CANZLOG: Consolidated Logging for the New and Experienced User

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IBM

August 15, 2013
Session 13546

SHARE
in Boston

Tivoli® System z® Sessions at SHARE

Monday
11:00   14073: What's New with System z Monitoring with OMEGAMON®   Room 204
4:30   14121: OMEGAMON XE for Storage   Room 304

Tuesday
9:30   13903: OMEGAMON V5 Enhanced 3270 Hands-on Lab   Room 202
4:30   14163: OMEGAMON for Storage   Room 304

Wednesday
8:00   13295: What's New(er) for z/OS Network Performance Monitoring with
                      OMEGAMON   Room 204
11:00   14076: Improving Application Availability with IBM System Automation   Room 206
11:00   14089: What's New in 2013 to the Tivoli z/OS Storage Management Portfolio?   Room 304
12:15   14116: OMEGAMON Parmgen Hands-on Lab   Room 202
3:00   14080: Shrink Your Batch Window with New Process Optimization and Enhanced
   Workload Automation   Room 304

Thursday
11:00   13547: z/OS Communication Server and NetView for z/OS DVIPA Management Room 204
12:15   13546: CANZLOG – Consolidated Logging for the New and Experienced User   Room 307
1:30   14077: Improve Service Levels with Enhanced Data Analysis   Room 200
3:00   13545: Help! I've Inherited the Network – and They Expect Me to Manage It!   Room 200
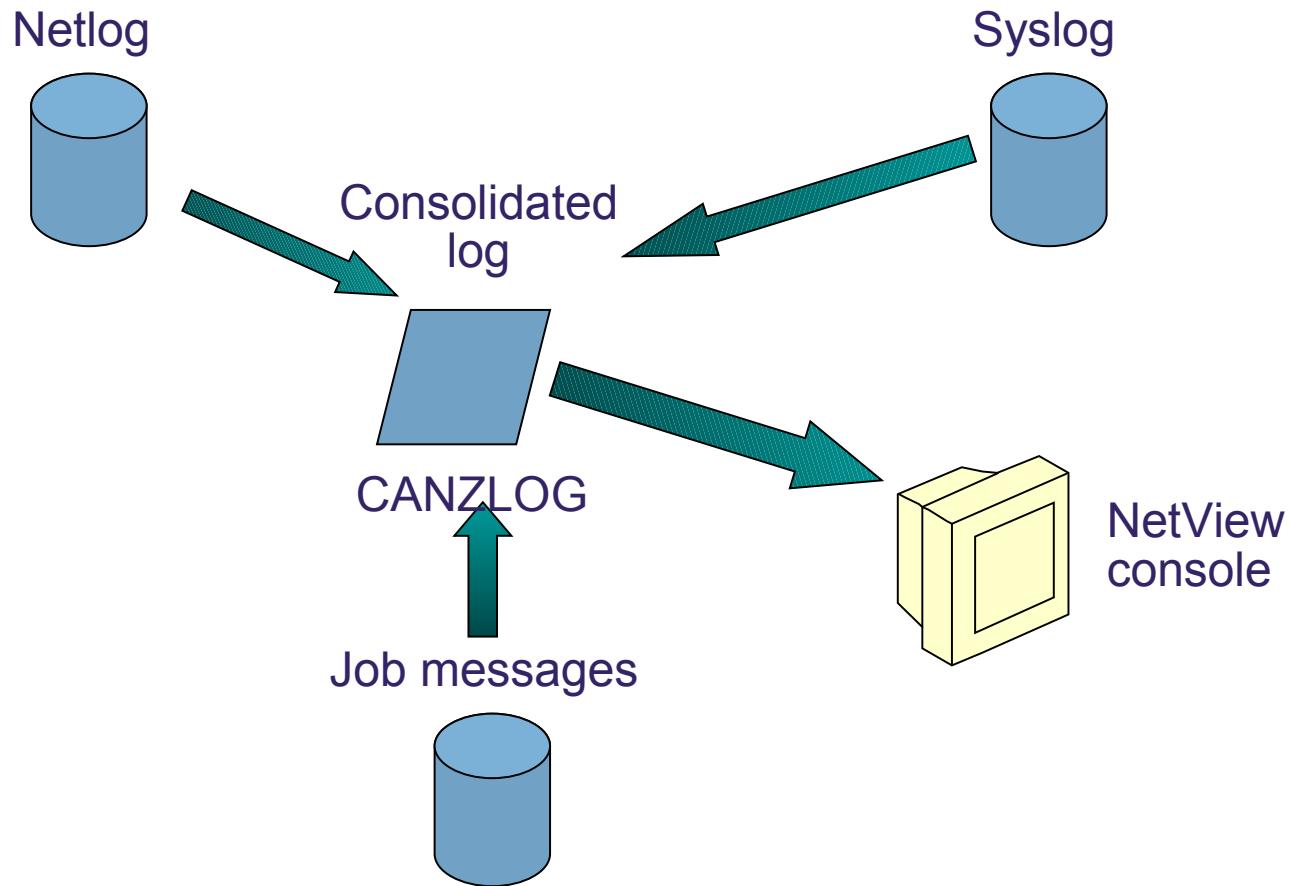
Friday
8:00   14056: Become an OMEGAMON Power User   Room 302
9:30   13824: Expert Stored Procedure Monitoring, Analysis and Tuning on z/OS   Room 305
11:00   14082: Enhance Capacity Analytics with Tivoli Decision Support for z/OS   Room 204

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Browsing Logs Prior to NetView V6.1

Netlog → NetView console

Syslog → System console

Job messages → ISPF
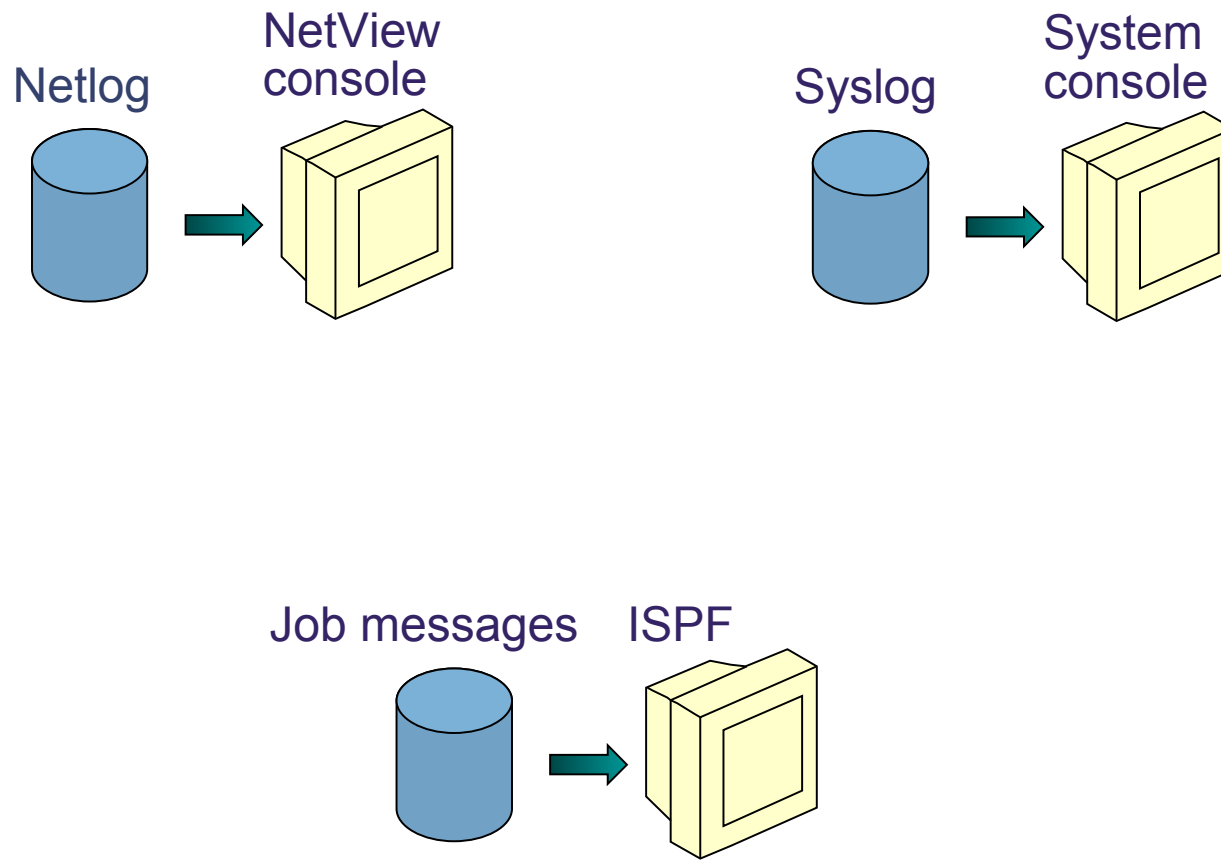
Log Browse with NetView V6.1

CANZLOG = **C**onsolidated **A**udit, **N**etView and **z**/OS **LOG**

Highlights

- Existing netlog and all UIs are preserved unchanged
- New dataspace to capture messages
  - Includes the usual NetView messages
  - Provides basis for browsing
  - All messages are available to automation
- Browse consolidated log
  - Filter by any message attribute or combination: msgID, jobname, route code, etc.
  - Define your own message attributes
  - Define and save sets of filter criteria, per operator or installation-wide
- Seamless archiving
- Share with IBM Service

Canzlog components to be aware of

- During IPL, 2GB data space created
  - But APAR OA38553 for TINYDS: limits data space to 500 MB
- One NetView instance per LPAR writes archives
- 3270 interface from BROWSE command
- REXX / Pipe API available

Browsing the log: `BROWSE` command

1. Command: `BROWSE CANZLOG`
   - no filtering occurs except for those filters specified with the `BROWSE` command.

Browsing the log: `BROWSE` command

2. Command: `BROWSE LOG` (PF5)
   - "`LOG`" means "use DEFAULTS/OVERRIDE settings"
   - `DEFAULTS` command selects standard view of the log

NetView V6R1 - 7E   Tivoli NetView   NTV7E NETOP1   07/31/13 14:25:05
T SYSID   ORIGIN
* NTV7E   NETOP1   list defaults
' NTV7E   NETOP1
DW0654I DISPLAY   DEFAULTS
          SLOGCMDR: YES
          CANZLOG: MVS & local NetView messages
          CZFORMAT: TIME

Part of LIST DEFAULTS display

Browsing the log: `BROWSE LOG` command

```
Canzlog    MVS & local NetView messages FILTER=LOG   07/31/13 14:20:45 -- 14:21:48
14:20:45 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
14:20:46 IST1411I  INOP GENERATED FOR EEL001
         IST1430I  REASON FOR INOP IS XID OR LDLC COMMAND TIMEOUT
         IST314I   END
14:20:46 IST259I   INOP RECEIVED FOR NMP181   CODE = 01
14:20:46 IST493I   VARY DIAL  FOR ID = NMP181   OVERRIDDEN BY SOFT INOP
14:20:46 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS
14:21:47 IST1411I  INOP GENERATED FOR EEL002
         IST1430I  REASON FOR INOP IS XID OR LDLC COMMAND TIMEOUT
         IST314I   END
14:21:47 IST259I   INOP RECEIVED FOR NMP130   CODE = 01
14:21:47 IST493I   SOFT INOP  FOR ID = NMP130   OVERRIDDEN BY SOFT INOP
14:21:47 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
14:21:47 IST590I   CONNECTOUT FAILED      FOR PU NMP130   ON LINE EEL002
14:21:47 IST621I   RECOVERY SUCCESSFUL    FOR NETWORK RESOURCE NMP130
14:21:48 IST1411I  INOP GENERATED FOR EEL000
         IST1430I  REASON FOR INOP IS XID OR LDLC COMMAND TIMEOUT
         IST314I   END
14:21:48 IST259I   INOP RECEIVED FOR NMP181   CODE = 01
14:21:48 IST493I   SOFT INOP  FOR ID = NMP181   OVERRIDDEN BY SOFT INOP
14:21:48 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS


CMD==> _
MA    A                                                           24/009
```

Browsing the log: `BROWSE LOG` command


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         IST314I    END
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14:21:47 IST621I   RECOVERY SUCCESSFUL     FOR NETWORK RESOUR
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14:21:48 IST493I   SOFT INOP   FOR ID = NMP181    OVERRIDDEN B  OFT INOP
14:21:48 IST619I   ID = NMP181    FAILED - RECOVERY IN PROG ESS
DWO672I Message * was issued at 07/31/13 14:21:48.159 by NTV7EPPT (NTV7E)
CMD==>
MA     A                                                              17/001
```

Filters

Timeframe

Additional info on selected message via F9 or WHENCE command

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Browsing the log: `CANZLOG` command


```
CNMKCZLG                    Specify Canzlog Filters

From:        _____    To:          _____

Tag:         _____    MSGID:       _____
Jobname:     _____    Jobid:       _____
ASID:        _____    ASType:      _____
Console:     _____    Route Code:  _____
Domain:      _____    System ID:   _____
AutoTok:     _____    Desc Code:   _____
AuthUser:    _____    AuthGroup:   _____
Opid:        _____
UCHARS:      _____
CHKey:       _____
WTOKey:      _____
Text - case sensitive; faster search:
_____
Text - case insensitive; slower search:
_____
Name:        _____    Remark:    _____


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
MA     A                                                      03/013
```

Filter to see only the data that's of interest

Browsing the log: `CANZLOG` command


```
Canzlog    TAG=(NVMSG,MVSMSG,DOM)                    07/31/13 14:28:46 -- 14:48:12
14:55:55 DSI020I You logged on, LARRY You're at NT7EL703 and I'm doing (DSIPROF
14:55:55 LOGPROF1
14:55:55 DSI083I You gotta hit enter for the *** now, Bud.
14:55:55 CNM357I PFKDEF : PF KEY SETTINGS NOW ESTABLISHED. 'DISPFK' TO SEE YOUR
14:55:55 HOLD
14:56:40 canzlog                                        Default filters
14:57:53 EZAOP50I TCPIP STATUS REPORT 613
         COUNT    TCPIP NAME    VERSION    STATUS
         -----    ----------    --------   ---------------------------------
             1    TCPIP         CS V1R12   ACTIVE
         *** END TCPIP STATUS REPORT ***
14:57:53 EZAOP41I 'DISPLAY TCPIP' COMMAND COMPLETED SUCCESSFULLY
14:57:53 DOM TCB
14:57:54 EZAOP50I TCPIP STATUS REPORT 616
         COUNT    TCPIP NAME    VERSION    STATUS
         -----    ----------    --------   ---------------------------------
             1    TCPIP         CS V1R12   ACTIVE
         *** END TCPIP STATUS REPORT ***
14:57:54 EZAOP41I 'DISPLAY TCPIP' COMMAND COMPLETED SUCCESSFULLY
14:57:54 DOM TCB
14:57:54 CNM493I CNMSDVDS : #0000025 : CNMEDVSV AUTO DSIIF004I DVSTAT PLEX1 02/

CMD==> _
MA      A                                                                  24/009
```

- The Canzlog with message tags. You can view all Canzlog data as far back as your archives go.

CANZLOG panel – msgID and time range


```
CNMKCZLG                 Specify Canzlog Filters

From:      '7/31/13 14:00:00'          To:        '07/31/13 15:00:00'

Tag:       _____           MSGID:     ist619_____
Jobname:   _____           Jobid:     _____
ASID:      _____           ASType:    _____
Console:   _____           Route Code:_____
Domain:    _____           System ID: _____
AutoTok:   _____           Desc Code: _____
AuthUser:  _____           AuthGroup: _____
Opid:      _____
UCHARS:    _____
CHKey:     _____
WTOKey:    _____
Text - case sensitive; faster search:

_____
Text - case insensitive; slower search:

_____
Name:      _____    Remark:    _____


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
MA   A                                                        05/061
```

- Filtering on IST619I, with time range

Messages meeting criteria

```
Canzlog  MSGID=ist619  FROM='7/31/13 14:00:00'  TO 07/31/13 14:18:09 -- 14:21:48
 14:18:09 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
 14:18:09 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS
 14:19:11 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
 14:19:11 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS
 14:20:45 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
 14:20:46 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS
 14:21:47 IST619I   ID = NMP130   FAILED - RECOVERY IN PROGRESS
 14:21:48 IST619I   ID = NMP181   FAILED - RECOVERY IN PROGRESS
*------------------------------- Bottom of Data -------------------------------*




















 CMD==> _
MA    A                                                                  24/009
```
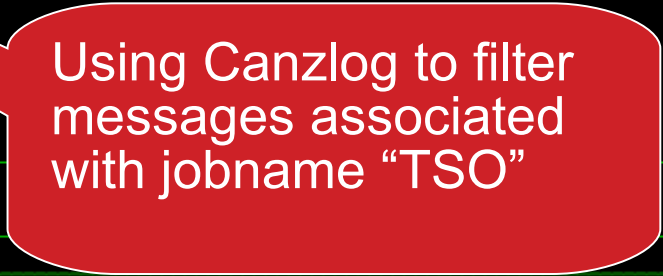
Filters make Canzlog a Joblog viewer


```
CNMKCZLG                    Specify  Canzlog  Filters

From:                    _____    To:                    _____

Tag:                     _____    MSGID:                 _____
Jobname:      TSO        _____    Jobid:                 _____
ASID:                    _____    ASType:                _____
Console:                 _____    Route Code:            _____
Domain:                  _____    System ID:             _____
AutoTok:                 _____    Desc Code:             _____
AuthUser:                _____    AuthGroup:             _____
Opid:                    _____
UCHARS:                  _____
CHKey:                   _____
WTOKey:                  _____
Text - case sensitive; faster search:
                         _____

Text - case insensitive; slower search:
                         _____

Name:          _____       Remark:        _____


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
```

Using Canzlog to filter messages associated with jobname "TSO"

- Alternative from command line: BROWSE CANZLOG JOBNAME=TSO

Browsing job messages

```
Canzlog   JOBNAME=tso   TAG=(NVMSG,MVSMSG)          05/30/13 15:18:54 -- 09:47:38
15:18:54 IKT005I TCAS IS INITIALIZED
15:29:27 LOGON
16:14:21 LOGON
11:03:14 LOGON
09:49:49 LOGON
19:31:49 LOGON
09:25:03 LOGON
09:44:09 $HASP100 TSO       ON STCINRDR
09:44:09 IEF695I START TSO        WITH JOBNAME TSO       IS ASSIGNED TO USER IBMUS
09:44:09 $HASP373 TSO       STARTED
09:44:09 IEF403I I started TSO fer ya.   It is TIME=09.44.09.   If not it is -.
09:44:09 IKT007I TCAS ACCEPTING LOGONS
09:44:09 IKT005I TCAS IS INITIALIZED
09:45:23 LOGON
09:47:16 $HASP100 TSO       ON STCINRDR
09:47:16 IEF695I START TSO        WITH JOBNAME TSO       IS ASSIGNED TO USER IBMUS
09:47:16 $HASP373 TSO       STARTED
09:47:16 IEF403I I started TSO fer ya.   It is TIME=09.47.16.   If not it is -.
09:47:16 IKT007I TCAS ACCEPTING LOGONS
09:47:16 IKT005I TCAS IS INITIALIZED
09:47:38 LOGON


CMD==> _

MA      A                                                                24/009
```

Messages filtered for jobname "TSO".

As many filter criteria as you want


```
CNMKCZLG                    Specify Canzlog Filters

From:        7/31/13 14:00               To:        7/31/13 15:00

Tag:                                     MSGID:
Jobname:     JES2                        Jobid:
ASID:                                    ASType:
Console:                                 Route Code:  7
Domain:                                  System ID:
AutoTok:                                 Desc Code:
AuthUser:                                AuthGroup:
Opid:
UCHARS:
CHKey:
WTOKey:
Text - case sensitive; faster search:

Text - case insensitive; slower search:

Name:          _____        Remark:


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
```

Filtering on job named "JES2" with route code 7 in a time range.

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As many filter criteria as you want

```
Canzlog   JOBNAME=jes2,ROUTCODE=7   FROM='7/31/13 1  07/31/13 14:16:32 -- 14:16:35
14:16:32 IEF236I ALLOC. FOR JES2 JES2
14:16:32 IEF237I 000D ALLOCATED TO PUN1
14:16:32 IEF236I ALLOC. FOR JES2 JES2
14:16:32 IEF237I 000C ALLOCATED TO RDR1
14:16:33 $HASP160 PUN1         INACTIVE - CLASS=BK
14:16:34 $HASP250 USER1 PURGED -- (JOB KEY WAS CBBCE517)
14:16:35 $HASP524 L1.JT1       INACTIVE
*------------------------------- Bottom of Data -------------------------------*












TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
MA       A                                                              24/009
```

- Results find 7 JES2 messages with Route Code 7 in the specified timeframe.

Filter for one thing, or another

```
CNMKCZLG                    Specify Canzlog Filters

From:        '6/30/13 14:00'           To:        '7/30/13 15:00'

Tag:         _____         MSGID:     (ief403i ief404i)
Jobname:     (tso pdsman vtam)         Jobid:     _____
ASID:        _____         ASType:    _____
Console:     _____         Route Code: _____
Domain:      _____         System ID: _____
AutoTok:     _____         Desc Code: _____
AuthUser:    _____         AuthGroup: _____
Opid:        _____
UCHARS:      _____
CHKey:       _____
WTOKey:      _____
Text - case sensitive; faster search:

Text - case insensitive; slower search:

Name:        _____         Remark:   _____
```

- OR condition for more than one value
- NOT (¬) also available

Data with one thing, or another

```
Canzlog  JOBNAME=(tso vtam pdsman),MSGID=(ief403i  07/03/13 12:13:14 -- 13:32:11
04:10:10 IEF404I TSO - ENDED - TIME=04.10.10
04:10:28 IEF404I PDSMANDB - ENDED - TIME=04.10.28
04:11:04 IEF404I PDSMAN - ENDED - TIME=04.11.04
04:13:54 IEF404I VTAM - ENDED - TIME=04.13.54
21:11:48 IEF403I VTAM - STARTED - TIME=21.11.48
21:11:55 IEF403I TSO - STARTED - TIME=21.11.55
04:10:10 IEF404I TSO - ENDED - TIME=04.10.10
04:14:13 IEF404I VTAM - ENDED - TIME=04.14.13
10:34:44 IEF403I VTAM - STARTED - TIME=10.34.44
10:34:52 IEF403I TSO - STARTED - TIME=10.34.52
*------------------------------- Bottom of Data -------------------------------*




TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
```

- Results show all the IEF403I and IEF404I messages for any of the 3 jobs during that time frame.

"I use certain filters frequently"


```
CNMKCZLG                  Specify Canzlog Filters

From:        '02/20/13 04:00:00'          To:          '2/24/13 04:00:00'

Tag:         _____  MSGID:       IEF352I
Jobname:     _____  Jobid:       _____
ASID:        _____  ASType:      _____
Console:     _____  Route Code:  _____
Domain:      _____  System ID:   _____
AutoTok:     _____  Desc Code:   _____
AuthUser:    _____  AuthGroup:   _____
Opid:        _____
UCHARS:      _____
CHKey:       _____
WTOKey:      _____
Text - case sensitive; faster search:
_____

Text - case insensitive; slower search:
_____

Name:        ALL352I_     Remark:      ALL IEF352I MSGS FROM 02/20-02/24/13_


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> SAVE TASK_
MA      A                                                            24/018
```

- TASK operand means the filter is available to this operator only: "private" filters.

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Your filter criteria saved (for a while)

```
Text - case insensitive; slower search:

Name:      ALL352I      Remark:      ALL IEF352I MSGS FROM 02/20-02/24/13

DWO091I ALL352I received. No operator data set defined for DSIOPEN.
CMD==>
```

- Result of SAVE: no DSIOPEN operator dataset, so ALL352I filter is discarded when operator logs off.
  - Until then, this operator can issue "`BR ALL352I`", return to same browse session
  - Alternative: `BROWSE ALL352I OPERID=AUTO1`
    - Finds the subset of ALL352I issued by AUTO1
    - Many other options

BROWSE ALL352I


```
Canzlog ALL352I ALL IEF352I MSGS FROM 02/20-02/24 02/22/13 15:24:44 -- 15:24:44
15:24:44 IEF352I ADDRESS SPACE UNAVAILABLE
*---------------------------------- Bottom of Data ----------------------------------*




















TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> _
MA      A                                                                    24/009
```

Quickly, subsystem status?
BROWSE ALL571I

- Navigation commands (FIND, BACK, TOP, etc.) respect the filter

"But ALL my people use these filters …"

```
CNMKCZLG                    Specify Canzlog Filters

From:          '06/01/13 00:00:01'          To:          '06/07/13 00:00:01'

Tag:           _____             MSGID:       AOF571I
Jobname:       _____             Jobid:       _____
ASID:          _____             ASType:      _____
Console:       _____             Route Code:  _____
Domain:        _____             System ID:   _____
AutoTok:       _____             Desc Code:   _____
AuthUser:      _____             AuthGroup:   _____
Opid:          _____
UCHARS:        _____
CHKey:         _____
WTOKey:        _____
Text - case sensitive; faster search:
_____
Text - case insensitive; slower search:
_____
Name:          ALL571I        Remark:       ALL AOF571I MSGS FROM 06/01-06/07/13


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>  SAVE COMMON
```

- COMMON operand
  - means all operators can see/use this filter: "public" filters
  - requires authorization

What filters are defined? LIST CZFILTER


```
NetView V6R1 - 7E          Tivoli NetView    NTV7E LARRY    02/28/13 16:43:54
T SYSID      ORIGIN
' NTV7E      LARRY
 CANZLOG FILTERS
 Task
 ALL352I     ALL IEF352I MSGS FROM 02/20-02/24/13
 Common
 NETLOG      Similar to old NETLOGx
 MVSMSGS     MVS (z/OS) messages
 NVMVS       MVS & local NetView messages
 NVMSGS      Local NetView messages
 ACTMSGS     Action messages and DOMs
 DOMS        DOMs
 HISTORY     IPL
------------------------------------------------------------------------


=X= ***

MA  A                                                               23/001
```

- Your TASK filters
- All COMMON filters (including built-ins: NETLOG thru DOMS)

"I need to tweak my named filter …"


```
CNMKCZLG                Specify Canzlog Filters

From:                                   To:

Tag:            _____     MSGID:
Jobname:        _____     Jobid:          _____
ASID:           _____     ASType:         _____
Console:        _____     Route Code:     _____
Domain:         _____     System ID:      _____
AutoTok:        _____     Desc Code:      _____
AuthUser:       _____     AuthGroup:      _____
Opid:           _____
UCHARS:         _____
CHKey:          _____
WTOKey:         _____
Text - case sensitive; faster search:
_____
Text - case insensitive; slower search:
_____
Name:       all352i      Remark:

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
MA    A                                                    20/013
```

Enter name only to fetch saved filter

- No edits of built-in filters

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Filter is displayed – now edit

```
CNMKCZLG                    Specify Canzlog Filters

From:        '02/20/13 04:00:00'        To:           '02/24/13 04:00:00'

Tag:         _____  MSGID:        IEF352I
Jobname:     _____  Jobid:        _____
ASID:        _____  ASType:       _____
Console:     _____  Route Code:   2_____
Domain:      _____  System ID:    _____
AutoTok:     _____  Desc Code:    _____
AuthUser:    _____  AuthGroup:    _____
Opid:        _____
UCHARS:      _____
CHKey:       _____
WTOKey:      _____
Text - case sensitive; faster search:
_____
Text - case insensitive; slower search:
_____
Name:        ALL352I        Remark:        ALL IEF352I MSGS FROM 2/20-2/24/13


TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
MA      A                                                                08/055
```

[ENTER] to just use the altered filter

- Subcommand REPLACE will save changed filter

Message details?

Details about the selected message

```
CNMKCZMD OUTPUT FOR  IEF352I              Time: 02/22/13 15:24:44.252

CzID: 16843985 010104D1x    AutoTime: 6 msec        DomTime: none
JobName: LLA                DestConsole:            AutoToken:
Tags: MVS
Flags: Auth
CHkey: LLA                  SystemID: NMPIPL02       JobID:
SmsgID: 00000E24x           ASID: 0019x             DomToken: 00000000x
AStype: S                   AuthUser: IBMUSER        AuthGroup: SYS1
Mtype: E (C5x)

DescCodes: 0400 (6)
RouteCodes:  402000000000000000000000000000000
             (2, 11)

IEF352I ADDRESS SPACE UNAVAILABLE




TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>  _
MA   A                                                          24/009
```

- DomTime: none (no DOM matched by NetView)
- AStype: S (started task)
- AuthUser: IBMUSER (from ACEE)

Message with long text

```
CNMKCZMD OUTPUT FOR  IEF695I                   Time: 07/11/13 10:47:01.879

CzID: 16858987 01013F6Bx    AutoTime: 1 msec        DomTime: none
JobName: T620EENV           DestConsole:            AutoToken:
Tags: MVSMSG
Flags: MRT, Suppr, Auth
CHkey: NV                   SystemID: NMPIPL02       JobID: STC01088
SmsgID: 00000D1Cx           ASID: 001Cx              DomToken: 00000000x
AStype: S                   AuthUser: IBMUSER        AuthGroup: SYS1
Mtype: E (C5x)


DescCodes: 0400 (6)
RouteCodes: 00200000000000000000000000000000
           (11)


IEF695I START T620EENV WITH JOBNAME T620EENV IS ASSIGNED TO USER IBMUSER , GROU




Text truncated, enter SHOWTEXT (PF2) to view
CMD==> _
MA    A                                                                24/009
```

Full text of truncated message

```
CNMKWIN  Full message text, CzID=+16858987           from 0 in 2
*----------------------------------------------------------------------*
   IEF695I START T620EENV WITH JOBNAME T620EENV IS ASSIGNED TO USER IBMUSER ,
   GROUP SYS1
*----------------------------------------------------------------------*




















 CMD==>  _
 MA    A                                                        24/009
```

Attributes reported

- ASID: Address space ID.
- AStype: Indicates how the address space was started
- AuthGroup: z/OS ACEE group ID (ACEEGRPN), if available
- AuthUser: z/OS ACEE user ID (ACEEUSRI), if available
- AutoTime: Milliseconds from issue and submission to automation
- AutoToken: z/OS automation token.
- CHkey: z/OS CHKEY, from IEECHAIN.
- CzID: Canzlog identifier.
- DescCodes: z/OS descriptor code.
- DestConsole: z/OS destination console name.
- Domain: NetView domain name.
- DomTime: Seconds between issue and DOM, if applicable.
- DomToken: a 4-byte token to identify a Delete Operator Msg
- DOMtype: type of DOM - token, TCB, ASID or SMID
- AMRFnRt: AMRF does not retain.
- Auth: Issuer was authorized.
- AuthR: NetView authorized receiver message (IFRAUAUT)
- Copy: NetView copy message (IFRAUCPY).
- MRT: exposed to the Message Revision Table (MRT).
- PPT: NetView PPT message (IFRAUPPT).

Attributes reported (cont.)

- Pri: NetView primary routing message (IFRAUPRI).
- Suppr: suppressed; message not displayed
- Sec: NetView secondary routing message (IFRAUSEC).
- Transl: NetView translated message (IFRAUNLM).
- JobID: identifier assigned by JES, AKA job number.
- JobName: z/OS job name.
- MsgTime: for some DOMs, the local time of the associated message
- MsgsMatch: for some the number of messages matched by NetView.
- Mtype: the NetView program's HDRMTYPE
- OperID: NetView task/operator name.
- ReplyID: reply ID at the start of a WTOR.
- RouteCodes: z/OS route codes.
- SmsgID: system message ID. For DOMS, multiples
- SystemID: z/OS system ID.
- Audit: for audit purposes, such as internal commands.
- Bcast: z/OS broadcast to active consoles applies.
- CmdEcho: command echo.
- Del: message was requested to be deleted.
- DOMexp: issuer promised a DOM.

Attributes reported (cont.)

- MVS: logged at the z/OS subsystem interface.
- NV: originated in the NetView program.
- Trace: intended for tracing purposes, such as debug messages.
- TCBaddr: Task Control Block (TCB) address.
- Time: associated date and time.
- Uchars: user-defined or installation-defined characters.
- WTOkey: key field from the WTO macro, WQEKEY

Other ways to browse the Canzlog

- **`BROWSE <named filter>`**

  - <named filter> can be any of the named filters provided by NetView or created by the user

- **`BROWSE <named filter> <any text> FROM <date/time> TO <date/time>`**

  - Use filters in combination

Canzlog Archive

- Message (data) data sets
  - Fixed record length and blocked sequential data sets
  - Contain raw Canzlog data.
  - 8 MB each, reachable only within NetView.
- Index data sets
  - Fixed record length and blocked sequential data sets
  - Contain records describing message data sets in the archive.
  - Each contains no more than 4096 80-byte records.
  - Each record describes one message data set.
- One primary index data set
  - Fixed record length and blocked sequential data set
  - Describes the index data sets in the archive.
  - Contains one 80-byte record for each index data set created in the archive.
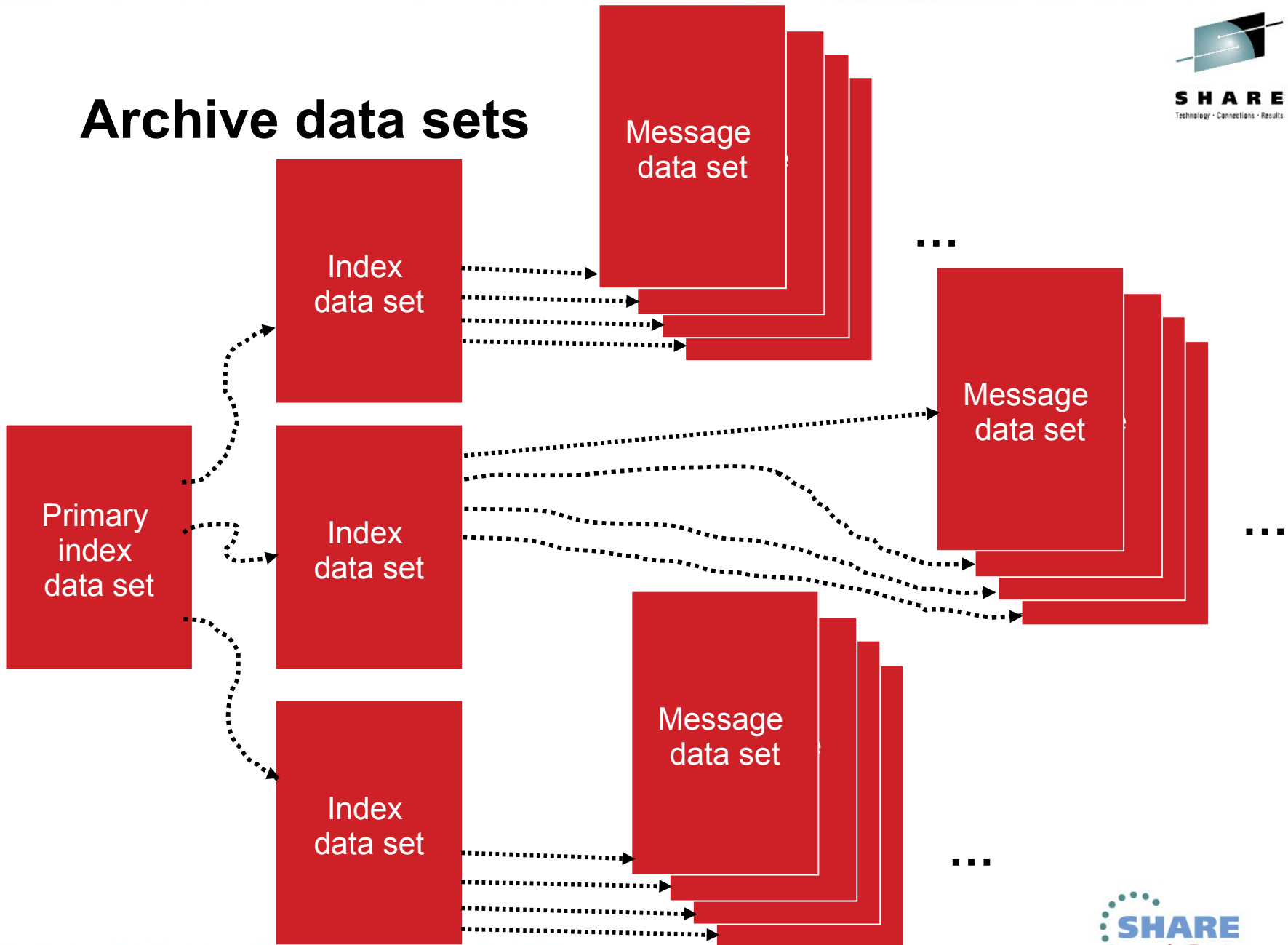
Archive data sets

Archive data sets
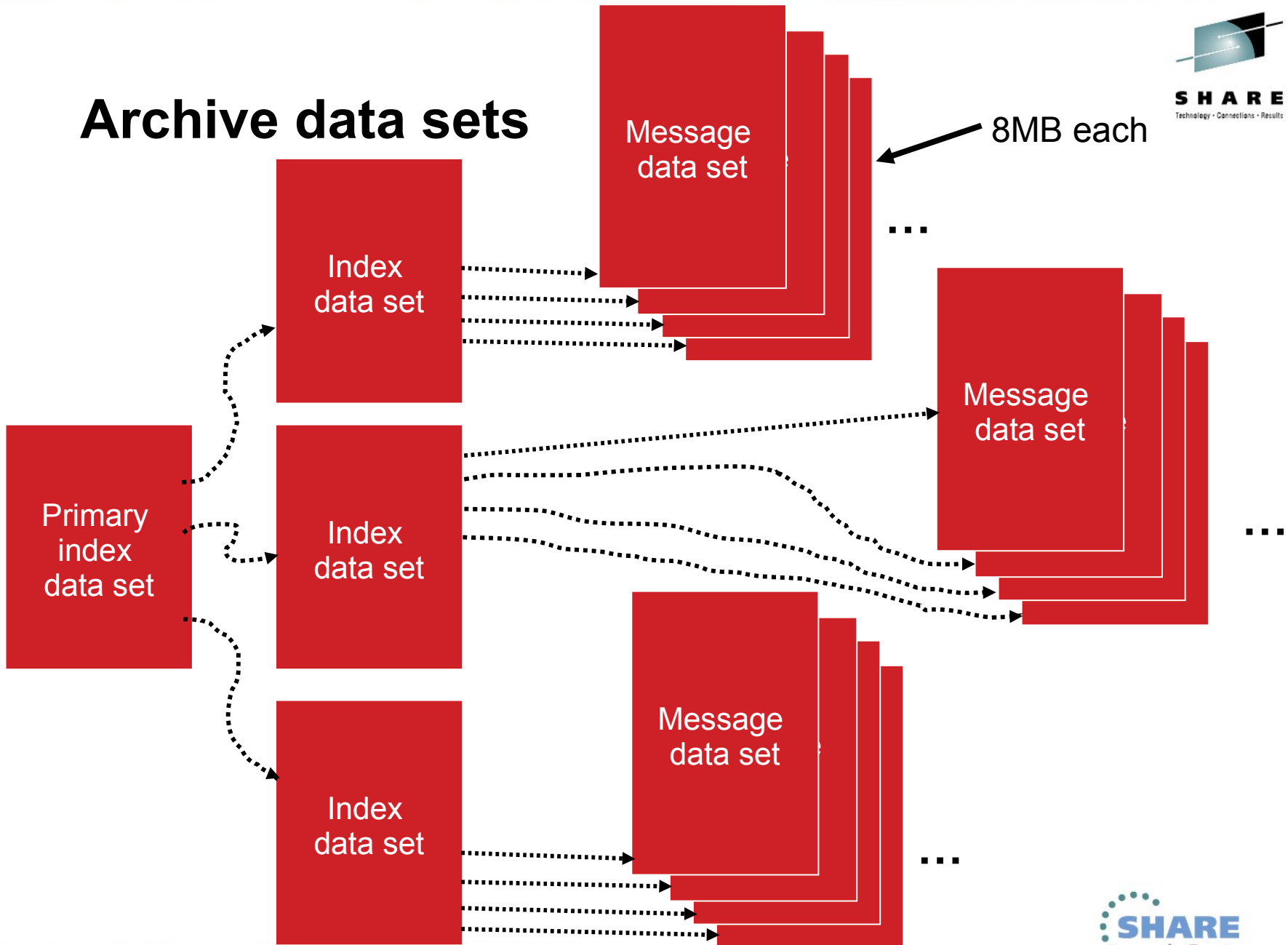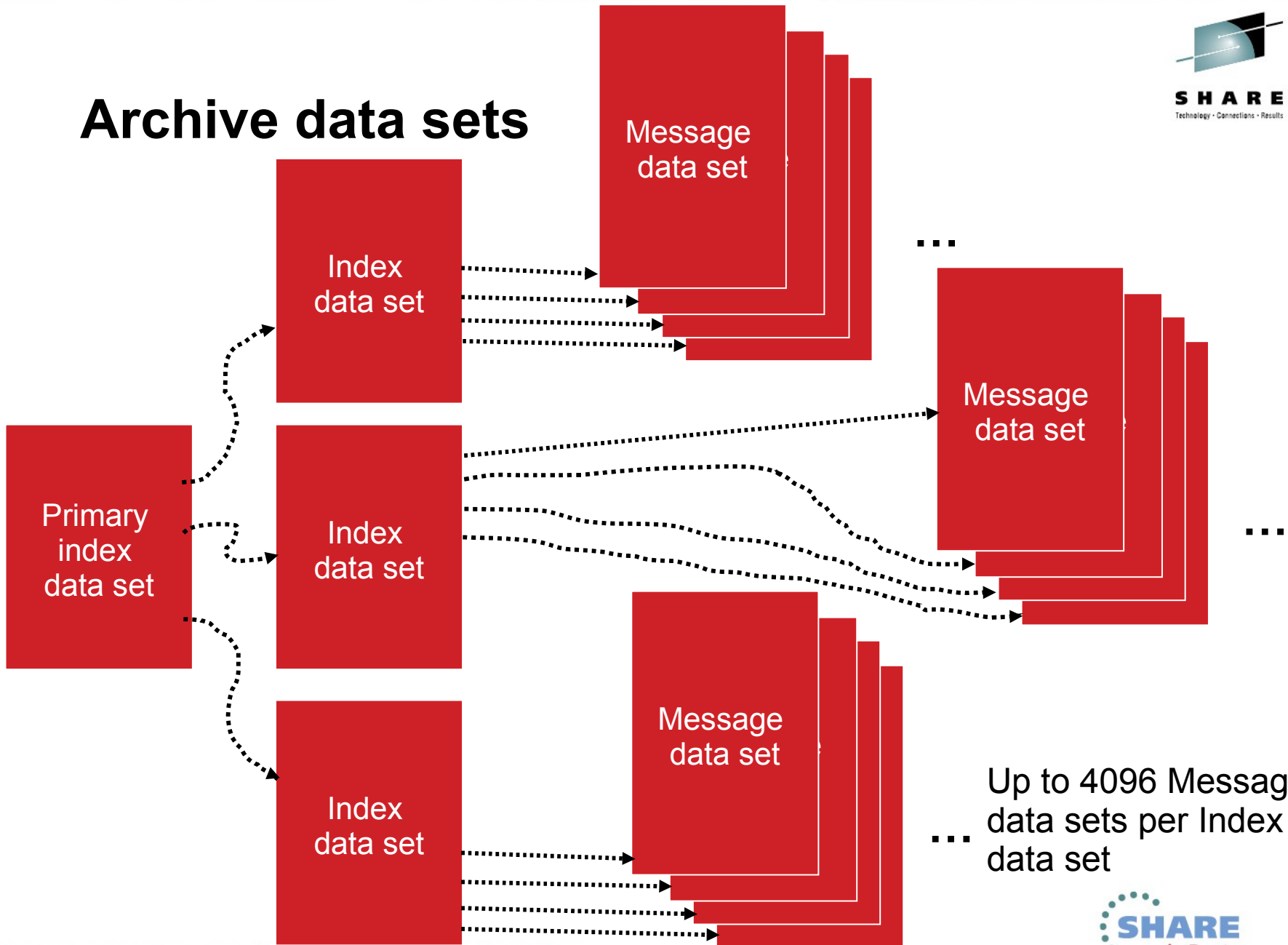
Up to 4096 Message data sets per Index data set

Only a few Archive statements really needed

```
styleMsg = AOS0000I CNMSTYLE setting
  Canzlog

ARCHIVE.HLQ = <high-level qualifier>

ARCHIVE.WRITE = Yes

ARCHIVE.BROWSE.DATASPACES = 1
```

- Here, a message definition and 3 Archive stylesheet statements for CANZLOG.

Only a few Archive statements really needed

```
styleMsg = AOS0000I CNMSTYLE setting
  Canzlog
ARCHIVE.HLQ = <high-level qualifier>
ARCHIVE.WRITE = Yes
ARCHIVE.BROWSE.DATASPACES = 1
```

- Here, a message definition and 3 Archive style sheet statements for CANZLOG.

- First statement sets high-level qualifier for the archives.

Only a few Archive statements really needed

```
styleMsg = AOS0000I CNMSTYLE setting Canzlog

ARCHIVE.HLQ = <high-level qualifier>

ARCHIVE.WRITE = Yes

ARCHIVE.BROWSE.DATASPACES = 1
```

- Here, a message definition and 3 Archive style sheet statements for CANZLOG.

- First statement sets the high-level qualifier for the archives.

- Second says "This NetView is allowed to write to Canzlog archive."

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Only a few Archive statements really needed

```
styleMsg = AOS0000I CNMSTYLE setting Canzlog
ARCHIVE.HLQ = <high-level qualifier>
ARCHIVE.WRITE = Yes
ARCHIVE.BROWSE.DATASPACES = 1
```

- Here, a message definition and 3 Archive style sheet statements for CANZLOG.
- First statement sets the high-level qualifier for the archives.
- Second says "This NetView is allowed to write to Canzlog archive."
- Third indicates max number of data spaces NetView will use for browsing archived Canzlog data. Default value is 1.

Other Archive statements to consider

`ARCHIVE.MESSAGE.DATACLAS` = data_class_name or *NONE*

`ARCHIVE.MESSAGE.STORCLAS` = storage_class_name or *NONE*

`ARCHIVE.MESSAGE.MGMTCLAS` = management_class_name

`ARCHIVE.MESSAGE.VOLUMES` = volser1 volser2 ... volser10

`ARCHIVE.MESSAGE.UNIT` = unit_name

`ARCHIVE.MESSAGE.BLOCKSIZE` = nnnnn

`ARCHIVE.MESSAGE.SPACE` = units primary secondary

And similar statements for `ARCHIVE.INDEX.`

The action of your ARCHIVE statements

- Once you add the ARCHIVE statements to your CNMSTYLE, use RESTYLE or recycle the NetView proc and the following datasets will be allocated automatically:

  <user-definedHLQ>.DXyymmdd.HRhh

  <user-definedHLQ>.NV.CANZLOG.INDEX

  Note: date/hour are in UTC

- These datasets will have the following attributes:
  - Record format: FB
  - Record length: 80
  - Block size: 27920 (user selectable)

What happens at NetView close?

- About 240K – 280K messages are unwritten to allow updates
- NetView writes this backlog to the archive only when the NetView with archiving duty goes down.
- Example:

<1 second

```
DSI017I CLOSE COMMAND ACCEPTED
IEF196I IGD101I SMS ALLOCATED TO DDNAME (CANZLOG )
IEF196I    DSN (SYS1.T1.TSS510.CZ110608.T182709 )
IEF196I    STORCLAS (SYS1000) MGMTCLAS (MCNACT) DATACLAS (ADDDSORG)
IEF196I    VOL SER NOS= ARCH02
IEF196I IGD104I SYS1.T1.TSS510.CZ110608.T182709 RETAINED,
IEF196I DDNAME=CANZLOG
IEF196I IGD103I SMS ALLOCATED TO DDNAME SYS01062
```

But CANZLOG CUE

- New keyword on CANZLOG command

- Forces recent messages to be written from the Canzlog data space to the Canzlog archive files.

- You might want to do this if …
  - these files need to be updated for transfer, or
  - NetView is about to be stopped using a method other than the z/OS STOP command or the NetView CLOSE command. (Those two commands both cause messages to be archived automatically.)

- Available with APAR OA37348
  http://www-01.ibm.com/support/docview.wss?uid=swg1OA37348

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The TSO view of your archive

```
  Menu   Options   View   Utilities   Compilers   Help

DSLIST - Data Sets Matching SYS1.T1.TSS510*                    Row 1 of 12
Command ===> _                                             Scroll ===> PAGE

Command - Enter "/" to select action              Message              Volume
-------------------------------------------------------------------------------
        SYS1.T1.TSS510.CZ110523.T215249                                ARCH02
        SYS1.T1.TSS510.CZ110526.T201541                                ARCH02
        SYS1.T1.TSS510.CZ110529.T210952                                ARCH01
        SYS1.T1.TSS510.CZ110531.T153822                                ARCH01
        SYS1.T1.TSS510.CZ110601.T153740                                ARCH01
        SYS1.T1.TSS510.CZ110602.T152200                                ARCH01
        SYS1.T1.TSS510.CZ110605.T103300                                ARCH02
        SYS1.T1.TSS510.CZ110606.T133430                                ARCH01
        SYS1.T1.TSS510.CZ110608.T181556                                ARCH02
        SYS1.T1.TSS510.CZ110608.T182709                                ARCH02
        SYS1.T1.TSS510.DX110209.HR21                                   ARCH01
        SYS1.T1.TSS510.NV.CANZLOG.INDEX                                ARCH02
***************************** End of Data Set list *****************************
```

Primary index data set

- Datasets contain raw Canzlog data. Not readable in TSO. The only way to view the data is from NetView BROWSE or output from REXX / Pipe API.

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The TSO view of your archive

```
 Menu   Options   View   Utilities   Compilers   Help
_____
DSLIST - Data Sets Matching SYS1.T1.TSS510*           Row 1 of 12
Command ===> _                                      Scroll ===> PAGE

Command - Enter "/" to select action          Message       Volume
------------------------------------------------------------------
      SYS1.T1.TSS510.CZ110523.T215249                      ARCH02
      SYS1.T1.TSS510.CZ110526.T201541                      ARCH02
      SYS1.T1.TSS510.CZ110529.T210952                      ARCH01
      SYS1.T1.TSS510.CZ110531.T153822                      ARCH01
      SYS1.T1.TSS510.CZ110601.T153740                      ARCH01
      SYS1.T1.TSS510.CZ110602.T152200                      ARCH01
      SYS1.T1.TSS510.CZ110605.T103300                      ARCH02
      SYS1.T1.TSS510.CZ110606.T133430                      ARCH01
      SYS1.T1.TSS510.CZ110608.T181556                      ARCH02
      SYS1.T1.TSS510.CZ110608.T182709                      ARCH02
      SYS1.T1.TSS510.DX110209.HR21                         ARCH01
      SYS1.T1.TSS510.NV.CANZLOG.INDEX                      ARCH02
*********************** End of Data Set list ***********************
```

Index data set (could be >1)

- Datasets contain raw Canzlog data. Not readable in TSO. The only way to view the data is from NetView BROWSE or output from REXX / Pipe API.

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The TSO view of your archive

```
 Menu   Options   View   Utilities   Compilers   Help
───────────────────────────────────────────────────────────────
DSLIST - Data Sets Matching SYS1.T1.TSS510*              Row 1 of 12
Command ===> _                                          Scroll ===> PAGE

Command - Enter "/" to select action           Message        Volume
───────────────────────────────────────────────────────────────
    SYS1.T1.TSS510.CZ110523.T215249                       ARCH02
    SYS1.T1.TSS510.CZ110526.T201541                       ARCH02
    SYS1.T1.TSS510.CZ110529.T210952                       ARCH01
    SYS1.T1.TSS510.CZ110531.T153822                       ARCH01
    SYS1.T1.TSS510.CZ110601.T153740                       ARCH01
    SYS1.T1.TSS510.CZ110602.T152200                          1
    SYS1.T1.TSS510.CZ110605.T103300                          2
    SYS1.T1.TSS510.CZ110606.T133430                          1
    SYS1.T1.TSS510.CZ110608.T181556                       ARCH02
    SYS1.T1.TSS510.CZ110608.T182709                       ARCH02
    SYS1.T1.TSS510.DX110209.HR21                          ARCH01
    SYS1.T1.TSS510.NV.CANZLOG.INDEX                       ARCH02
********************** End of Data Set list **********************
```

Message data sets

All times are UTC

- Datasets contain raw Canzlog data. Not readable in TSO. The only way to view the data is from NetView BROWSE or output from REXX / Pipe API.

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What's happening in Canzlog? `LIST STATUS=CANZLOG`

```
NetView V6R1 - 7E          Tivoli NetView      NTV7E LARRY      02/28/13 16:48:31
 T SYSID     ORIGIN
 * NTV7E     LARRY      list status=canzlog
 ' NTV7E     LARRY
 CNM600I Canzlog status: Active
 Total messages, this IPL: 4959
 Average Message Rate, prior minute: 345
 Data available from 01/15/13 14:51:34 at HLQ=TOM
 For system NMPIPL02 archiving running at subsystem T620
 ------------------------------------------------------------------------------------




















 >>>

___
 MA      A                                                                   23/001
```

- Command provides information on Canzlog, such as:
  - Is it active?
  - How many messages since IPL?
  - From what date / time is data available?
  - Which NetView is archiving?

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Other FAQs about Canzlog

Q: Does Canzlog include suppressed messages? If so, can it be customized to remove them?

A: Suppressed messages ARE included. Even deleted/non-logged messages are included, if they are automatable. No, they cannot be removed.

Q: If the MRT changes a messages, what is displayed in the Canzlog? The "before"? The "after"? Both?

A: For each command echo, an audit record is written prior to MRT processing. All other records are "as modified" after MRT.

Q: Can a Canzlog be exported and sent to IBM Support, like the netlog?

A: Yes, instructions for doing this are included in the *Troubleshooting Guide.*

Q: If 2 NetViews are running on the same system, do they both feed the Canzlog?

A: Each feeds its own NetView messages. There is only one copy of any given message, with an exception for audit/command echoes.

Q: How does Canzlog handle archives that have been stored on tape? Does it issue a mount request? Does it wait?

A: Canzlog looks only in its internal indexes and on the user-defined HLQ. Data on tape is just missing; I/O errors are generated.

Summary

- CANZLOG brings together syslog, netlog, job messages
- Very robust, flexible filtering
  - Any message attribute or combination
    - "What happened over the weekend?"
    - "Show me all the IEF123 messages."
    - "I need to see all the ABC* and DEF* messages from jobs JOB1 and JOB2 during first shift last Tuesday with descriptor code 2."
  - Scope
    - Common: available to all operators (subject to authorization check)
    - Task: available only to operator who defined them
  - Actions
    - Save: save filter to storage and on disk
    - Replace: replace an existing filter in storage and on disk
    - Delete: delete filter from storage and disk
- Seamless archiving and retrieval
- Export to IBM Service

More Information

- NetView website
  http://www.ibm.com/software/tivoli/products/netview-zos/
- NetView customer forum
  http://tech.groups.yahoo.com/group/NetView/
- NetView wiki
  https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli+System+z+Monitoring+and+Application+Management/page/Tivoli+NetView+for+zOS
- NetView media gallery
  https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli+System+z+Monitoring+and+Application+Management/page/Media+Gallery+for+Tivoli+NetView+for+zOS
- NetView documentation
  https://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Tivoli+NetView+for+zOS

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