needs of systems programmers as a key requirement. Nalini has an excellent understanding for the needs of system programmers because she was in their shoes for many years.

Nalini has also developed an expert system for diagnosing network hardware problems. The marketing rights for this product were sold to Boole & Babbage (which was later taken over by BMC). Nalini then joined Boole to further develop and support this product. After some time at Boole, Nalini joined some other Boole employees in co-founding a new company – Applied Expert Systems.

As Technical Co-founder, Nalini helped to design and develop a number of products in the SNA and TCP/IP network management area. These products included expert systems for SNA diagnostics, web performance diagnostics, TCP/IP routing diagnosis and TCP/IP network management. She was the Chief Developer of the product IBM first marketed as NetView Performance Monitor for TCP/IP.

Nalini now has her own company, **Inside Products, Inc.** (www.insidethestack.com), which designs, develops and markets network management and Linux management software. The products are Inside the Stack TCP/IP monitor, TCP Problem Finder, TCP Response Time Monitor, Availability Checker, and Enterprise Extender Problem Finder. Inside Products also provides consulting to resolve network problems such as FTP throughput, socket application performance and TCP/IP tuning. The consulting offerings include: TCP Network Health Check, Enterprise Extender Health Check, and IPv6 Playground. Inside Products has international distributors in Australia, Germany, Switzerland, the United Kingdom, Belgium, Netherlands, Luxemburg and Brazil.

Nalini has published numerous articles in publications such as zJournal, Technical Support, Xephon's TCP/IP Update, and Enterprise Systems Journal. Nalini is also a regular speaker at SHARE, both national and regional Computer Measurement Groups (CMGs), and variety of international conferences.

Nalini can be contacted directly at Nalini_Elkins@Insidethestack.com

Seminar Outline

The following is a high level outline for this seminar. Since the seminar is constantly being updated, actual seminar content and flow may vary slightly from this outline.

Enterprise Extender Introduction

- Why Enterprise Extender?
- Overview of APPN / HPR / RTP
- What can we learn with traces?

Important Protocol Functions for Enterprise Extender

- XID negotiation,
- Path switch,
- Retransmission, BSN, and gaps,
- ARB Flow Control and Slowdown
- Timers

Trace Headers and Segments in Enterprise Extender

- IP / UDP, LLC, RTP, ANR Labels,
- FID5 TH, RH and RU
- ARB Pacing
- Status,
- Connection Fault,
- Path Switch
- Network Control Vectors
- XID

Implement A Simple Enterprise Extender Network

- Hands on lab: implement EE between z/OS and PCom
- Define VTAM parameters to convert from subarea to APPN
- Define EE XCA major node
- Define dynamic model PU for switched major node
- Configure PCOM

How to Diagnose Enterprise Extender Problems

- How is a connection opened?

- Lab: Hands-on activation of connection, read trace, issue commands
- How does ARB flow control work?
- Lab: Hands-on - create flow, read traces, issue commands
- How is a connection closed?
- Lab: Hands-on – shut down, read traces