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Better, stronger, faster; The Mainframe….. the Machine!

NetView New Functions

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Session EJ




Agenda

- Canzlog: Dynamic Data Space Size
- Canzlog Print
- Command Statistics

Canzlog: dynamic data space size

Canzlog: Dynamic Data Space Size

- APARs OA55071 and OA55074

- Request:
  - Provide the ability to define a smaller than 500M (TINYDS) Canzlog data space

- Enhancements:
  - Provide the capability for the Canzlog data space size to be as small as 128M provided that automation keeps up.
  - IPL will not be required.

Canzlog Dynamic Data Space Size Before and After

- Original Design:
  - Canzlog data space, CNMCANZ0, has one of two fixed sizes:
    - 500M (TINYDS)
    - 2G
  - The concern with providing fixed sizes lower than 500M for the Canzlog data space is that messages might be written faster than they can be read and sent to automation.

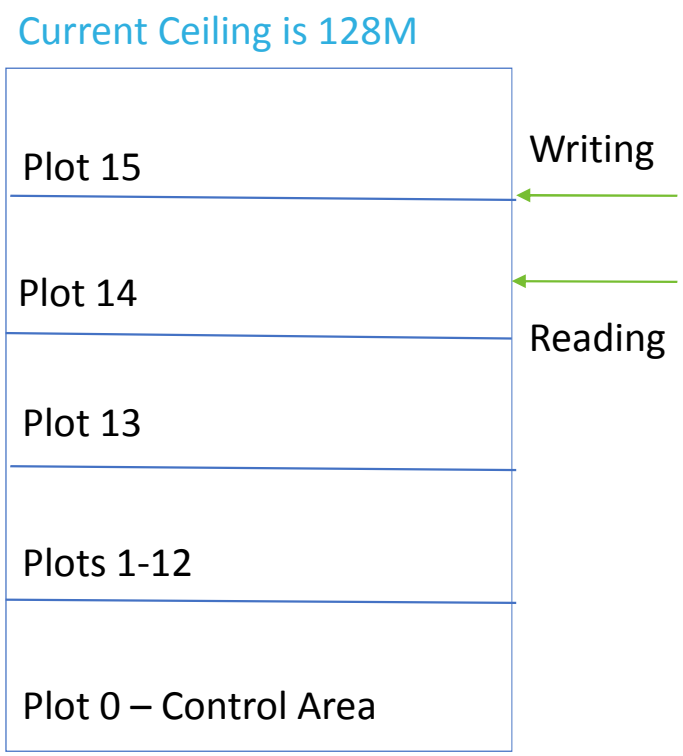
- With These APARs:
  - Start out with a data space size of 128M
  - If insertion of messages into the Canzlog data space does not threaten to overlay messages being read, it is possible that the data space size will be no larger than 128M
  - However, if messages are “getting close” to being overlaid, then the data space will be expanded by 8M (a single plot) at a time up to the maximum of TINYDS or 2G

Definitions

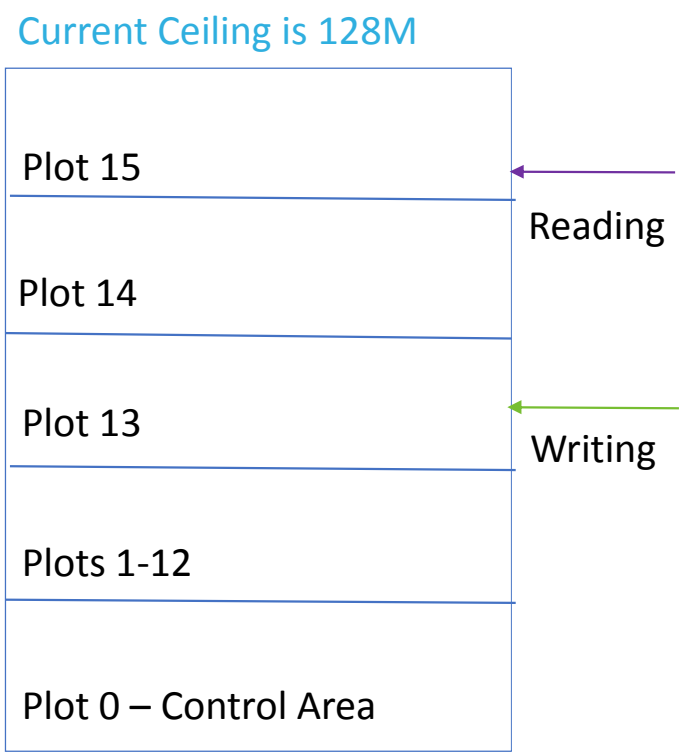
- Plot – 8M
  - Numbered 0 to 255 for 2G
  - Numbered 0 to 63 for TINYDS
  - Numbered 0 to size/8 for other sizes

- “Reading” – The location, including plot number, from which the NetView CNMCSSIR task is currently reading messages to be presented to automation

- “Writing” – The location, including plot number, to which messages are being written in the data space



Before the first wrap.



After the first wrap, potential for writing to catch up with reading.

- "Reading" is always behind "writing" initially
- Once "writing" reaches the "current ceiling" the first time and wraps is where the potential for messages to get overlaid occurs.

Canzlog Configuration – IEFSSNxx Before and After

- Today:
  - SUBSYS SUBNAME(T621) INITRTN(DSI4LSIT) or
  - SUBSYS SUBNAME(T621) INITRTN(DSI4LSIT) INITPARM('TINYDS')
- With These APARs:
  - Existing configuration can still be used with no changes
  - New keywords for INITPARM (not positional)
    - FULLDS – 2G (default)
      - Optional
    - STATIC or DYNAMIC – Defines whether the data space size is fixed or not
      - STATIC – Fixed and is the default
      - DYNAMIC – Data space size starts at 128M and can go to the maximum size of TINYDS or FULLDS
    - Examples:
      - SUBSYS SUBNAME(T621) INITRTN(DSI4LSIT) INITPARM('TINYDS,DYNAMIC')
      - SUBSYS SUBNAME(T621) INITRTN(DSI4LSIT) INITPARM('STATIC,FULLDS')

Canzlog Configuration - SkipLevel

- MVSPARM.Msg.Automation.SkipLevel = *stresslevel*
  - Allows you to skip past messages depending on the stress level
  - Stress level indicates how close “in plots” the “writing” is to the “reading”
    - 1: Mild Stress – “reading” is behind by a whole plot (approximately 32,000 messages)
    - 2: Stressed – Only one clear plot is available between “writing” and “reading”. Expansion is imminent.
    - 3: Constrained – Only one clear plot is available between “writing” and “reading” but expansion is impossible as the TINYDS or FULLDS ceiling has been reached.
    - 4: Severe – No clear plots between “writing” and “reading”. This only occurs when the ceiling is at TINDY or FULLDS.
    - 5: Critical – “Writing” is in the same plot as “reading” – message loss and thus, automation loss, is imminent

- MVSPARM.Msg.Automation.SkipGap = *plots*
  - Specifies the number of plots to skip, including the current plot, that you want task CNMCSSIR (the “reader”) to skip ahead based on the specified stress level

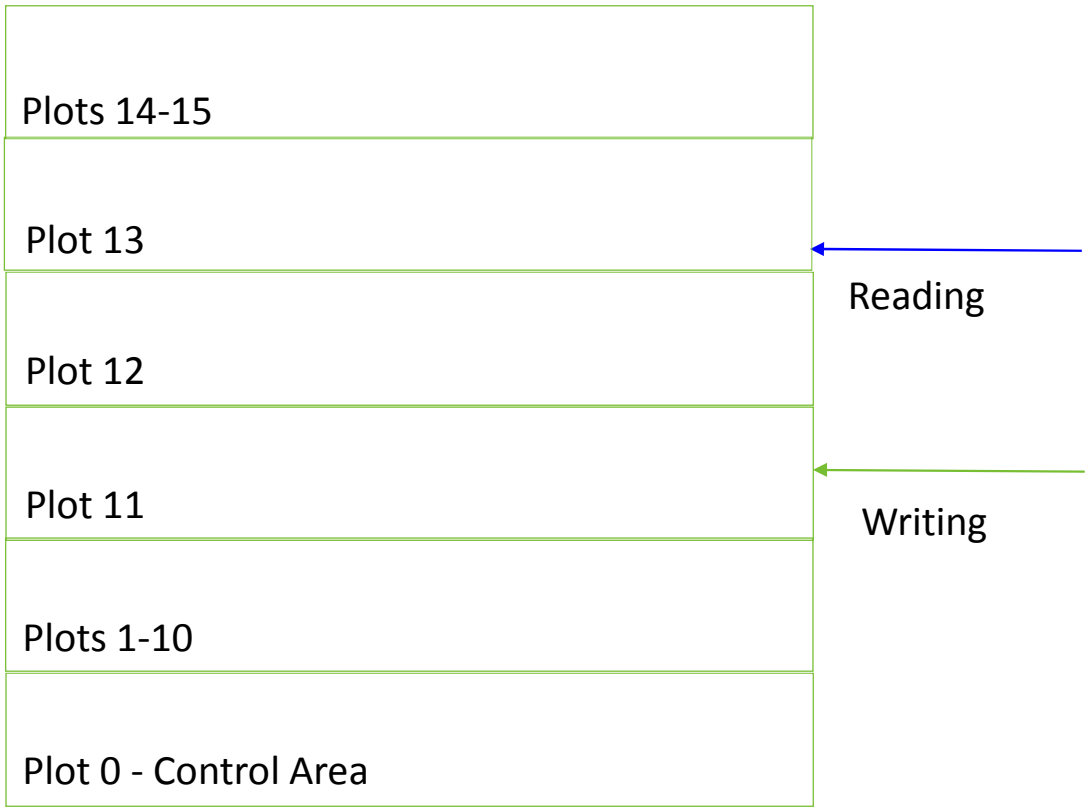
- What does SkipGap mean related to the skip level value?

  - MVSPARM.Msg.Automation.SkipLevel = 1-4
    - If no SkipGap is configured, then NetView will automatically move the “reading” to the next plot
    - If SkipGap is too small and cannot get you into the next plot, NetView will skip to the next plot.

  - MVSPARM.Msg.Automation.SkipLevel = 5
    - If no SkipGap is configured, then NetView will automatically move the “reading” to the next plot after "writing".
    - If SkipGap is too small and cannot get you into the next plot, NetView will skip to the next plot after "writing".
    - If SkipGap is too large, NetView will skip to where “writing” is occurring
    - Even if you are keeping “static” configuration, SkipGap rules will apply for stress level 5

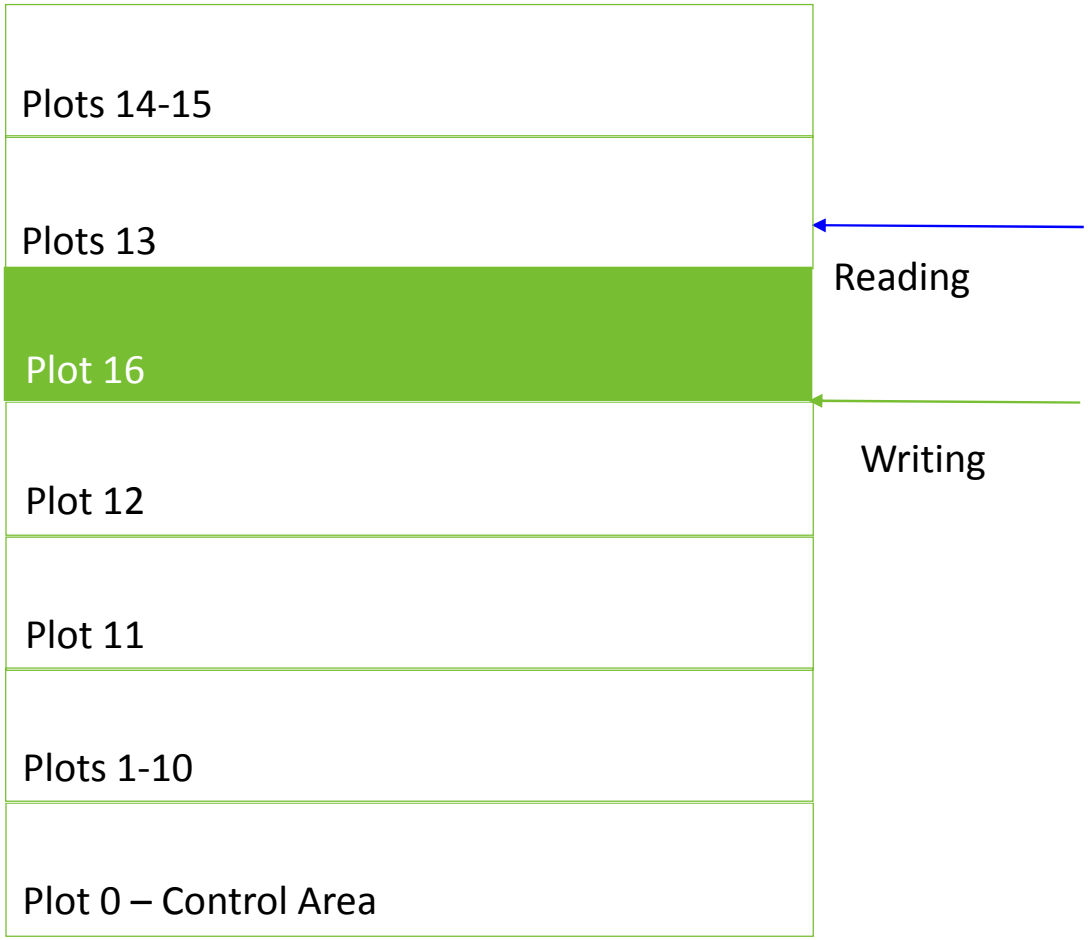
- Additional information is being added to the LISTS STATUS=CANZLOG output

```
NetView V6R2M1 - NM      Tivoli NetView   NTVAF NETOP1                    08/10/18 17:12:03 A
* NTVAF    LIST STATUS=CANZLOG
' NTVAF
CNM600I Canzlog status: Active
Total messages, this IPL: 430224
Average Message Rate, prior minute: 4
Buffering available for about 2016 thousand messages
Max storage: 512 megabytes
Current storage: 512 megabytes
Stress level: 0
Skip level: 5
Skip gap: 1
Data available from 07/25/18 14:50:12 at HLQ=
For system NMPIPL47 archiving running at subsystem *none*
```



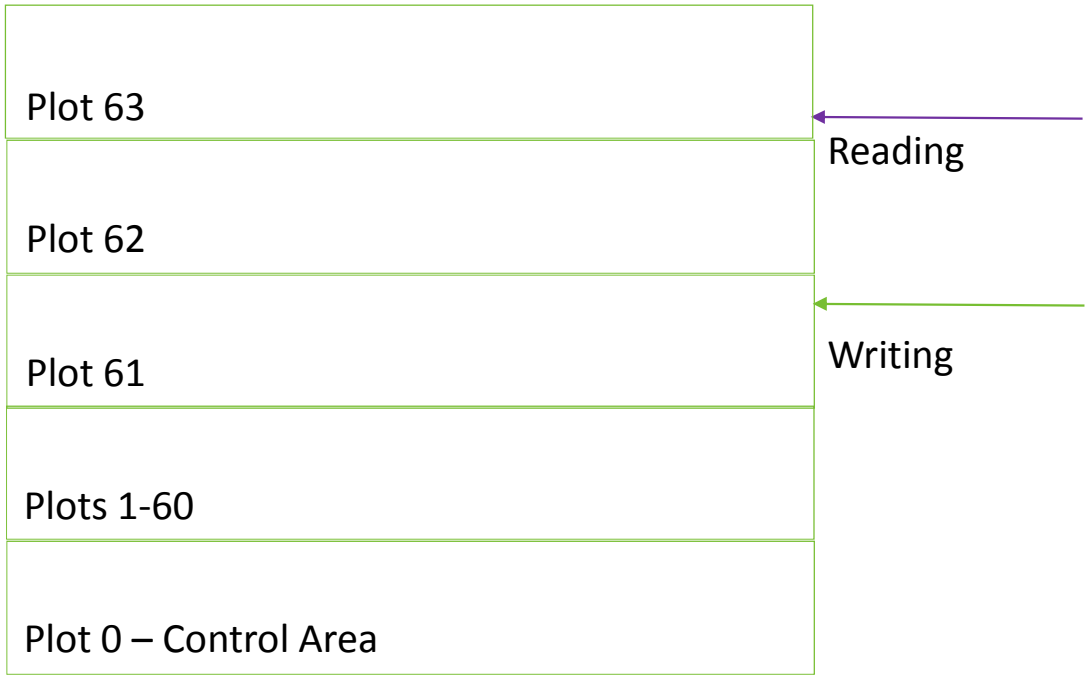
No expansion yet.

- TINYDS is maximum ceiling
- 128M is current ceiling
- Writing is in Plot 11
- Reading is in Plot 13
- Not at either ceiling
- Stress Level 2
- Expansion of data space is imminent
  - Plot 16 will be allocated once “writing” gets to the Plot 12 boundary if “reading” doesn’t advance fast enough



- TINYDS is maximum ceiling
- Writing is in Plot 11
- Reading is in Plot 13
- Not at maximum ceiling
- Stress Level 2
- Expansion of data space is imminent
  - Plot 16 will be allocated once “writing” gets to the Plot 12 boundary if “reading” doesn’t advance fast enough
  - Current ceiling becomes 136M

CNM163I Data buffering storage has increased to *newsize* megabytes.



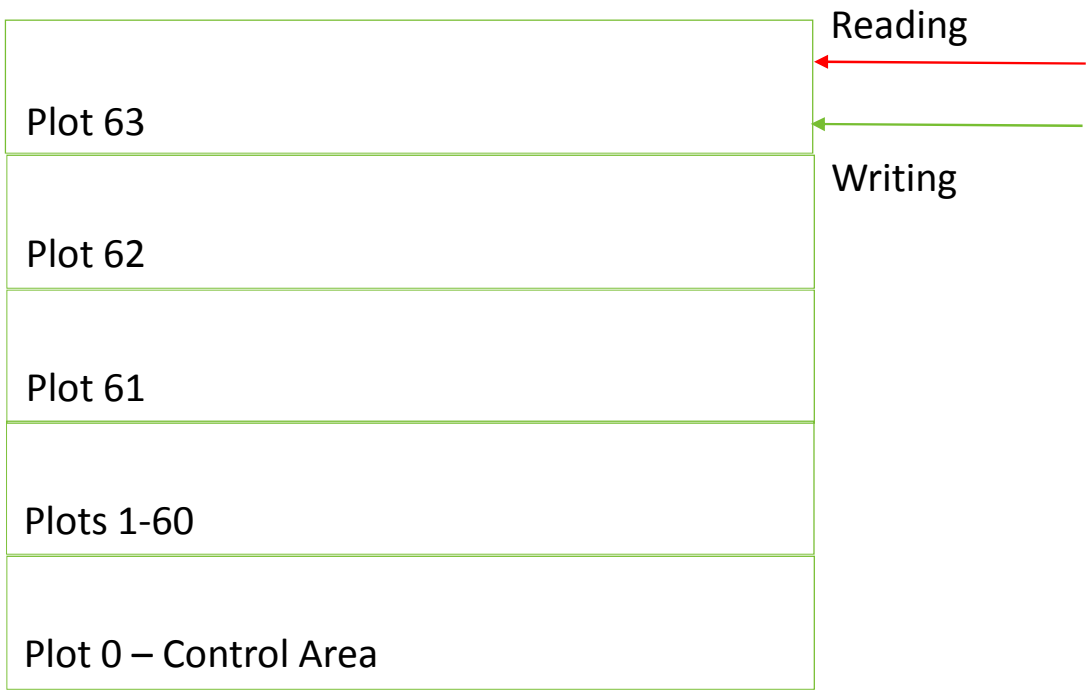
- TINYDS is maximum ceiling
- Reading is in Plot 63
- Writing is in Plot 61
- Stress Level 3
- No expansion since we cannot grow beyond the ceiling

No message and no action taken.

- TINYDS is maximum ceiling
- Reading is in Plot 63
- Writing is in Plot 62
- Stress Level 4

CNM162I: *process* buffering is severe. Messages lost in about *loss_time* seconds

- *process* – Automation
- *loss_time* – estimated amount of time before messages are lost



- TINYDS is maximum ceiling
- Reading and Writing are in the same plot
- Stress Level 5

CNM164A: *process* fell behind. *ltype* from *begin_timestamp* to *end_timestamp. process* – Automation

- begin_timestamp and end_timestamp – beginning and ending timestamps for messages lost
- *number* – approximate number of messages lost
- *ltype* – The type of loss. Value is “Expected” or “Unexpected”

So CANZLOG is stressed – now what?

- Tricky – you need to find out why messages are arriving in NetView faster than automation can read them……

- CNM162E - Look for processes using excessive CPU or message rates. Consider using message flood automation. Raise the priority of NetView or the CNMCSSIR task.

- CNM164A - Investigate system activity around the time indicated by timestampOne to determine the cause of the message processing hang. Check for the integrity of the system. Verify the status of all active jobs and jobs that should be active. If messages are lost, this situation may affect automation as the actual automation resource status (IBM System Automation for z/OS) may no longer be accurate, and any actions triggered by those lost messages will not be seen. To fix the resource status in such a situation, the operator might issue a RESYNC SUBSYSTEM command.

Canzlog print

Canzlog PRINT

- APARs OA55077 and OA55078

- Requests:
  - Provide capability to print Canzlog for audit and serviceability purposes

- Enhancements:
  - Ability to print Canzlog from:
    - NetView 3270 console
    - Canzlog browse window
    - Canzlog filter panel (CNMKCZLG)
    - NVINFO exec

Canzlog PRINT Syntax

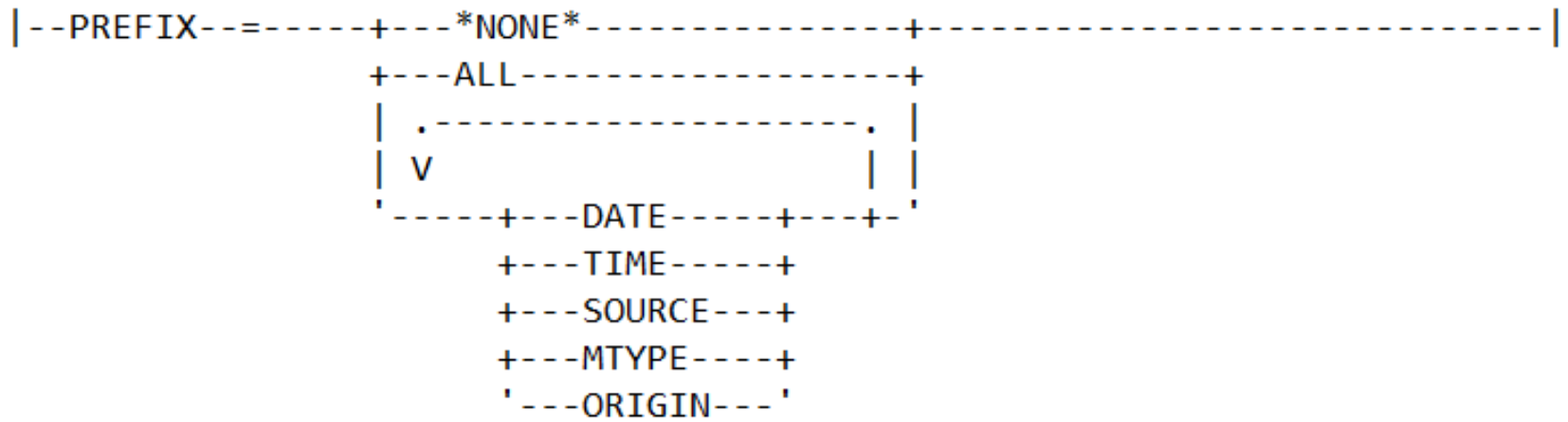
```
PRINT

>>-PRINT--+--------+--+--------------+--+------------+--| FILTER SPEC |-><
          '-number-'  '-| OUTPUTDS |-'  '-| PREFIX |-'
```

- *number* is the number of records to print. Range is 1 to 4,000,000.

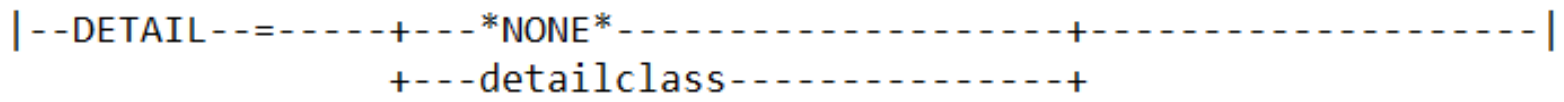
```
OUTPUTDS

|----+-----------------------------------+----------------------||
     +---OUTPUT--=--dsname---------------+
     '---OUTPUT--=--dsname(membername)---'
```

Canzlog PRINT Syntax cont.

PREFIX



DETAIL



Canzlog PRINT Syntax cont.

```
FILTER SPEC

|--+---LOG-----------+--| BFS |---------------------------------|
   +---CANZLOG-------+
   '---namedfilter---'


BFS (Basic Filter Syntax)

|--+----------+--+----------+--+--------+--+---------+---------->
   '-any text-'  '-| FROM |-'  '-| TO |-'  '-| FOR |-'
```

KEYSPECS keyword is also supported. The values are the same as for BROWSE.

Canzlog PRINT CNMSTYLE Statements

- CZ.PRINT.MAXRECS
  - Specifies the number of records to print
  - Equivalent to *number* in the PRINT command syntax

- CZ.PRINT.OUTPUT
  - Specifies the location to which the Canzlog PRINT output will the written. The dataset must be:
    - Pre-allocated by the user prior to issuing the PRINT command
      - Sample allocation characteristics will be provided in online help
    - Fully qualified sequential data set name
    - Fully qualified partitioned or partitioned extended data set if a member name is to be specified
  - Equivalent to OUTPUTDS in the PRINT command syntax

- CZ.PRINT.PREFIX
  - Specifies the default elements of a prefix for Canzlog messages that are to be printed.
  - Equivalent to PREFIX in PRINT command syntax

Canzlog PRINT CNMSTYLE Statements cont.

- CZ.DETAIL.MSG.detailclass
  - Specifies the message details for MVS messages that are to be printed
  - Equivalent to DETAIL in PRINT command syntax

- CZ.DETAIL.NVMSG.detailclass
  - Specifies the message details for NetView messages that are to be printed
  - Equivalent to DETAIL in PRINT command syntax

  - detailname
    - *NONE*
    - DATE, TIME, JOBN, CONS, DESC, ROUT and more

- CZ.FILTER.filtername
  - Specifies which Canzlog messages will be printed
  - Equivalent to FILTER SPEC in the PRINT command syntax

- CZ.FILTER.filtername
  - Specifies which Canzlog messages will be printed
  - Equivalent to FILTER SPEC in the PRINT command syntax

Canzlog PRINT Message Detail Keywords

Message Detail Keywords		
Keyword	Format	Descripton
For all messages, "Common Details"		
MTYP	one character	NetView message type, MTYPE.
OPDT	text	date & time in local format re DEFAULTS/OVERRIDE settings for LONGDATE & LONGTIME
TIME	text	Local Time; word 2 of OPDT
DATE	text	Local Date; word 1 of OPDT
ZDT	text	date & time for GMT; U.S. format: "MM/DD/YY HH:MM:SS"
STFL	hex string	L2 lomNVWauto+2
SEGM	bit string	L2 lomFlags
ECHO	0|1	"1" indicates message is a command echo
AUTM	decimal	time in milliseconds for message to be automated
DOMT	decimal	time in seconds for message to be matched by a DOM
TAGS	hex number	L2 lomSysTags
For MVS messages (WTO or WTOR)		
PLUS	Yes|No	Message had a "+" prefix
FLGS	bit string	L2 lmsFlags
MCS	bit string	Bit string, Four 0/1 characters representing the respective values of wqeMSGTF, wqeRETAN, wmjMRRET, and wmjMRNRT.
MCSX	hex number	same as MCS but as hex number
CART	Yes|No	Msg Had a non-null CART
RLEN	decimal	Reply ID length
JOBN	text	Job name of message sender, SOURCE
ASID	HEX number	Address Space ID of message sender
DESC	hex string	Descriptor code field as a hex number
DCBT	bit string	Descriptor code field as string of 1 or 0
ASTY	character	Sender's Address Space Type; see ASTYPE edit order
WTOK	text	WTO Key assigned by z/OS or Msg Revision
SYSN	text	System name where message originated, ORIGIN
CONS	text	Destination console name, if any
RTCD	hex string	All 128 route codes, as a HEX string
RT16	hex string	The first 16 route codes, as a HEX string
UCHR	text	The 16 character user field, set by the revision table UCHAR order, as text
UCHX	hex string	The 16 character user field, set by the revision table UCHAR order, as a hex string
For NetView messages		
OPID	text	Operator ID of message sender, SOURCE
NVFL	bit string	L2 lnvFlags
ATHR	Yes|No	Message was routed to an authorized receiver
DOMN	text	NetView domain name where message originated, ORIGIN
MOD	text	L2 For supported messages, module name where message made

Canzlog PRINT miscellaneous

- If the CNMSTYLE statements are defined, the value will be used on the PRINT command if the equivalent keywords are not specified

- Multiple filters can be defined to CNMSTYLE
  - If no filter specification is specified on the PRINT command, then the filter will default to CANZLOG (NVMSG,MVSMSG,DOM)
  - Basic Filter Syntax (BFS) is the same as in the BROWSE command

- A new CZ keyword will be added to the RESTYLE command to reread the CZ. CNMSTYLE statements.

Canzlog PRINT output

```
******************************** Top of Data ********************************
CNM102I CANZLOG PRINT FROM DOMAIN NTVAF AT '08/15/18 11:29:46'
FILTER:  MVS & local NetView messages FILTER=NVMVS FROM='08/15/18 11:01:25'  TAG
PREFIXES:
DETAIL FOR MVS MESSAGE: OPDT MTYP MCS DESC JOBN OPID CONS
DETAIL FOR NETVIEW MESSAGE: OPDT MTYP JOBN OPID ATHR SYSN DOMN
------------------------------------------------------------------------------
NVMSG  OPDT=08/15/18 11:01:26 MTYP=* OPID=NETOP1   ATHR=No  DOMN=NTVAF
MVS D T
MVSMSG OPDT=08/15/18 11:01:26 MTYP=E MCS=0100 DESC=0000 JOBN=T630EANV CONS=
IEA630I  OPERATOR NETO1NM  NOW ACTIVE,   SYSTEM=NMPIPL47, LU=NTAFL702
MVSMSG OPDT=08/15/18 11:01:26 MTYP=E MCS=0100 DESC=0000 JOBN=T630EANV CONS=NETO1
D T
MVSMSG OPDT=08/15/18 11:01:26 MTYP=E MCS=0100 DESC=0800 JOBN=T630EANV CONS=NETO1
IEE136I LOCAL: TIME=11.01.26 DATE=2018.227  UTC: TIME=15.01.26 DATE=2018.227
NVMSG  OPDT=08/15/18 11:01:34 MTYP=* OPID=NETOP1   ATHR=No  DOMN=NTVAF
LIST STATUS=CANZLOG
NVMSG  OPDT=08/15/18 11:01:34 MTYP=' OPID=NETOP1   ATHR=No  DOMN=NTVAF
CNM600I Canzlog status: Active
  F1=Help    F3=Exit    F5=Rfind  F12=Cancel
```

Header information shows what you selected to be printed

Detail keyword and values for MVS vs. NetView messages. (These are the defaults).

Canzlog Print in Browse Window - Syntax

```
>>-PRINT--+--------+-------------------------------><
          '-number-'
```

- *number* is the number of records to print. Range is 1 to 4,000,000.

- The filter specification will be inherited from the BROWSE session.
- Printing will start from the:
  - Current focus message
  - Top of the display if no message is selected

- Note: If any operand other than *number* is specified, then the PRINT command will be invoked independent of the BROWSE session.

Example: Canzlog PRINT in Browse Window

Filter defaults to browse session filter .

```
Canzlog  MVS & local NetView messages FILTER=LOG  03/09/18 10:28:01 -- 10:28:04
10:28:01 S T630EANV
10:28:01 IRR813I NO PROFILE WAS FOUND IN THE STARTED CLASS FOR
                 T630EANV WITH JOBNAME T630EANV. RACF WILL USE ICHRIN03.
10:28:01 $HASP100 T630EANV ON STCINRDR
10:28:01 IEF695I START T630EANV WITH JOBNAME T630EANV IS ASSIGNED TO USER IBMUSER , GROUP OMVS
10:28:01 $HASP373 T630EANV STARTED
10:28:01 IEF403I T630EANV - STARTED - TIME=10.28.01
10:28:01 CNM910I 'BPX1SDD WITH PROCESSDEFER+JOBPERM+NOJSTUNDUB+UNIQUEACEE' REQUEST ACCEPTED
10:28:01 BNJ080I BNJLINTB - BUFFER SIZE=24K,SLOT SIZE=200
10:28:02 DSI244I NETVIEW TRACE ACTIVE FOR TASK = ALL : MODE = INT, SIZE = 4000 WITH OPTIONS = QUE PSS DISP STOR UEXIT MOD SAF TCP
10:28:02 DSI899I DSI244I , SAF TRACE = FAILURES FOR REQUEST TYPES = AUTH EXTRACT FASTAUTH LIST STAT TOKENMAP TOKENXTR VERIFY
10:28:02 DSI530I 'DSIDCBMT' : 'DSIDCBMT' IS READY AND WAITING FOR WORK
10:28:03 DSI530I 'DSITIMMT' : 'DSITIMMT' IS READY AND WAITING FOR WORK
10:28:03 BNH350I NETVIEW HIGH-LEVEL LANGUAGE SUPPORT HAS BEEN SUCCESSFULLY INITIALIZED WITH LE/370 LIBRARIES
10:28:03 DSI530I 'DSIHLLMT' : 'DSIHLLMT' IS READY AND WAITING FOR WORK
10:28:03 DSI530I 'DSISTMMT' : 'DSISTMMT' IS READY AND WAITING FOR WORK
10:28:03 DSI530I 'DSILOGMT' : 'DSILOGMT' IS READY AND WAITING FOR WORK
10:28:03 DWO854I Canzlog is active.
10:28:04 -*--*--*--*--*--*--*--*--*--*--*--*--*- IBM
         NetView for z/OS V6R2M1 starting 9 Mar 2018 at
         10:28:04 using CNMSTYLE style. NetView initialization
         in progress for 2.57 seconds.
10:28:04 TRACE END
10:28:04 DSI241I NCCF TRACE INACTIVE
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==> PRINT 1000
```

Printing starts with focus message (shown) or first line displayed if there is no focus message

Print 1000 records from focus message

Canzlog Print in CANZLOG Filter Panel - Syntax

```
>>-PRINT-----------------------------------------------------><
```

- Filter specification should be entered on the panel
- FOR, TO, or FROM should be entered to identify where printing should begin.
  - If not specified, CzTopDat or CzTopAge will be used as the starting point. The number of records printed will be the value specified on CZ.PRINT.MAXRECS CNMSTYLE statement.
- Note: If an operand is specified, then the PRINT command will be invoked independent of the BROWSE session.

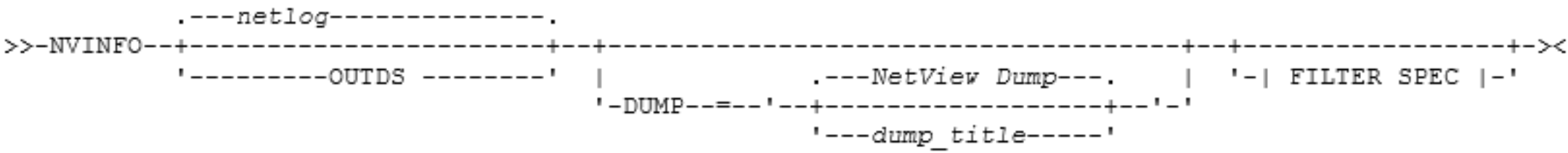
Canzlog PRINT from Filter Panel

```
From:      03/09/18 10:28          To:        03/09/18 10:36:27
For:
Tag:                               MSGID:
Jobname:                           Jobid:
ASID:                              ASType:
Console:                           Route Code:
Domain:                            System ID:
AutoTok:                           Desc Code:
AuthUser:                          AuthGroup:
Opid:      NETOP1                  UCHARS:
CHKey:                             WTOKey:
Text - case sensitive; faster search:

Text - case insensitive; slower search:

Target:
Name:          Remark:

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

Records From and To the highlighted dates and times for NETOP1 will be printed.

NVINFO and Canzlog PRINT

- NVINFO (CNME9003) collects data for the active NetView session.
  - It will be enhanced to print Canzlog messages
  - To print Canzlog messages, both an output file and a filter specification are required
  - The number of records to be printed is defined by the CZ.PRINT.MAXRECS CNMSTYLE statement



Note: OUTDS and FILTER SPEC are equivalent to OUTPUTDS and FILTER SPEC on the PRINT command

Command statistics

Command Statistics

- APARs OA55075 and OA55076

- Request:
  - Provide utilization statistics such as CPU, storage, and I/O at the REXX exec level
- Enhancement:
  - Provide utilization statistics for NetView commands
    - Statistics will be available at 2 granularity levels:
      - Primary commands
      - Primary and subordinate commands
      - Definitions:
        - Primary command: Command issued directly by an operator or autotask, as well as commands issued as a result of automation, EXCMD, timers, etc.
        - Subordinate command: Command issued by a primary command

Command Statistics – What is collected

- Command verb
- Alternate Name (command synonym)
- Parent command
- NetView task running the command
- Start date and time (STCK)
- End date and time (STCK)
- CPU utilization (microseconds)
- Storage – high water mark (bytes)
- Total I/O count
  - Only I/O that NetView does
- Authorizing task name

Example: PRIONLY

```
REXXA
....
        'LIST TASK=AUTO1'
....
         'REXXB'
               'REXXC'
                     say 'Hi'
....

REXXA exit
```

- Statistics are collected for:
  - REXXA (primary)
  - LIST command (subordinate)
  - REXXB (subordinate)
  - REXXC (subordinate)

- When REXXA ends, one record will be written for REXXA, but the statistics shown will be cumulative for both the primary and subordinate commands.

CMDMON DISPLAY output: PRIONLY

```
CNMKWIND OUTPUT FROM CMDMON DISP                    LINE 3215 OF 3216
BNH920I 3212 COMMAND STATISTICS RECORDS DISPLAYED
COMMAND  ALTERNATE PARENT     TASK         START              END                CPU              MAXIMUM      I/O     AUTHORIZED
 NAME      NAME    COMMAND    NAME         TIME               TIME               TIME             STORAGE     COUNT      USER
-------- --------- -------- -------- ---------------- ---------------- ------------------- --------- --------- ----------
REXXA    N/A       N/A      NETOP1   08/15/18 16:22:38 08/15/18 16:22:38 1.33               253.88    22        NETOP1
TIMEP    N/A       N/A      FLBTOPO  08/15/18 16:22:44 08/15/18 16:22:44 0.00               0.00      0         FLBTOPO
*------------------------------------------------------ Bottom of Data ------------------------------------------------------
```

Example: ALL (Primary and Subordinate)

```
REXXA
....
        'LIST TASK=AUTO1'
....
         'REXXB'
               'REXXC'
                     say 'Hi'
....

REXXA exit
```

- Statistics are collected for:
  - REXXA (primary)
  - LIST command (subordinate)
  - REXXB (subordinate)
  - REXXC (subordinate)

- When REXXA ends, one record will be written for each of:
  - REXXA – this will still show the cumulative total of all four commands
  - LIST command
  - REXXB
  - REXXC

CMDMON DISPLAY output: ALL

```
CNMKWIND OUTPUT FROM CMDMON DISP                    LINE 2580 OF 2599
BNH920I 2595 COMMAND STATISTICS RECORDS DISPLAYED
COMMAND  ALTERNATE PARENT    TASK       START              END                CPU              MAXIMUM     I/O     AUTHORIZED
 NAME      NAME    COMMAND   NAME       TIME               TIME               TIME             STORAGE     COUNT     USER
-------- --------- -------- -------- ---------------- ---------------- ------------------- ---------- ---------- ----------
LIST     N/A       REXXA    NETOP1   08/15/18 16:14:04 08/15/18 16:14:04 0.54                15.24      0          NETOP1
REXXC    N/A       REXXB    NETOP1   08/15/18 16:14:04 08/15/18 16:14:04 0.04                61.23      0          NETOP1
REXXB    N/A       REXXA    NETOP1   08/15/18 16:14:04 08/15/18 16:14:04 0.06                61.23      7          NETOP1
REXXA    N/A       N/A      NETOP1   08/15/18 16:14:04 08/15/18 16:14:04 1.36                253.88     22         NETOP1
```

- Notes:
  - The command that finished first is listed first
  - The display output can be user-customized to reverse the order of the rows

Command Statistics – More Details

- Can be started after NetView initialization completes or dynamically
- Can be stopped dynamically or using RESTYLE
- Command statistics record will be stored “in memory”
  - You define how many total records will be stored
  - When approximately one half of the allocated memory is full, NetView will send the records to a dedicated autotask and you can take whatever action you want to take on the data
    - You can also trigger your “action” manually or using automation
- When a NetView CLOSE command is issued, ENDCMD processing will occur for this function using a dedicated autotask to ensure that all statistics are processed

Command Statistics – CNMSTYLE statements

- CMDMON.INIT.STATS = ALL | PRIONLY | OFF
  - Specifies whether or not command statistics monitoring is enabled, and if so, whether all or just primary commands are monitored
- CMDMON.DATA.MAXRECS=*records*
  - Specifies the maximum number of command statistics records kept in memory
  - Default is 10000
- CMDMON.DATA.CAPTURE = *procedure*
  - Specifies a command procedure that is to be invoked to process the “in memory” command statistics records.
- function.autotask.CMDMON = AUTOCMST
  - Specifies the autotask on which you want the CMDMON.DATA.CAPTURE procedure to run.

- Notes:
  - CMDMON.DATA.MAXRECS and CMDMON.DATA.CAPTURE values must be specified for either method of starting this function.
  - RESTYLE CMDMON will be supported

Command Statistics – Inclusion and Exclusion Lists

- By default, all commands will be monitored.
  - There will be a small number of exceptions to this
- You may only want to monitor “some” commands, so you can specify an inclusion and/or exclusion list (sample CNMSCSIE will be provided)
  - Command names
  - Wildcard capability will be provided
  - The inclusion list will be processed first
    - If the specified command is found, then the exclusion list will be processed
    - If the specified command is not found, then the exclusion list is not processed
- RESTYLE CMDMON will reread the inclusion/exclusion sample CNMSCSIE

Command Statistics – Inclusion and Exclusion List Example

CNMSCSIE

```
BEGIN.INCLUDE
AUTOCNT
MYEXEC
DVIP*
XYZ*

BEGIN.EXCLUDE
A*
```

- AUTOCNT and MYEXEC are full command names
- DVIP*, XYZ*, and A* are wildcards

- Results for this member:
  - MYEXEC will be monitored
  - All commands that start with DVIP will be monitored, such as:
    - DVIPSTAT
    - DVIPTARG
    - ……..
  - All commands that start will XYZ will be monitored
  - AUTOCNT will not be monitored because of the A in the exclusion list

Command Statistics: CMDMON Syntax

```
>>-CMDMON---+- STATS=---+-ALL-----+-----><
            |           |-PRIonly-|
            |           '-OFF-----|
            |- CAPture------------|
            '- DISPlay------------'
```

- STATS – specifies whether or not command statistic monitoring is enabled, and if so, whether all or just primary commands are monitored
  - ALL – enables command monitoring and specifies that both primary and subordinate commands are monitored
  - PRIonly - enables command monitoring and specifies that only primary commands are monitored
  - OFF – disables command monitoring
- CAPture - Specifies that all new statistical data is to be queued for processing to the task defined in the function.autotask.CMDMON CNMSTYLE statement.
- DISPlay - Displays the command statistics data gathered by the NetView program that is currently in memory.
  - Hint: Display output in a window

Command Statistics – Samples

- CNMSCSDP – Command Statistics Data Processor
  - This sample will allocate a dataset and write the “in memory” command statistics to the dataset. It will also, optionally, format the data.
  - The format is .csv for use in spreadsheets
- CNMSCSFM – Command Statistics Formatter
  - This sample will format the “in memory” data
- CNMSCSSU – Command Statistics Summary Data
  - This sample will provide statistical aggregation
- CNMSCSIE – Command Statistics Inclusion/Exclusion
  - This sample is where commands to include and/or exclude are specified

Command Statistics – CNMSCSSU output

```
CNMKWIND OUTPUT FROM CNMSCSSU                                    LINE 0 OF 85
*------------------------------------------------------- Top of Data ---------------------------------------------------
COMMAND  ALTERNATE          CPU              MAXIMUM      I/O      COMMAND
 NAME      NAME             TIME             STORAGE     COUNT     COUNT
-------- --------- -------------------- ---------- ---------- -------
cp1001p5 PIPE      0.08                 23.28      0          4
cp8204p2 PIPE      1.04                 302.64     0          52
AAUPCPEX N/A       0.10                 95.19      213        6
ACTVLIFE N/A       0.49                 176.42     0          2
AFTER    N/A       0.51                 44.16      0          48
AQNE1000 N/A       19.25                7280.64    26352      72
AQNE1001 N/A       1.88                 477.08     1980       4
AQNE1002 ACTVCTL   0.77                 130.04     585        1
AQNSTORP N/A       0.00                 11.52      0          72
AUTOTASK N/A       0.39                 38.61      0          39
CzWXmCz  PIPE      0.19                 8.55       0          1
CLEAR    N/A       0.27                 2.25       0          9
CMDMON   N/A       431.79               4367.57    1314       4
CMDX1505 PIPE      0.02                 11.85      0          1
CNMCAMQS N/A       0.00                 0.00       0          1
CNMDATFO PIPE      10.56                14.05      0          1
CNMECZWX N/A       12.30                44.19      4690       9
CNMERSYN N/A       1.32                 78.59      237        1
CNMETACC N/A       1.54                 0.82       2          2
CNMEXCON N/A       167.68               21044.12   184700     118
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
CMD==>
```

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MORE INFORMATION

More Information

- NetView website

  https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Tivoli System z Monitoring and Application Management/page/IBM NetView for zOS

- Service Management Suite for z/OS

  https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Wfb8610d29f30_4f81_802f_2b8d115202ec

- NetView customer forum

  https://groups.yahoo.com/neo/group/NetView/info

- NetView documentation

  http://www-01.ibm.com/support/knowledgecenter/SSZJDU_6.2.1/com.ibm.itnetviewforzos.doc_6.2.1/netv621_welcome_kc.htm

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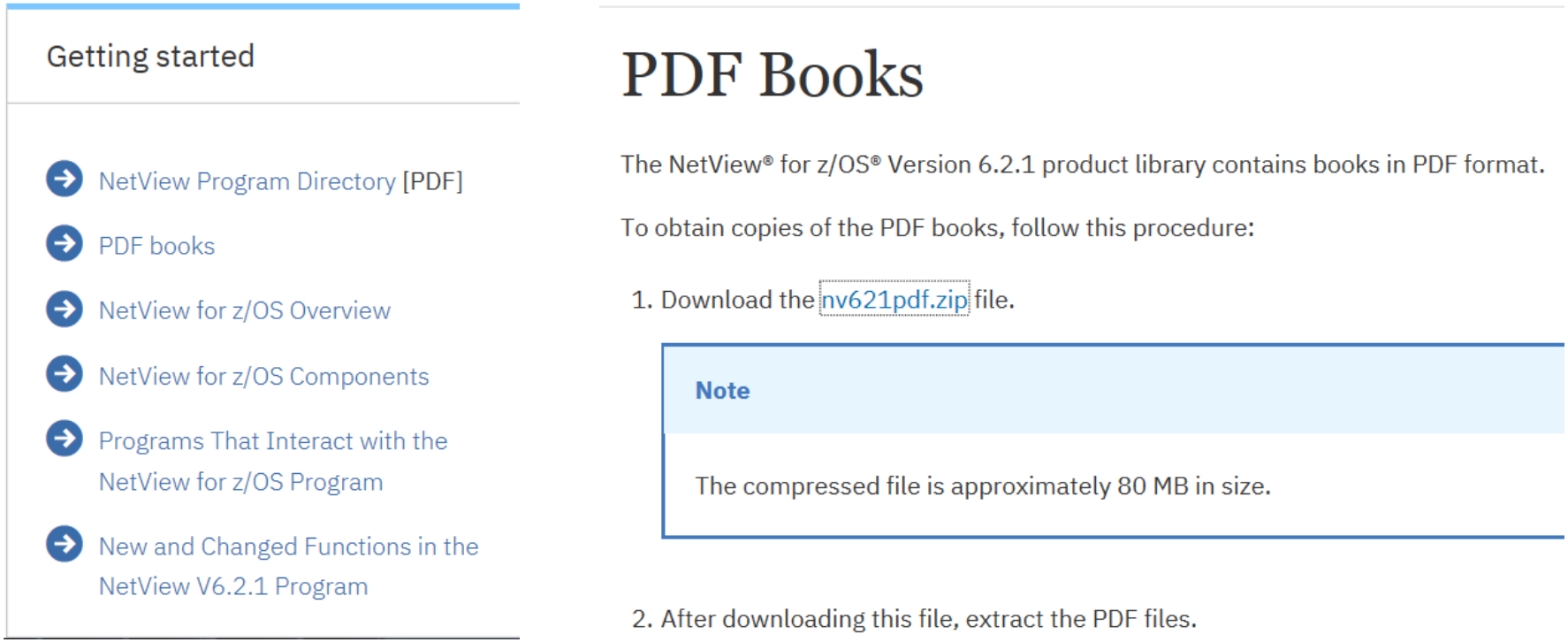

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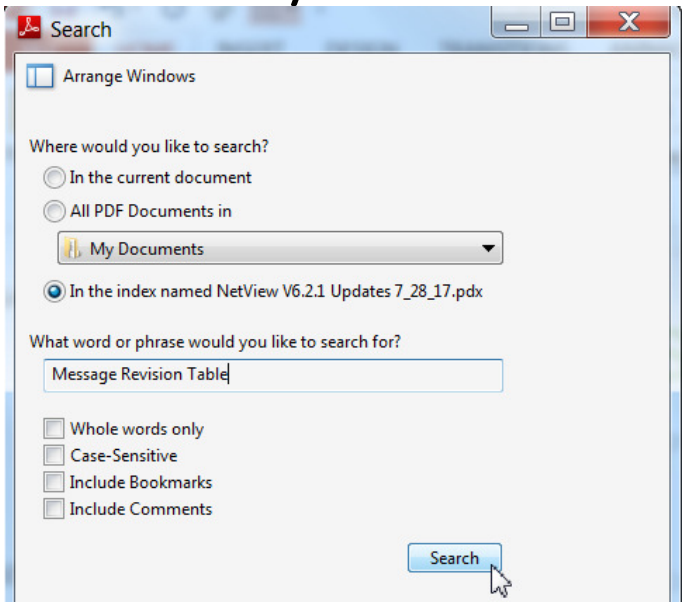

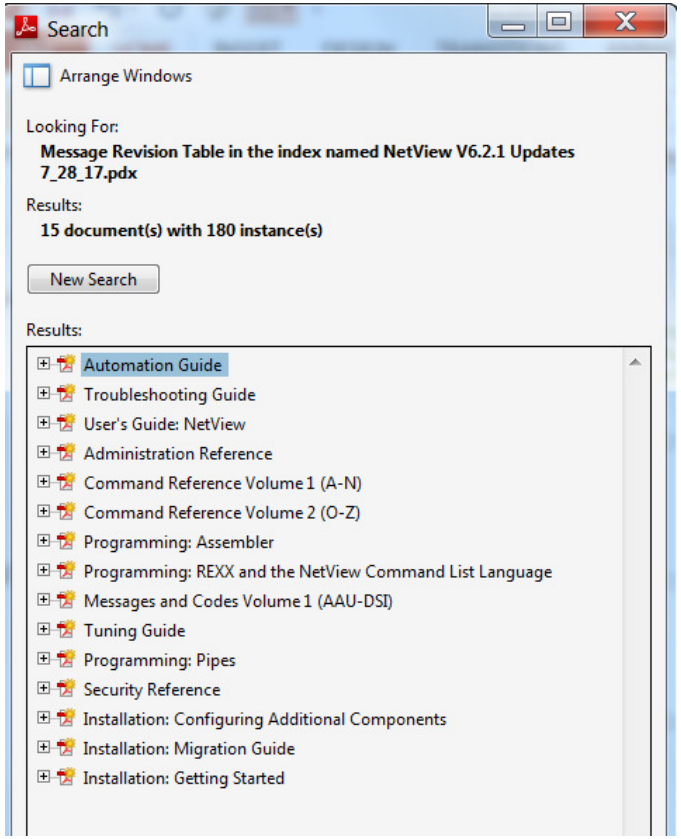

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