



S H A R E

Technology • Connections • Results

A User Experience with *ferret*: An APPN/HPR & EE Monitoring / Management Tool

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SEI Global Services, Inc.

February 25, 2008
Session 3715



Agenda

- ❖ Background Information
- ❖ Justification
- ❖ Installation / Verification
- ❖ Operation
- ❖ Optional Materials

Agenda

❖ **Background Information**

Justification

Installation / Verification

Operation

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SEI z/OS Environment

- One Production Sysplex
 - 6 Logical Partitions
 - z/OS V1R7
- One Development/Test Sysplex
 - 2 Logical Partitions
 - z/OS V1R7, migrating to z/OS V1R9
- 250 Terabytes of DASD Storage
- z/OS Production Applications:
 - CICS
 - MQ
 - TSO
 - File Transfer (Connect:Direct and FTP)
 - VPS

SEI Network Environment

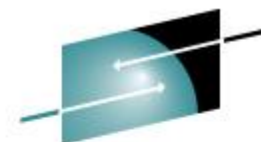
- Own and maintain network connections to clients
- Cisco Routers, switches and Firewalls
- Frame Relay and MPLS Circuits for multi-protocol support (SNA and TCP/IP)
- Many client links are/were still SNI
- (2) 3745-61A's and (1) 3745-31A supporting SNI only
- Remaining Network infrastructure is predominantly TCP/IP

Network Management Challenges

- Migration from SNA to APPN started in 2000 (inside the SYSPLEX only)
- Need to “retire” the 3745’s
- Migration to Enterprise Extender (EE) started in 2006 as an alternative to SNI
- Conversion of non-SNI SNA traffic to TCP/IP
- Core applications are still SNA based
- Support personnel have a large dependency on Netview as an automation/operational tool

Network Management Challenges

- As EE becomes more prevalent, problem determination becomes more difficult and requires more skills
 - Netview (NLDM, NPDA)
 - TCP/IP (Ping, Tracerte)
 - Netstat
 - HP Openview (SNMP)
- Need to cross train skill sets in support group



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❖ **Justification**

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Top 10 Reasons to use *ferret*

- #10 The product is specifically designed for and dedicated to monitoring an APPN/HPR/EE network
- #9 Preexisting business relationship with WDS (FTPALERT and IMPLEX)
- #8 Comprehensive alert functionality – Email, GUI, Netview, SNMP
- #7 Dynamic detection of Network configuration and connection changes
- #6 Robust logging capability – SMF, SYSLOG and task SYSOUT
- #5 Browser based

Top 10 Reasons to use *ferret*

- #4 Direct Interfaces to EXIGENCE and IMPLEX
- #3 Command interface to VTAM and MVS
- #2 Netview Interface
- And the **#1** reason.....

Provides a single consolidated “dashboard” view by gathering data from standard interfaces to
Communications Server APIs

VTAM Network Management Interface (SNAMGMT=YES)

TCP/IP Network Management API (NETMONITOR)



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❖ **Installation / Verification**

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Optional Materials

Installation

- Download from WDS Website
- Run 'Self Extracting' EXE (FEEVnnna.EXE)
- Run PC Automatic Installer (SETUP.EXE)
 - Sends install PDS to M/F via FTP
- Run Mainframe Automatic Installer (SETUP)
- ❖ Create and MOUNT separate HFS files for *ferret*
 - ❖ /usr/lpp/wds/ferret (JCL in appendix)
 - ❖ /u/ferret (automount)
- Acquire a license key
- Run the installation JOB (INSTJCL)

Installation

- ❖ APF authorize *ferret* LOADLIB
- ❖ Activate VTAM Majornode for *ferret* (APPLFEE)
- Choose a TCP port for *ferret* (Default 4000)
 - Port access must be OPEN in the Firewall
 - Requires appropriate routing
- Security definitions for Started Task(s)
- Start the FERRET and FERRETDS task
- Check for errors in the *ferret* task logs
- ❖ Configure optional interfaces (Netview, SMF)



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Verification – *ferret* Log

```
mod3sess - EXTRA! X-treme
File Edit View Tools Session Options Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY FERRET STC07370 DSID 103 LINE 0 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> PAGE
*****
Ferret Version 1.1 PTFLevel FEE1115 BuildDate 11/26/07
13:27:47 FEE0010I CMD task started
13:27:47 FEE0010I DSM task started
13:27:47 FEE0010I SYS task started
13:27:47 FEE0010I ALRT task started
13:27:47 FEE0010I HIST task started
13:27:47 FEE0010I VTAM task started
13:27:47 FEE0010I NMI task started
13:27:47 FEE0010I PKT task started
13:27:47 FEE0010I HTTP task started
13:27:47 FEE0010I USS task started
13:27:47 FEE0010I TCP task started
13:27:47 FEE0010I EMCS task started
13:27:47 FEE0006I ----- Processing Configuration PROFEE17 -----
13:27:47 FEE0922I Instance set to FerretSEIY
13:27:47 FEE0905I Product key accepted
13:27:47 FEE0919I HFS runtime Path /usr/lpp/wds/ferret
13:27:47 FEE0919I HFS user Path /u/ferret
13:27:47 FEE0936I Ferret running with security level 2
13:27:47 FEE0934I SMF Record type set to 235
13:27:47 FEE0942I MVS Command line Enabled
13:27:47 FEE0941I MVS console filtering Enabled
13:27:47 FEE0948I VTAM Console(s) defined
13:27:47 FEE0928I HttpServer defined on port 4000 at address 172.16.81.61
13:27:47 FEE0928I DomainServer defined on port 4001 at address 127.0.0.1
13:27:47 FEE0928I ImplexServer defined on port 1961 at address 172.16.81.61
13:27:47 FEE0928I NetViewServer defined on port 4021 at address 172.16.99.61
[4]B :00.1 04/21
Connected to host seigw1 [172.16.80.3] (T0231G22) | Keys: 1570502 Saved: 002 | NUM | 2:35 PM
```



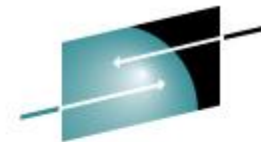
Verification – *ferret* Log

```
mod3sess - EXTRA! X-treme
File Edit View Tools Session Options Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY FERRET STC07370 DSID 103 LINE 28 COLUMNS 02- 81
COMMAND INPUT ==>> SCROLL ==>> PAGE
13:27:47 FEE0928I SMTPServer defined on port 25 at address 10.40.40.37
13:27:47 FEE0928I SNMPServer defined on port 162 at address 127.0.0.1
13:27:47 FEE0945I Alert limit set to 10000 alerts
13:27:47 FEE0929I Alert retention set to 3 days
13:27:47 FEE0935I PathSwitch retention set to 5 days
13:27:47 FEE0007I ----- Completed Configuration PROFEE17 -----
13:27:47 FEE0331I Opening HFS directory /u/ferret/profiles
13:27:47 FEE0331I Opening HFS directory /usr/lpp/wds/ferret/profiles
13:27:47 FEE0926I Monitoring for *.* based on profile default
13:27:47 FEE0253I CSA Area allocated at 2379C1D0 Tag=FERRETSEIY
13:27:47 FEE0259I CSA extension allocated at 2386E000
13:27:48 FEE0061I SysData Data space initialized: Dspname FEEDDATA Alet 01FF002
13:27:48 FEE0061I SysLog Data space initialized: Dspname FEEDLOG Alet 0101003
13:27:48 FEE0063I Topology Data space activated : Dspname FEEDTOPO Alet 0101003
13:27:48 FEE0064I Topology Data space WARM started
13:27:48 FEE0023I Topology discovery has pre-loaded 1 NETIDs
13:27:48 FEE0023I Topology discovery has pre-loaded 8 Endpoints
13:27:48 FEE0023I Topology discovery has pre-loaded 8 IPAddresses
13:27:48 FEE0023I Topology discovery has pre-loaded 9 Routes
13:27:48 FEE0023I Topology discovery has pre-loaded 81 PathSwitches
13:27:48 FEE0065I Messages DIV activated : Size 172
13:27:48 FEE0331I Opening HFS directory /u/ferret/alerts
13:27:48 FEE0331I Opening HFS directory /usr/lpp/wds/ferret/alerts
13:27:48 FEE0073I Alert archive contained 4963 expired alerts
13:27:48 FEE0067I Alert archive contains 3437 alerts
13:27:51 FEE0071I History task connected to VTAM NMI Interface
13:27:51 FEE0065I History DIV activated : size 612
13:27:51 FEE0068I History archive contains 610 records
-----
[4]B :00.1 04/21
-----
Connected to host seigw1 [172.16.80.3] (T0231G22) | Keys: 1570503 Saved: 002 | NUM | 2:35 PM
```



Verification – *ferret* Log

```
mod3sess - EXTRA! X-treme
File Edit View Tools Session Options Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY FERRET STC07370 DSID 103 LINE 56 COLUMNS 02- 81
COMMAND INPUT ==>> SCROLL ==>> PAGE
13:27:51 FEE0030I --- History Consolidation Statistics ---
13:27:51 FEE0031I Current size (Blocks) 610
13:27:51 FEE0032I Records read 305
13:27:51 FEE0033I Records consolidated 0
13:27:51 FEE0036I -----
13:27:52 FEE0205I VTAM Console has activated ACB FESEIY3
13:27:52 FEE0205I VTAM Console has activated ACB FESEIY2
13:27:52 FEE0205I VTAM Console has activated ACB FESEIY1
13:27:52 FEE0029I Ferret running under Communications Server v1.7
13:27:52 FEE0020I VTAM discovery processing in progress
13:27:52 FEE0028I Local Node SEINET01.CDRM17
13:27:52 FEE0028I Local Node SEINET01.CDRM17
13:27:52 FEE0022I VTAM discovery processing completed
13:27:54 FEE0318I NMI task connected to VTAM NMI Interface
13:27:54 FEE0020I NMI discovery processing in progress
13:27:54 FEE0022I NMI discovery processing completed
13:27:54 FEE0331I Opening HFS directory /usr/lpp/wds/ferret/http
13:27:54 FEE0383I Connection to NetView Server (172.16.99.61) established
13:27:54 FEE0393I Connection to Implex Server (172.16.81.61) established
13:27:54 FEE0363I Connection to Domain Server (127.0.0.1) established
13:27:54 FEE0025I Remote Ferret SEIPLXT.SEIY node SEINET01.CDRM17 active: Port 4
13:27:54 FEE0334I web objects loaded 67 failed 0
13:27:54 FEE0302I HTTP Server started
13:27:54 FEE0304I HTTP Server listening on port 4000
13:27:54 FEE0050I EMCS Console FESEIY active CNID 6777230
13:28:00 FEE0394I Connection to Implex Server (172.16.81.61) ended
13:29:00 FEE0393I Connection to Implex Server (172.16.81.61) established
13:30:23 FEE0037I History processing: 46 SMF records written
[4]B :00.1 04/21
Connected to host seigw1 [172.16.80.3] (T0231G22) Keys: 1570504 Saved: 002 NUM 2:36 PM
```



SDSF ? Display

```
SEI - EXTRA! X-treme
File Edit View Tools Session Options Help
Display Filter View Print Options Help
-----
SDSF JOB DATA SET DISPLAY - JOB FERRET (STC16501) LINE 1-15 (15)
COMMAND INPUT ===> _
PREFIX=FER* DEST=(ALL) OWNER=* SYSNAME=
SCROLL ===> CSR
NP DDNAME StepName ProcStep DSID Owner C Dest Rec-Cnt Page
JESJCLIN 1 NETTASK I 3
JESMSGLG JES2 2 NETTASK I 2
JESJCL JES2 3 NETTASK I 43
JESYSMSG JES2 4 NETTASK I 2
$INTTEXT JES2 5 NETTASK A 0
SYSPRINT VERIFY 101 NETTASK I 4
SYSPRINT FERRET 103 NETTASK I 7,204
SYSTRACE FERRET 104 NETTASK I 0
THUJAN31 FERRET 105 NETTASK I 4,966
FRIFEB01 FERRET 106 NETTASK I 15,935
SATFEB02 FERRET 107 NETTASK I 12,763
SUNFEB03 FERRET 108 NETTASK I 6,701
MONFEB04 FERRET 109 NETTASK I 9,889
TUEFEB05 FERRET 110 NETTASK I 8,823
WEDFEB06 FERRET 111 NETTASK I 5,279
4B :00.1 05/21
Connected to host SEIGW1 [172.16.80.3] (T0231E02) | Keys: 1572741 Saved: 002 | NUM | 2:19 PM
```



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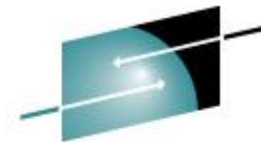
Background Information

Justification

Installation / Verification

❖ **Operation**

Optional Materials



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Logon Screen

http://172.16.81.61:4000/summaryview.xml - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address http://172.16.81.61:4000/summaryview.xml Go Links

ferret **WILLIAM**
DATA SYSTEMS

Ferret v1.1 Level FEE1115 Sysid SEIPLXT.SEY (SSCP SEINET01.CDRM17)

Ferret SignOn

Userid

Password

New Password

New Password

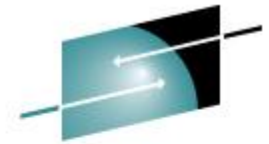
Logon

Ferret	1.1
PTF Level	FEE1115
Built	11/26/07 at 10.21

Copyright William Data Systems 1995 - 2007, All Rights Reserved.

Done Internet

ferret – Initial / Default View



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http://10.65.40.21:4000/summaryview.xml?pid=1&sessid=88675037 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://10.65.40.21:4000/summaryview.xml?pid=1&sessid=88675037

ferret **WILLIAM DATA SYSTEMS**

Ferret v1.1 Level FEE1113 Sysid SEIPLXP.SEIC (SSCP SEINET01.CDRM2)

Networks ControlPoints EE Nodes Paths Alerts Tools Admin

Top RTPs : Highest LU-LU Session Count

RTP Name	COS	ARB Netid	CPName	LU-LU
CNR006BF	#INTER	B1001	B1001002	121
CNR006BD	#INTER	B1001	B1001001	105
CNR006CC	#			
CNR006D3	#			
CNR006C4	#			

Top RTPs : Highest RTT

RTP Name	COS	ARB Netid	CPName	RTT
CNR0004A	RSETUP	SEINET01	CDRM7	1000
CNR00065	RSETUP	USMELN01	CDRMBD	182
CNR00022	#			
CNR0006E1	#			
CNR000726	#			

Top RTPs : Highest SendRate

RTP Name	COS	ARB Netid	CPName	SendRate
CNR006C1	#CONNECT	B1001	B1001001	26
CNR006E1	#INTER	CSNET	CS15	22
CNR0001A	#			
CNR00007	#			
CNR0006C	#			
CNR0006C7	#			
CNR00015	#			

Top RTPs : Most Path switches

RTP Name	COS	ARB Netid	CPName	Switches
CNR00029	CPSVCMG	B1001	B1001002	15
CNR006C7	CPSVCMG	CSNET	CS10	11
CNR00015	#			

System Summary

Resource	Total	LastMin
Detected CPs	49	▲
Detected EE IP Addresses	25	0
Active EE Connections	19	0
Active RTPs	58	0
Active LU-LU Sessions	326	▼ -6
Average smoothed RTT	63	0
Average send rate	3	0
Total path switches	44	0

Top RTPs : Queued packets

RTP Name	COS	ARB Netid	CPName	QPackets
CNR00022	#INTER	CSNET	CS01	12
CNR00025	CPSVCMG	SEINET01	CDRM7	2
CNR006BF	#			
CNR006BD	#			
CNR0002B	#			

Top RTPs : Most retransmissions

RTP Name	COS	ARB Netid	CPName	ReTran
CNR0001A	#INTER	USMELN01	CDRMNJ	1814
CNR006BD	#INTER	B1001	B1001001	769
CNR006BF	#INTER	B1001	B1001002	684
CNR00069	#INTER	B1001	B1001068	265
CNR006CC	#CONNECT	USMELN01	CDRMBD	89

Internet



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ferret CP LIST

http://10.65.40.21:4000/summaryview.xml?pid=1&sessid=88675037 - Microsoft Internet Explorer

ferret

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Ferret v1.1 Level FEE1113 Sysid SEIPLXP.SEIC (SSCP SEINET01.CDRM2)

Networks ControlPoints EE Nodes Paths Alerts Tools Admin

18:03:45 CP List

NetId	CPName	Type	CP	ARB	RTT	Paths	Alerts	Switches	RTPs	RTT	250ms	500ms	750ms	1000ms
B1001	B1PH1009		●			2								
B1001	B1001001	NN	●	●	●	5	1040	1	4	29	■			
B1001	B1001002	NN	●	●	●	4	1100		4	30	■			
B1001	B1001068		●	●	●	5	549		1	34	■			
B1001	B1001086		●			1								
CHEMNET	CBCDRMC3													
CHEMNET	CBCDRMC4													
CHEMNET	CBCDRMJ1		●	●	●	8	2	1	2	52	■			
CHEMNET	CBCDRML1													
CHEMNET	CBCDRMW2		●	●	●	7			1	30	■			
USMELN01	CDRMBCB	NN	●	●	●	2	623		3	30	■			
USMELN01	CDRMBD	NN	●	●	●	6	746		4	67	■			
USMELN01	CDRMBK		●			1								
USMELN01	CDRMIQ	NN	●	●	●	4	533		3	34	■			
USMELN01	CDRMNJ	NN	●	●	●	6	1164	2	4	41	■			
B1001	CDRM08		●	●	●	4		2	1	30	■			
SEINET01	CDRM1	NN	●	●	●	1	301	1	2	14	■			
SEINET01	CDRM17	NN	●	●	●	1	416	4	1	10	■			
SEINET01	CDRM19	NN	●	●	●	1	252		2	8	■			

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Alerts and Alert Summary Views

http://10.65.40.21:4000/summaryview.xml?pid=1&sessid=88675037 - Microsoft Internet Explorer

ferret

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Ferret v1.1 Level FEE1113 Sysid SEIPLXP.SEIC (SSCP SEINET01.CDRM2)

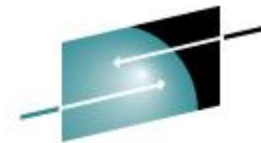
Networks ControlPoints EE Nodes Paths Alerts Tools Admin

- 31 Jan 15:55:40 RTP CNR0001C (#INTER) to USMELN01.CDRMBD in ARB red state
- 31 Jan 15:55:40 Excessive RTT to SEINET01.CDRM7
- 31 Jan 15:55:40 Excessive retransmissions to USMELN01.CDRMNJ
- 31 Jan 15:55:40 Excessive retransmissions to B1001.B1001002
- 31 Jan 15:55:40 Excessive retransmissions to B1001.B1001001
- 31 Jan 15:55:40 Excessive retransmissions to SSB.SSBE
- 31 Jan 15:55:40 Excessive retransmissions to CSNET.CS50
- 31 Jan 15:55:40 Excessive retransmissions to SSB.SSBN
- 31 Jan 15:55:40 Excessive retransmissions to B1001.B1001068
- 31 Jan 15:55:40 RTP CNR0001E (#INTER) to CHEMNET.CBCDRMJ1 in ARB red state
- 31 Jan 15:55:40 NLPs on resequencing queue to CSNET.CS01
- 31 Jan 15:55:40 CP-CP Session with USMMBBUF.VTM11 inactive
- 31 Jan 15:55:40 CP-CP Session with USMMBBUF.VTM04 inactive
- 01 Feb 00:13:00 Excessive retransmissions to SEINET01.CDRM17
- 01 Feb 08:07:00 Excessive RTP LU-LU sessions to B1001.B1001001
- 01 Feb 08:08:00 Excessive RTP LU-LU sessions to B1001.B1001002
- 01 Feb 08:48:00 Excessive retransmissions to CSNET.CS10
- 01 Feb 09:27:00 Excessive retransmissions to CSNET.CS15
- 01 Feb 17:59:00 RTP CNR00025 (CPSVCMG) to SEINET01.CDRM1
- 01 Feb 17:59:00 RTP CNR00002 (CPSVCMG) to SEINET01.CDRM1
- 01 Feb 17:59:00 NLPs on pending ack queue to SEINET01.CDRM6
- 01 Feb 17:59:00 NLPs on pending ack queue to CSNET.CS50

18:00:24 Alerts Summary

Last Alert	Description	Category	Alerts
01 Feb 18:00:00	NLP Retransmissions	performance	8053
01 Feb 18:00:00	NLPs waiting acknowledgement	performance	1635
01 Feb 17:54:00	High round trip time	performance	76
01 Feb 17:54:00	Outbound NLPs queued	performance	98
01 Feb 17:05:00	NLPs on resequencing queue	performance	27
01 Feb 17:04:00	Path switch notifications	configuration	17
01 Feb 16:32:00	High Send Rate	performance	91
01 Feb 09:12:00	New APPN endpoints detected	configuration	1
01 Feb 08:08:00	High LU-LU session count	performance	2

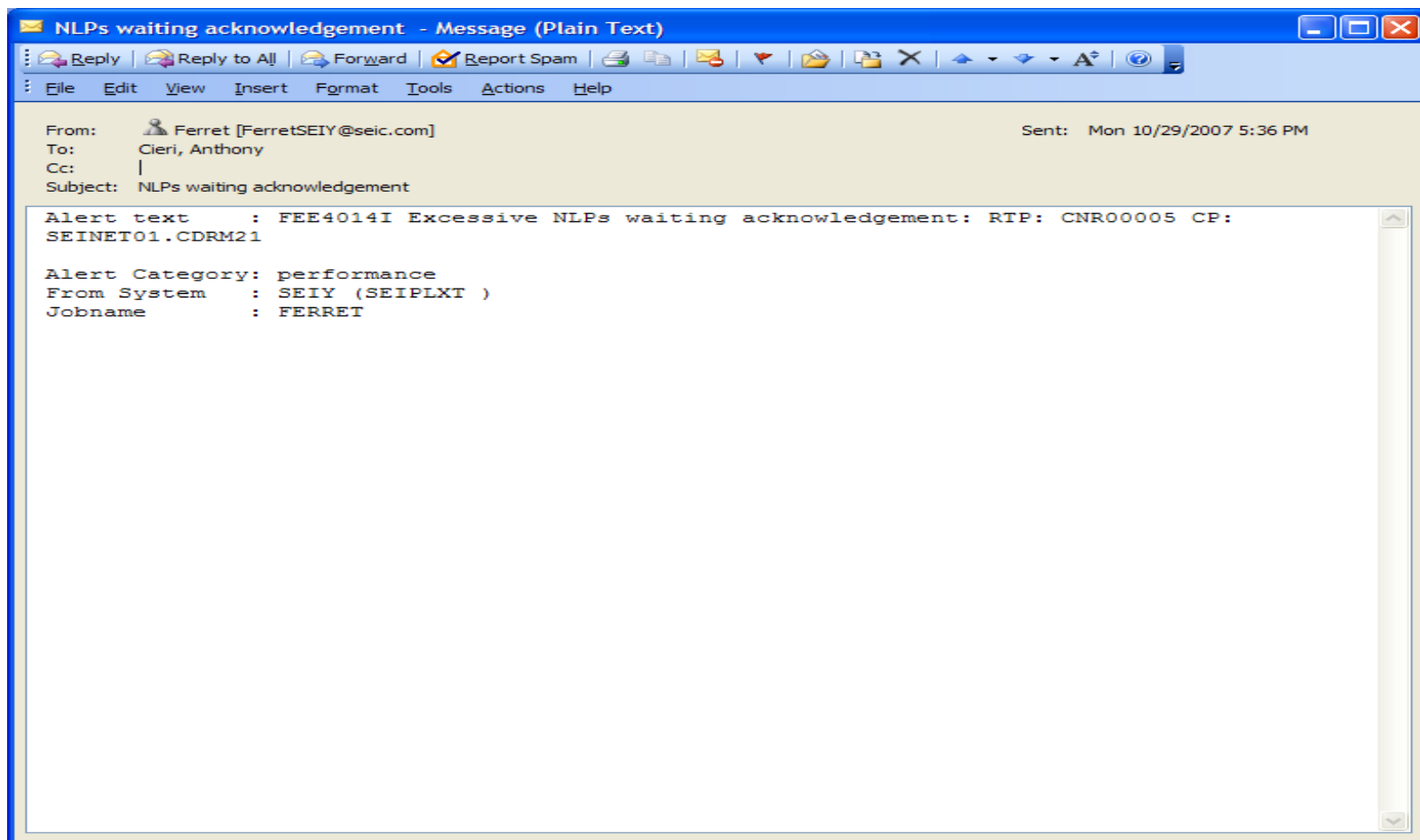
Done Internet

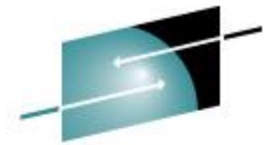


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Email Alerts





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VIEW Network Log (MVS cmd)

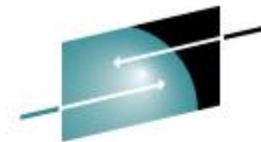
18:02:13 Network Log

Message 17107 of 17130

Find Next Previous First Last

18.01.44	IST1766I	SEINET01.CDRM9	ACT	ACT	UP	NN	24477240
18.01.44	IST1766I	B1001.B1001002	ACT	ACT	UP	NN	24477010
18.01.44	IST1766I	SEINET01.CDRM1	ACT	ACT	UP	NN	24AC5240
18.01.44	IST1766I	CSNET.CS10	ACT	ACT	UP	NN	24AC5128
18.01.44	IST1766I	CSNET.CS50	ACT	ACT	UP	NN	24AC5010
18.01.44	IST1766I	USMELN01.CDRMIQ	ACT	ACT	UP	NN	24477E48
18.01.44	IST1766I	USMELN01.CDRMNJ	ACT	ACT	UP	NN	24477C18
18.01.44	IST1766I	B1001.B1001001	ACT	ACT	UP	NN	24477B00
18.01.44	IST1766I	SSB.SSBR	ACT	ACT	UP	NN	244779E8
18.01.44	IST1766I	SSB.SSBN	ACT	ACT	UP	NN	244776A0
18.01.44	IST1766I	USMELN01.CDRMBCB	ACT	ACT	UP	NN	24477588
18.01.44	IST1766I	SEINET01.CDRM19	ACT	ACT	UP	NN	24477128
18.01.44	IST1454I	19 ADJCP(S)	DISPLAYED				
18.01.44	IST314I	END					
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR00726	CP:	CSNET.CS15	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR00713	CP:	CSNET.CS15	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006E1	CP:	CSNET.CS15	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR0003C	CP:	SSB.SSBN	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006C7	CP:	CSNET.CS10	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006D3	CP:	CSNET.CS50	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR00018	CP:	CSNET.CS50	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006C1	CP:	B1001.B1001001	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006BD	CP:	B1001.B1001001	
18:02:00	FEE4017I	Excessive NLPs being retransmitted:	RTP:	CNR006C4	CP:	B1001.B1001002	

Command



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Tools – VTAM Display (D NET cmd)

http://172.16.81.61:4000/summaryview.xml?sessid=6653101 - Microsoft Internet Explorer

ferret

WILIAM DATA SYSTEMS

Ferret v1.1 Level FEE1115 Sysid SEIPLXT.SEII (SSCP SEINET01.CDRM17)

Networks ControlPoints EE Nodes Paths Alerts Tools Admin

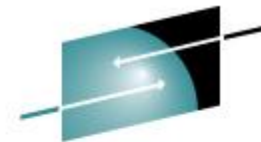
18:08:40 VTAM Display

Command

Command

```
IST097I DISPLAY ACCEPTED
IST350I DISPLAY TYPE = EE
IST2000I ENTERPRISE EXTENDER GENERAL INFORMATION
IST1685I TCP/IP JOB NAME = TCPIP
IST2003I ENTERPRISE EXTENDER XCA MAJOR NODE NAME = CA17EEXT
IST2004I LIVTIME = (10,0) SRQTIME = 15 SRQRETRY = 3
IST2005I IPRESOLV = 0
IST924I -----
IST2006I PORT PRIORITY = SIGNAL NETWORK HIGH MEDIUM LOW
IST2007I IPPORT NUMBER = 12000 12001 12002 12003 12004
IST2008I IPTOS VALUE = CO CO 80 40 20
IST924I -----
IST2017I TOTAL RTP PIPES = 0 LU-LU SESSIONS = 0
IST2018I TOTAL ACTIVE PREDEFINED EE CONNECTIONS = 7
IST2019I TOTAL ACTIVE LOCAL VRN EE CONNECTIONS = 0
IST2020I TOTAL ACTIVE GLOBAL VRN EE CONNECTIONS = 0
IST2021I TOTAL ACTIVE EE CONNECTIONS = 7
IST314I END
```

Internet



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ferret Commands via Netview

```
SEI - EXTRA! X-treme
File Edit View Tools Session Options Help
Tivoli NetView CNM17 SCNS03 02/01/08 18:13:07
* CNM17 FERRET *,CPLIST
= CNM17
FEE1002I Netid CPName Type ARB Paths Switches RTPS RTT
FEE2002I SEINET01 CDRM1 NN Green 3 7 2 451
FEE2002I SEINET01 CDRM19 NN Green 1 12 1 8
FEE2002I SEINET01 CDRM2 NN Green 1 9 1 19
FEE2002I SEINET01 CDRM21 NN Green 1 10 4 445
FEE2002I SEINET01 CDRM6 NN Green 1 10 1 10
FEE2002I SEINET01 CDRM7 NN Green 1 6 1 25
FEE2002I SEINET01 CDRM9 NN Red 1 10 1 26
FEE1998I End of display
* CNM17 RTP RED
C CNM17 RTP Target Send Seq Recv Ack MaxAck
C CNM17 Name CPName Queue Queue Queue Queue Queue
C CNM17 -----
C CNM17 CNR00005 SEINET01.CDRM9 0 0 0 0 17
C CNM17 -----
* CNM17 RTP YELLOW
C CNM17 No RTPs in ARB YELLOW state
-----
???
```

4B :00.1 24/01

Connected to host SEIGW1 [172.16.80.3] (T0191D17) | Keys: 1533022 Saved: 003 | NUM | 6:13 PM



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Agenda

Background Information

Justification

Installation / Verification

Operation

❖ **Optional Materials**



JCL to Allocate *ferret* HFS Files

- //jobname JOB (ACCT),CLASS=A,MSGCLASS=X,NOTIFY=&SYSUID
- /*JOBPARM S=*
- /*-----*
- /* ALLOCATE HFS FILES FOR *ferret* INSTALLATION *
- /*-----*
- //STEP EXEC PGM=IEFBR14
- //LPPWDS DD DSN=OMVS.SEIT.USR.LPP.WDS.FERRET.HFS,
- // SPACE=(CYL,(25,1,1)),
- // DSNTYPE=HFS,
- // DISP=(,KEEP,DELETE)
- //WDSUSR DD DSN=OMVS.SEIT.USER.FERRET.HFS,
- // SPACE=(CYL,(100,1,1)),
- // DSNTYPE=HFS,
- // DISP=(,KEEP,DELETE)
- /*
- //



JCL to mount *ferret* HFS file

- //jobname JOB (ACCT),CLASS=T,MSGCLASS=X,NOTIFY=&SYSUID
- /*JOBPARM S=*
- /*-----*
- /* Create Mountpoints and mount the HFS files *
- /*-----*
- //MOUNT PROC
- //STEP EXEC PGM=IKJEFT01,TIME=1440
- //SYSTSPRT DD SYSOUT=*
- // PEND
- //STEPX EXEC MOUNT
- //SYSTSIN DD *
- MKDIR '/usr/lpp/wds' MODE(7,5,5)
- MKDIR '/usr/lpp/wds/ferret' MODE(7,5,5)
- MOUNT FILESYSTEM('OMVS.SEIT.USR.LPP.WDS.FERRET.HFS') +
- MOUNTPOINT('/usr/lpp/wds/ferret') +
- TYPE(HFS)
- /*



Automount example

- * This file is located in **/etc/auto.master**
- /u /etc/u.map
- /nfs /etc/nfs.map

- * This file is located in **/etc/u.map**
- name *
- type HFS
- filesystem OMVS.&SYSNAME..USER.<uc_name>.HFS
- mode rdwr
- duration nolimit
- delay 0
- setuid Yes



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Sample *ferret* Profile

* Ferret Profile Datasets *

* System Settings *

Instance Ferret&SYSNAME
SEIT:ProductKey xxxxxxxxxxxxxxxxx
Path /usr/lpp/wds/ferret
UserPath /u/ferret
SecurityLevel 2
SMFRecordType 235
MVSCommandLine Enabled
MVSConsoleFilter Enabled

* Console Settings *

VTAMConsole FEE&SYSNAME.1
FEE&SYSNAME.2 FEE&SYSNAME.3

* Server Settings *

HttpServer 4000
DomainServer 127.0.0.1 4001
ImplexServer 172.16.81.61 1961
NetviewServer 172.16.99.61 4021
SMTPServer 10.40.40.37 25
Emailsender Ferret&SYSNAME.@seic.com
SNMPServer 127.0.0.1 162

* Alert Settings *

AlertLimit 10000
AlertRetention 3
PSWRetention 5

CA-Top Secret Definitions

- TSS Modify FAC(USERxx=NAME=FERRET)
- TSS Modify FAC(FERRET=PGM=FEE)
- TSS Modify FAC(FERRET=MODE=FAIL)
- TSS ADD(FERRET) FAC(FERRET)
- TSS ADD(FERRET) MASTFAC(FERRET)
- Create an ACID for the *ferret* started tasks
 - Must have an OMVS segment
 - Must have authority to open TCP sockets / issue USS commands
- TSS ADD STC(FERRET) ACID(FERRET)
- TSS ADD STC(FERRETDS) ACID(FERRET)

CA-Top Secret User Definitions

- SecurityLevel 0
 - TSS ADD(userid) FAC(FERRET)
- SecurityLevel 1
 - TSS ADD(userid) FAC(FERRET)
 - TSS PERMIT(userid) IBMFAC(FERRET) ACCESS(READ)
- SecurityLevel 2
 - ❖ Administrator User
 - TSS ADD(userid) FAC(FERRET)
 - TSS PERMIT(userid) IBMFAC(FERRET) ACCESS(**ALL**)
 - ❖ Regular User
 - TSS ADD(userid) FAC(FERRET)
 - TSS PERMIT(userid) IBMFAC(FERRET) ACCESS(**READ**)



Sample CNMSTYLE member

- *****
- * These statements should be added to the CNMSTYLE member for *
- * Tivoli NetView 1.4 and above. They should be used instead of adding *
- * a 'TASK' statement in member DSIDMNU. *
- * *
- * The Ferret / Netview Message receiver task can be started by *
- * issuing the following NetView command: *
- * command: *
- * *
- * START TASK=Ferret *
- * *
- *****
- TASK.Ferret.MOD=FEENVTSK
- TASK.Ferret.MEM=FEETPARM
- TASK.Ferret.PRI=9
- TASK.Ferret.INIT=N
- *



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Sample SMF Report

Adobe Reader - [ferrpt03.pdf]

File Edit View Document Tools Window Help

Save a Copy Search Select 91% Help Search Web

SRI CP/EE DETAIL REPORT (FERRPT03) 10:52 Tuesday, February 5, 2008 183
 JOBNAME = FERRET VERSION = 1.1 LEVEL = FEE1113
 ----- SYSID=SRIC CPNETID=SEINET01 -----
 (continued)

Obs	DATE / TIME	CP NAME NETID	MAX # SESS	AVG. RTT	NLPS RESENT	NLPS SENT	NLPS RECV	BYTES SENT	BYTES RECV
9238	04FEB08:00:00:00	SEINET01.CDRM21	0	0	0	0	0	0	0
9239	04FEB08:00:00:00	SEINET01.CDRM21	0	0	0	0	0	0	0
9240	04FEB08:00:00:00	SEINET01.CDRM21	2	12	0	762	764	116,601	66,316
9241	04FEB08:00:00:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9242	04FEB08:00:00:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9243	04FEB08:00:00:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9244	04FEB08:00:00:00	SEINET01.CDRM1	2	1000	0	1,187	1,187	178,582	98,236
9245	04FEB08:00:15:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9246	04FEB08:00:15:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9247	04FEB08:00:15:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9248	04FEB08:00:15:00	SEINET01.CDRM6	2	1000	0	1,118	1,118	197,592	124,181
9249	04FEB08:00:15:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9250	04FEB08:00:15:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9251	04FEB08:00:15:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9252	04FEB08:00:15:00	SEINET01.CDRM6	2	10	0	828	823	127,410	94,894
9253	04FEB08:00:15:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9254	04FEB08:00:15:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9255	04FEB08:00:15:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9256	04FEB08:00:15:00	SEINET01.CDRM17	2	1000	3	828	825	130,836	78,795
9257	04FEB08:00:15:00	SEINET01.CDRM9	0	0	0	0	0	0	0
9258	04FEB08:00:15:00	SEINET01.CDRM9	0	0	0	0	0	0	0
9259	04FEB08:00:15:00	SEINET01.CDRM9	0	0	0	0	0	0	0
9260	04FEB08:00:15:00	SEINET01.CDRM9	2	20	0	1,241	1,242	205,428	138,388
9261	04FEB08:00:15:00	SEINET01.CDRM19	0	0	0	0	0	0	0
9262	04FEB08:00:15:00	SEINET01.CDRM19	0	0	0	0	0	0	0
9263	04FEB08:00:15:00	SEINET01.CDRM19	0	0	0	0	0	0	0
9264	04FEB08:00:15:00	SEINET01.CDRM19	2	8	0	833	830	129,645	74,226
9265	04FEB08:00:15:00	SEINET01.CDRM21	0	0	0	0	0	0	0
9266	04FEB08:00:15:00	SEINET01.CDRM21	0	0	0	0	0	0	0
9267	04FEB08:00:15:00	SEINET01.CDRM21	0	0	0	0	0	0	0
9268	04FEB08:00:15:00	SEINET01.CDRM21	2	15	0	842	845	131,518	79,053
9269	04FEB08:00:15:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9270	04FEB08:00:15:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9271	04FEB08:00:15:00	SEINET01.CDRM1	0	0	0	0	0	0	0
9272	04FEB08:00:15:00	SEINET01.CDRM1	2	1000	0	1,246	1,250	193,297	109,946
9273	04FEB08:00:30:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9274	04FEB08:00:30:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9275	04FEB08:00:30:00	SEINET01.CDRM7	0	0	0	0	0	0	0
9276	04FEB08:00:30:00	SEINET01.CDRM7	2	1000	0	1,026	1,025	182,247	108,358
9277	04FEB08:00:30:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9278	04FEB08:00:30:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9279	04FEB08:00:30:00	SEINET01.CDRM6	0	0	0	0	0	0	0
9280	04FEB08:00:30:00	SEINET01.CDRM6	2	9	0	773	771	117,665	84,310
9281	04FEB08:00:30:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9282	04FEB08:00:30:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9283	04FEB08:00:30:00	SEINET01.CDRM17	0	0	0	0	0	0	0
9284	04FEB08:00:30:00	SEINET01.CDRM17	2	1000	3	768	770	118,777	64,691
9285	04FEB08:00:30:00	SEINET01.CDRM9	0	0	0	0	0	0	0
9286	04FEB08:00:30:00	SEINET01.CDRM9	0	0	0	0	0	0	0
9287	04FEB08:00:30:00	SEINET01.CDRM9	0	0	0	0	0	0	0

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