How to Automate Common z/VM and Linux on System z Tasks Session 10049
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Abstract

Managing console logs is a critical task, and one that can be complicated when multiple systems are supported. This presentation looks at ways to automate and simplify the following tasks: Keeping a daily log of all z/VM system messages, commands entered, and response messages and return codes; Keeping in the same daily log all Linux console and syslogd or syslog-ng messages for all Linux servers; Keeping the log organized without filling up spool or disk space; Easily reviewing the log online for selected periods; Storing older logs on tape for as long as required.
New product enhancements and strategic partnerships will help you reduce costs, improve performance and more efficiently manage Linux on System z

- **New releases of CA VM:Manager Suite for Linux on System z** provide various feature enhancements including new support for managing tapes for Linux on System z, and others that help customers install, deploy, and service their CA z/VM products more effectively and quickly

- **Velocity Software zVPS Performance Suite** complements CA solutions with real-time access to detail data from z/VM and Linux on System z platforms for optimized performance, capacity planning and cost chargeback

- **INNOVATION Data Processing UPSTREAM for Linux on System z and UPSTREAM for z/OS UNIX** extend CA data protection capabilities with file level backup for Linux on System z and z/OS UNIX files

- **CA Mainframe Connector for Linux on System z** allows CA z/OS-based automation products to receive event information from Linux on System z environments

Combined, these solutions will help remove barriers and reduce time, cost and risk of consolidating workloads to Linux on System z
Logging System Messages

> Challenge:

- Keep a daily log of all z/VM Messages, Commands, Responses and RCs
- Keep in the same daily log all Linux console and SYSLOGD or SYSLOG-NG messages for all my Linux servers
- Keep the log organized while managing spool or disk space
- Be able to review logs online for any date and time
- Retain logs on tape for as long as needed
Logging System Messages

> Solution:

- **CA VM:Operator**
  - Maintains log of all messages, commands, responses and RCs
  - Maintains log of all Linux console, SYSLOGD or SYSLOG-NG messages
  - Maintains daily logs with easy access online

- **CA VM:Backup**
  - Automatically backup log files
  - Provides limited retention

- **CA VM:Archiver**
  - Automatically archive log files
  - Provides permanent retention

- **CA VM:Schedule**
  - Automatically schedule backups and archives
SYSLOG disk kept at 99%

link operator ld0 ld0 rr
VMXACJ0171I CP command 'LINK OPERATOR LD0 RR '
VMXACJ0172I Accepted via system rule: ACCEPT GUIR101 LINK * * (NOPASS
DASD 01D0 LINKED R/O; R/W BY OPERATOR
Ready;
acc ld0 b
DMSACP723I B (1D0) R/O
Ready;
q disk b
LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT BLK TOTAL
VMY1D0 1D0 B R/O 3 3390 4096 104 536-99 4 540
Ready;

RUNNING ZVM610
SYSLOG files reside on OPERATOR 1D0
SYSLOG files reside on OPERATOR 1D0

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SYSLOG files reside on OPERATOR 1D0

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SYSLOG files reside on OPERATOR 1D0
VMYEDLOG to view any SYSLOG (1)
VMYEDLOG to view any SYSLOG
VMYEDLOG to view any SYSLOG

091015  VMYEDLOG A1  V 132  Trunc=132  Size=408  Line=187  Col=1  Alt=0

01:54:39  GUIRIO1  Q02C  VMYCMD1112I  Ending command admin with completion code 062
02:03:00  OPERATOR *3  GRAF  0023  LOGOFF AS GUIRIO1  USERS = 15
02:03:05  OPERATOR *3  GRAF  0023  LOGON AS VMRMaint  USERS = 16
02:05:12  VMRMaint  022F  VMYCMD1111I  Beginning command: rvs query
02:05:12  VMRMaint  022F  VMYCMD1112I  Ending command rvs with completion code 062
02:08:18  MAINOPER  0030  VMYINI0019R  Enter: remote zvm530 cp q tape
02:08:18  MAINOPER  0030  An active tape was not found.
02:08:18  MAINOPER  0030  VMYINI0006I  0.000  Ready;
02:12:17  MAINOPER  0031  VMYINI0019R  Enter: q tape
02:12:17  MAINOPER  0031  An active tape was not found.
02:12:17  MAINOPER  0031  VMYINI0006I  0.005  Ready;
02:12:23  MAINOPER  0032  VMYINI0019R  Enter: rvs query
02:12:23  MAINOPER  0032  NodeID  Status  WriteCtr  ReadCtr
02:12:23  MAINOPER  0032  ---------------  ---------------  ---------------  -------------
02:12:23  MAINOPER  0032  ZVM530  Enabled  11  11
02:12:23  MAINOPER  0032  ZVM540  Enabled  6  6
02:12:23  MAINOPER  0032  VMYINI0006I  0.000  Ready;
02:12:25  MAINOPER  0033  VMYINI0019R  Enter: rvs query
02:12:25  MAINOPER  0033  NodeID  Status  WriteCtr  ReadCtr
02:12:25  MAINOPER  0033  ---------------  ---------------  ---------------  -------------
02:12:25  MAINOPER  0033  ZVM530  Enabled  11  11
02:12:25  MAINOPER  0033  ZVM540  Enabled  6  6
02:12:25  MAINOPER  0033  VMYINI0006I  0.000  Ready;
02:12:30  MAINOPER  0034  VMYINI0019R  Enter: filel
02:12:49  MAINOPER  0034  VMYINI0006I  0.003  Ready;
02:12:57  MAINOPER  0035  VMYINI0019R  Enter: table load log zvm610
02:12:57  MAINOPER  0035  VMYINIT0206I  Loading ZVM610 LOGTABLE.
02:12:57  MAINOPER  0035  VMYINI0006I  0.000  Ready;
CA VM: Archiver list of SYSLOG files to archive

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<td>B1 F</td>
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<td>B1 F</td>
<td>4096</td>
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<td>9/22/09</td>
<td>00:00:02</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CA VM: Backup job backing up SYSLOG files to DASD tape.

vmbbackup submit syslog
VMBSTJ0164I Job has been created from job template SYSLOG and placed in the pending job queue.
Ready:
RDR FILE 0005 SENT FROM VMBACKUP PUN WAS 0257 RECS 0013 CPY 001 A NOHOLD NOKEEP
RDR FILE 0006 SENT FROM VMBACKUP PRT WAS 0258 RECS 0078 CPY 001 P NOHOLD NOKEEP

RUNNING ZVM610
CA VM: Backup console showing backup of SYSLOG files to DASD tape.
CA VM: Backup console showing backup of SYSLOG files to DASD tape

VMXACJ0172I Accepted via default system rule: ACCEPT * SPOOL
VMXACJ0171I CP command 'SPOOL GUIRIO1'
VMXACJ0172I Accepted via default system rule: ACCEPT * SPOOL

PUN FILE 0257 SENT TO GUIRIO1 RDR AS 0005 RECS 0013 CPY 001 A NOHOLD NOKEEP
14:50:05 VMBACKUP 05 VMBMNP0076I Virtual storage required to run job SYSLOG was 977K out of 114M bytes.
PRT FILE 0288 SENT TO GUIRIO1 RDR AS 0006 RECS 0078 CPY 001 P NOHOLD NOKEEP
14:50:05 VMBACKUP 05 VMBMNP0077I Maximum virtual storage used during job SYSLOG was 1.5M out of 114M bytes.
14:50:05 VMBACKUP 05 VMBMNP0167I Backup job SYSLOG has ended.
CA VM: Backup list of SYSLOG files to restore

<table>
<thead>
<tr>
<th>Req</th>
<th>Filename</th>
<th>Filetype</th>
<th>Vaddr</th>
<th>Last Revised</th>
<th>Records</th>
<th>Backup</th>
<th>Date/Time</th>
<th>Att</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
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<td></td>
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<tr>
<td>090604</td>
<td>SYSLOG</td>
<td>01D0</td>
<td>06/05/09</td>
<td>00:00</td>
<td>12</td>
<td>10/15/09</td>
<td>14:53</td>
<td>-</td>
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<td>06/05/09</td>
<td>14:05</td>
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<td>06/09/09</td>
<td>00:00</td>
<td>1</td>
<td>10/15/09</td>
<td>14:53</td>
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<td>06/10/09</td>
<td>00:00</td>
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<td>01D0</td>
<td>06/11/09</td>
<td>00:00</td>
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<td>10/15/09</td>
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<td>00:00</td>
<td>13</td>
<td>10/15/09</td>
<td>14:53</td>
<td>-</td>
</tr>
</tbody>
</table>

Type R next to each file you want to restore, or type R* to restore a minidisk or a directory. Then press PF9.
Message Filtering

> Challenge:

- Missing important messages on OPERATOR console
- Messages scroll off the OPERATOR console too fast
- Most messages are noise and not critical to operations
Message Filtering

> Solution:

- CA VM:Operator Routing Tables
  - Maps console messages to actions
  - Actions control how message is displayed or processed
- Additionally CA VM:Operator can
  - Filter common noise messages
  - Provide special display for important messages
- Keep critical messages on the screen
SYSTEM window showing important messages (1) in red and white
SYSTEM window showing important messages
red got held, white rolled off

SYSTEM window showing important messages
red got held, white rolled off

SYSTEM window showing important messages
red got held, white rolled off
Review window shows LOGON/LOGOFF messages logged that are not displayed in SYSTEM window
MAINOPER SYSTABLE definitions for LOGON and LOGOFF messages

```
MAINOPER SYSTABLE A1 V 80 Trunc=80 Size=66 Line=20 Col=1 Alt=0

====== * * * Top of File * * *
======
====== * Suppress displaying various CP LOGON, AUTOLOG, DIALED, DROPPED,
====== * DISCONNECT, RECONNECT and LOGOFF (except when forced) messages.
====== IGNORE MSG * *3 * @10.3 = 'LOGON AS'
====== IGNORE MSG * *3 * = 'AUTO LOGON '
====== IGNORE MSG * *3 * @10.3 = 'DIALED TO'
====== IGNORE MSG * *3 * @10.3 = 'DROP FROM'
====== IGNORE MSG * *3 * @10.3 = 'DCONNECT'
====== IGNORE MSG * *3 * @10.3 = 'RECONNECT'
====== IGNORE MSG * *3 * @10.3 = 'LOGOFF AS' .30 = 'FORCE'
======
====== * * * End of File * * *

====> _
```
Multiple Consoles

> Challenge:

- Need for customizable console based on role
- Tape Operators need console for tape messages
- z/VM System Programmers need an OPERATOR console
- Linux Administrators need a Linux console
Multiple Consoles

Solution:

- With CA VM:Operator you can:
  - Define multiple consoles
  - Define what should run on the consoles
  - Define processes associated with a console
  - Define spool and printer used by the console
- Define temporary operator consoles
  - View activity and enter operator commands from own terminal
- Share common console definitions including:
  - Processes
  - Program function key settings
  - Color settings
  - Reserved window text lines
- Operator and Linux consoles discussed more in next sections
Operator Consoles

> Challenge:

- Need to watch message activity and enter commands for several different user IDs from one console.
Operator Consoles

> Solution:

- CA VM:Operator can simultaneously use any number of consoles
- Using CA VM:Operator, multiple windows are usually defined to run on consoles
- Using CA VM:Operator SECUSER windows, monitor and control activity on disconnected virtual machines
SYSTEM window showing Linux startup messages

VMYIN1:000:061 0.001 Ready;
12:00:33 LNXIBMDS: z/VM V5.4.0 2009-01-20 16:05
12:00:33 LNXIBMDS: VMXACJ0098I CP command 'SPOOL SCUWI01 ' accepted by NORULE
default.
12:00:33 LNXIBMDS: There is no rule governing this request.
12:00:33 LNXIBMDS: DMSACP112S Z(200) device error
12:00:33 LNXIBMDS: DMSFOR603R FORMAT will erase all files on disk Z(200). Do you
wish to continue? Enter 1 (YES) or 0 (NO).
12:00:33 LNXIBMDS: DMSFOR605R Enter disk label:
12:00:33 LNXIBMDS: DMSFOR7331 Formatting disk Z
12:00:33 LNXIBMDS: DMSFOR7321 409600 FB=512 blocks formatted on Z(200)
12:00:33 LNXIBMDS: Just one moment...
12:00:33 LNXIBMDS: HCPDTV040E Device 00CA does not exist
12:00:33 LNXIBMDS: 0190 0191 019D 019E DETACHED
12:00:34 LNXIBMDS: zIPL v1.8.0 interactive boot menu
12:00:34 LNXIBMDS: 0. default (Linux)
12:00:34 LNXIBMDS:
12:00:34 LNXIBMDS: 1. Linux
12:00:34 LNXIBMDS: 2. ipl
12:00:34 LNXIBMDS: 3. Failsafe
12:00:34 LNXIBMDS:
12:00:34 LNXIBMDS: Note: VM users please use '#cp vi vmsg <number>
<kernal-parameters>'
12:00:34 LNXIBMDS:
12:00:34 LNXIBMDS: Please choose (default will boot in 10 seconds):
12:00:44 LNXIBMDS: Booting default (Linux)...
SYSTEM window showing Linux startup messages

SYSTEM 000%  28 Users  VM:Operator on OPERATOR(TESTTCP7)  Thu 15Oct09 12:01
12:01:14 LNXIBMDS: Freeing unused kernel memory: 196k freed
12:01:14 LNXIBMDS: doing fast boot
12:01:15 LNXIBMDS: Creating device nodes with udev
12:01:15 LNXIBMDS: udevd version 128 started
12:01:16 LNXIBMDS: dasd(eckd): 0.0.0.0201: 3390/0C(CU:3990/01) Cyl:5338 Head:15 Sec:224
12:01:16 LNXIBMDS: dasd(eckd): 0.0.0.0201: (4kB blks): 2403360kB at 48kB/trk linux disk layout
12:01:16 LNXIBMDS: dasda:CMS1/ SLES11: dasdal
12:01:17 LNXIBMDS: Boot logging started on /dev/ttyS0(/dev/console) at Thu Oct 15 16:01:12 2009
12:01:17 LNXIBMDS: Waiting for device /dev/disk/by-path/ccw-0.0.0201-part1 to appear: ok
12:01:17 LNXIBMDS: fsck 1.41.1 (01-Sep-2008)
12:01:17 LNXIBMDS: [/sbin/fsck.ext3 (1) -- /] fsck.ext3 -a
/dev/disk/by-path/ccw-0.0.0201-part1
12:01:17 LNXIBMDS: /dev/disk/by-path/ccw-0.0.0201-part1: clean, 7024/150480 files, 75657/600837 blockskjournald starting. Commit interval 5 seconds
12:01:17 LNXIBMDS: EXT3 FS on dasdal, internal journal
12:01:17 LNXIBMDS: EXT3-fs: mounted filesystem with ordered data mode.
12:01:17 LNXIBMDS:
12:01:17 LNXIBMDS: Mounting root /dev/disk/by-path/ccw-0.0.0201-part1
12:01:17 LNXIBMDS: mount -o rw,acl,subdirs,pass medications ext3
/dev/disk/by-path/ccw-0.0.0201-part1 /root
12:01:18 LNXIBMDS: mount: can't find /root/proc in /etc/fstab or /etc/mount
12:01:18 LNXIBMDS: INIT: version 2.86 booting

---> SYSTEM Window
1= ViewNext  2= Review  3= ViewPrev  4= RemvLine  5= Remv All  6= Retrieve
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top

--- Mainopera
SECUSER window showing Linux startup messages

LNXIBMDS 00%  28 Users VM:Operator on OPERATOR(TESTTCP7) Thu 15Oct09 12:01
VMYSEC0054I SCIF userid: LNXIBMDS Status: RUNNING
/dev/disk/by-path/ccw-0.0.0202-part1: clean, 82481/150480 files, 453307/600837 bytes
kjournald starting. Commit interval 5 seconds
EXT3 FS on dasdb1, internal journal
EXT3-fs: mounted filesystem with ordered data mode.

..done..done
Mounting local file systems...
/proc on /proc type proc (rw)
sysfs on /sys type sysfs (rw)
debugfs on /sys/kernel/debug type debugfs (rw)
udev on /dev type tmpfs (rw)
devpts on /dev/pts type devpts (rw,mode=0620,gid=5)
/dev/dasdb1 on /usr type ext3 (rw,acl,user_xattr)
..done
fuse init (API version 7.9)
Loading fuse module ..done
Mounting fuse control filesystem..done
Unable to find swap-space signature
Activating remaining swap-devices in /etc/fstab...
..failed
Creating /var/log/boot.msg ..done
Turning quota on
Checking quotas. This may take some time...
..done
Setting current sysctl status from /etc/sysctl.conf..done
----------------------------- LINUXID Window -----------------------------
1= ViewNext  2= 3= ViewMain  4= 5= 6= Retrieve
7= 8= 9= Repeat  10= Print  11= Expand  12= Rename Top
--- >  _

Connected to testcp7.ca.com port 22
SECUSER window showing Linux startup messages
SECUSER window showing Linux startup messages
Linux Consoles

> Challenge:

- Need to view console activity for Linux guests
- Need to enter commands to Linux guests
- Need to login to a Linux user IDs without revealing passwords on screen or system log
Linux Consoles

> Solution:

- Use CA VM:Operator SECUSER windows to manage your disconnected Linux guest
- Send commands to disconnected Linux machines
- When a SECUSER window is defined for a Linux virtual machine, you can login to root or other Linux user
- SECUSER windows can suppress password display and logging
SECUSER window showing Linux startup messages at initial Login:

Welcome to SUSE Linux Enterprise Server 11 (s390x) - Kernel 2.6.27.19-5-default
Welcome to SUSE Linux Enterprise Server 11 (s390x) - Kernel 2.6.27.19-5-default

lnxibmds login:

------------------------- LINUXID Window -------------------------
1= ViewNext  2=  3= ViewMain  4=  5=  6= Retrieve
7=  8=  9= Repeat  10= Print  11= Expand  12= Renv Top

---=> _
SECUSER window for Linux ID: Logging into root with VM:Operator password prompt
SECUSER window for Linux ID: Logging into root Password masked with *****

Welcome to SUSE Linux Enterprise Server 11 (s390x) - Kernel 2.6.27.19-5-default

Welcome to SUSE Linux Enterprise Server 11 (s390x) - Kernel 2.6.27.19-5-default

lnxibmmds login:
root
root
********

Last login: Mon Oct 12 10:09:21 EDT 2009 on ttyS0

lnxibmmds:~ #
SECUSER window for Linux ID: Entering
Linux command on root

Welcome to SUSE Linux Enterprise Server 11 (s390x) - Kernel 2.6.27.19-5-default

lnxibmds login:
root
root
******

Last login: Mon Oct 12 10:09:21 EDT 2009 on tty50
lnxibmds:~ #
ls -l
ls -l
total 100
-rw------- 1 root root 6452 Oct 12 10:05 .bash_history
drwxr-xr-x 2 root root 4096 Apr 28 14:26 .config
-rw-r--r-- 1 root root 1332 Nov 23 2005 .exrc
drwx------ 2 root root 4096 Apr 28 14:13 .gnupg
drwxr-xr-x 3 root root 4096 Sep 21 15:40 .mc
-rw------- 1 root root 12288 Oct 6 13:12 .swp
-rw-r--r-- 1 root root 344 Sep 21 08:00 .therc
-rw------- 1 root root 1048 Oct 6 13:13 .viminfo
drwxr-xr-x 2 root root 4096 Apr 28 14:42 .vnc
-rw-r--r-- 1 root root 43066 Apr 28 14:42 autoinst.xml
drwxr-xr-x 2 root root 4096 Feb 20 2009 bin
drwxr-xr-x 6 root root 4096 Apr 28 13:19 inst-sys
lnxibmds:~ #

====>  _

Connected to testcpu2.ca.com port 23
Temporary Operator Consoles

> Challenge:
  - System Programmers spread across the country and they need to access the system console
  - Cost prohibitive and impractical for systems programmers to go the data center
  - Doesn’t make sense to hire systems programmers that are located locally
Temporary Operator Consoles

Solution:

- CA VM:Operator’s ‘I AM OPERATOR’ (VMYIAMOP)
  - View activity and issue operator commands
  - No need to go to data center
- Provides access to all CA VM:Operator windows from CMS user console
- All commands and responses recorded in system log
I AM OPERATOR
Automation

> Challenge:
  - Need for z/VM and Linux automation
    - Take automated action or response for events
  - Need to automate repetitive tasks
    - Eliminate human error
  - Notification such as emails for serious events
    - Linux guest unexpectedly reboots
    - Disk space fills up because a mail queue on Linux was not cleared
    - Denial-of-service attack has been detected
    - Backup failed
    - Tape mount was never satisfied
Automation

> Solution:

- CA VM: Operator Action Routines
- Action routines perform a specific action when a message is received
  - routines can be REXX EXECs, macros, modules, etc.
- These routines can:
  - issue commands (CP, CMS, Linux, email, etc)
  - trap and examine messages
  - perform a variety of complex functions
  - spawn or call other action routines
- Action routines complete z/VM and Linux automation
Access Multiple Sessions

> Challenge:

- Need to logon to a user ID from my z/VM 3270 session.
- Need to log on and off many user IDs
- Impractical to use a 3270 emulator window for each user ID
Access Multiple Session

Solution:

- CA VM: Operators’s Session Support Facility provides access to multiple user IDs or 3270 applications from a single console.
- Prevents having to use another terminal.
- The Session Support Facility lets you:
  - Switch between sessions just by pressing a PF key or issuing a command.
  - Notify operators of important messages received on a session.
  - Watch events occurring on a session being displayed on another console.
  - Simulate actions of keyboard and control session without human intervention.
  - Run commands on another session that may be disruptive to operator console.
<table>
<thead>
<tr>
<th>Session</th>
<th>Name</th>
<th>Address</th>
<th>Viewed</th>
<th>Updates</th>
<th>Information</th>
<th>Status</th>
<th>Return</th>
<th>Toggle</th>
<th>Back</th>
<th>Next</th>
</tr>
</thead>
<tbody>
<tr>
<td>SESSION1</td>
<td>L010</td>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td>Logon Reconnect of NEWID took 3.65</td>
<td></td>
<td></td>
<td>PF1</td>
<td>PF2</td>
</tr>
<tr>
<td>SESSION2</td>
<td>L011</td>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td>Logon Reconnect of NEWID1 took 3.70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SESSION3</td>
<td>L012</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>Sample session 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SESSION4</td>
<td>L013</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td>LNXLLOGON DIALOG completed, RC= 0.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LINUX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sessions Window:

1= ViewNext 2= Refresh 3= ViewMain 4= 5= 6= Retrieve
7= Backward 8= Forward 9= Repeat 10= Print 11= Session 12= Cursor

=>> Connected to testcp7.ca.com port 23
Session  001%  28 Users  VM:Operator on OPERATOR(TESTCP7)  Thu 15Oct09  12:05
Name     Address  Last Screen  Status          Return: SYSREQ Toggle: PF3
SESSION1  L010    16   Screen  Logon Reconnect of NEWID took 3.65
SESSION2  L011    16   Screen  Logon Reconnect of NEWID1 took 3.70
SESSION3  L012    1    Screen  Sample session 3
SESSION4  L013    1    Screen  Sample session 4
LINUX     0    Screen  Terminated...

VMYLD0037I Session LINUX on L0015 has been terminated.
> Challenge:

- Need to consolidate messages from SYSLOGD, SYSLOG-NG and z/VM into a single log
- Need messages stored on Linux or z/VM
- Need proper formatting of messages
> **Solution:**

- CA VM: Operator can interoperate with the Linux SYSLOGD or SYSLOG-NG
- CA VM: Operator can send selected messages to a specific Linux host running a central collecting SYSLOGD
- CA VM: Operator acts as a SYSLOGD collector by receiving SYSLOGD or SYSLOG-NG messages from other Linux hosts
- Messages are modified to conform to CA VM: Operator formatting standards
Review window showing syslog-ng messages collected by VM:Operator

```
REVIEW 000% 29 Users VM:Operator Thursday 15Oct09 12:29
VMYREV0125I Reviewing: 091015 SYSLOG Forward Scanning for: DAEMON
12:27:58 LNXIBMDS *S daemon.notice syslog-ng[1304]: syslog-ng starting up; ver
12:27:58 LNXIBMDS *S daemon.err syslog-ng[1304]: Connection failed; error='"Co
12:27:58 LNXIBMDS *S news.info smartd[1492]: Opened configuration file /etc/sm
12:27:58 LNXIBMDS *S news.info smartd[1492]: Drive: DEVICESCAN, implied \'-a\'
12:27:58 LNXIBMDS *S news.info smartd[1492]: Configuration file /etc/smartd.co
12:27:58 LNXIBMDS *S news.crit smartd[1492]: Problem creating device name scan
12:27:58 LNXIBMDS *S news.crit smartd[1492]: In the system\'s table of devices
12:27:58 LNXIBMDS *S news.info smartd[1492]: Unable to monitor any SMART enabl
12:27:58 LNXIBMDS *S mail.info postfix/postfix-script[1518]: starting the Pos
12:27:58 LNXIBMDS *S mail.info postfix/master[1519]: daemon started -- versio
12:27:58 LNXIBMDS *S local0.info /usr/sbin/cron[1539]: (CRON) STARTUP (V5.0)
12:27:58 LNXIBMDS *S uucp.info sshd[1557]: Server listening on 0.0.0.0 port 22
12:27:58 LNXIBMDS *S uucp.info sshd[1557]: Server listening on :: port 22.
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... line=26]
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... hargen-udp] [line=14]
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... e=15]
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... me] [line=16]
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... aytime-udp] [line=14]
12:27:58 LNXIBMDS *S news.debug xinetd[1558]: Reading included configuration
```

Connected to localhost ca.com port 22 | 26/3 | 404 | 12:28:51 IBM-3276-E-K

VMYREV0120R Enter search string: MAINOPER
Review window showing syslog-ng messages collected by VM:Operator

VMYREV0125I Reviewing: 091015 SYSLOG Forward Scanning for: DAEM
12:27:58 LNXIBMDS .... ices] [line=14]
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... ] [line=14]
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... ine=17]
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... -udp] [line=15]
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... e=15]
12:27:58 LNXIBMDS *3 news.notice xinetd[1558]: xinetd Version 2.3.14 started w
12:27:58 LNXIBMDS *3 news.notice xinetd[1558]: Started working: 2 available s
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"C
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.info syslog-ng[1304]: Log statistics; dropped=\"tc
12:27:58 LNXIBMDS .... er(queue)=42\', processed='\'center(received)=42\', proce
12:27:58 LNXIBMDS .... ()=42\'
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
12:27:58 LNXIBMDS *3 daemon.err syslog-ng[1304]: Connection failed; error=\"Co
PF set 1 -- System Review

1= Top  2= Refresh  3= Return  4= PrevHour  5= NextHour  6= Retrieve
7= Backward  8= Forward  9= Extract 10= AltPFkey 11= Left  12= Right

VMYREV0120R Enter search string: MAINOPER
Review window showing syslog-ng messages collected by VM:Operator

REVIEW 002% 28 Users VM:Operator on VMYGUIRI (TESTCPI7) Thu 15Oct09 12:35
VMYREV0119I Reviewing: 091015 SYSLOG Backward scrolling.
12:27:46 VMYGUIRI 0005 CAS91151 -- LMP input: *
12:27:58 LNXIBMDS *3 daemon.notice syslog-ng[1304]: syslog-ng starting up; ver
12:27:58 LNXIBMDS *8 daemon.err syslog-ng[1304]: Connection failed; error="\'Co
12:27:58 LNXIBMDS *8 news.info smartd[1492]: Opened configuration file /etc/sm
12:27:58 LNXIBMDS *8 news.info smartd[1492]: Drive: DEVICE_SCAN, implied "'-a"
12:27:58 LNXIBMDS *8 news.info smartd[1492]: Configuration file /etc/smartd.co
12:27:58 LNXIBMDS *3 news.crit smartd[1492]: Problem creating device name scan
12:27:58 LNXIBMDS *8 news.info smartd[1492]: In the system\'s table of devices
12:27:58 LNXIBMDS *8 news.info smartd[1492]: Unable to monitor any SMART enabl
12:27:58 LNXIBMDS *8 mail.info postfix/postfix-script[1518]: starting the Pos
12:27:58 LNXIBMDS *3 mail.info postfix/master[1519]: daemon started -- version
12:27:58 LNXIBMDS *8 local0.info /usr/sbin/cron[1539]: (CRON) STARTUP (V5.0)
12:27:58 LNXIBMDS *8 uucp.info sshd[1557]: Server listening on 0.0.0.0 port 22
12:27:58 LNXIBMDS *8 uucp.info sshd[1557]: Server listening on :: port 22.
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... line=26
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... hagen-udp [line=14]
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... e=15
12:27:58 LNXIBMDS *3 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... me [line=16]
12:27:58 LNXIBMDS *8 news.debug xinetd[1558]: Reading included configuration f
12:27:58 LNXIBMDS .... uptime-udp [line=14]
PF set 1 ---------------------------------- System Review
1= Top 2= Refresh 3= Return 4= PrevHour 5= NextHour 6= Retrieve
7= Backward 8= Forward 9= Extract 10= AltPFkey 11= Left 12= Right
VMYREV012OR Enter search string: _

Connected to testcpu2.ca.com port 23 | 305x4 | 14Mi | 12:36:03 IBM-3278-3-K
Remote z/VM Systems

> Challenge:

- Need to issue operator commands to a number of remote z/VM systems
- Need to issue remote operator commands at the same time
- Need to issue remote operator commands from one place
- Need to route messages to remote systems
Remote z/VM Systems

> Solution:

- Remote CA VM:Operator Support (RVS) can issue commands on remote z/VM systems
- Commands respond and behave as if they are being issued locally
- Messages can be routed to specific CA VM:Operator systems for processing
RVS: REMOTE command from CA
VM:Operator SYSTEM WINDOW

SYSTEM 000% 16 Users VM:Operator on OPERATOR(ZVM610) Thu 15Oct09 11:19
DASD 0AFF CP SYSTEM VMVSEI 0
DASD 0IAB CP SYSTEM PAVALA 0
VMYINI0006I 0.000 Ready;
rvs query
NodeID Status WriteCtr ReadCtr
---------- -------------- ---------------
ZVM530 Enabled 32 32
ZVM540 Enabled 42 42
VMYINI0006I 0.000 Ready;
remote zvm530 cp q names
VMRMAINT -L0003, GUIRIO1 -L0004, VMWEBSRV - DSC, LOGN0009 - 0009
VSMREQIN - DSC, IMLST01 - DSC, VSMWORK2 - DSC, RSCS - DSC
VSMWORK1 - DSC, VSPSERV - DSC, VMSERVER - DSC, VMNFS - DSC
RSCSDNS - DSC, PORTMAP - DSC, FTPSERVE - DSC, GCS - DSC
TCP/IP - DSC, VMX$0003 - DSC, VMX$0002 - DSC, VMX$0001 - DSC
VMSECURE - DSC, OPERATOR -L000C
VSM - TCP/IP
VMYINI0006I 0.000 Ready;
remote zvm540 cp q names
VMRMAINT - DSC, CAIMAIN - DSC, VMSPOOL - DSC, VMBACKUP - DSC
VMTAPE - DSC, LOGN0009 - 0009, IMLST01 - 0021, VSMPROXY - DSC
VSMREQIN - DSC, VSMWORK2 - DSC, VSMWORK1 - DSC, RSCS - DSC
VSPSERV - DSC, RSCSDNS - DSC, FTPSERVE - DSC, GCS - DSC
TCP/IP - DSC, VMX$0002 - DSC, VMX$0001 - DSC, VMSECURE - DSC
DISKACNT - DSC, OPERATOR - 0022
VSM - TCP/IP
VMYINI0006I 0.000 Ready;

SYSTEM Window
1= ViewNext 2= Review 3= ViewPrev 4= RemvLine 5= Remv All 6= Retrieve
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top

----> MAINOPER
Using REMOTE commands from a user

```plaintext
operator rvs query
NodeID  Status  WriteCtr  ReadCtr
--------  --------  --------  --------
ZVM530    Enabled   63        63
ZVM540    Enabled   50        50
Ready: T=0.01/0.01 11:20:40

operator remote zvm530 cp query names
VMRMAINT -L0003, GUIRIO11 -L0004, VMWEBSRV - DSC, LOGN0009 - 0009
VSMREQIN - DSC, IMLST01 - DSC, VSMWORK2 - DSC, RSCS - DSC
VSMWORK1 - DSC, VSPSERV - DSC, VMSEVRVS - DSC, VMNFS - DSC
RSCSNS - DSC, PORTMAP - DSC, FTPSERVE - DSC, GCS - DSC
TCPIP - DSC, VMK$0003 - DSC, VMK$0002 - DSC, VMK$0001 - DSC
VMSECURE - DSC, OPERATOR -L000C
VSM - TCP/IP
Ready: T=0.01/0.01 11:20:47

operator remote zvm540 cp query names
VMRMAINT - DSC, CAIMAINT - DSC, VMSPool - DSC, VMbackups - DSC
VMTAPE - DSC, LOGN0009 - 0009, IMLST01 - 0021, VSMPROXY - DSC
VSMREQIN - DSC, VSMWORK2 - DSC, VSMWORK1 - DSC, RSCS - DSC
VSRSERV - DSC, RSCSNS - DSC, FTPSERVE - DSC, GCS - DSC
TCPIP - DSC, VMK$0002 - DSC, VMK$0001 - DSC, VMSECURE - DSC
DISKACNT - DSC, OPERATOR - 0022
VSM - TCP/IP
Ready: T=0.01/0.01 11:20:52
```
Conclusion

VM:Operator™ DELIVERS

> Increased Productivity
> Increased Efficiency
> Improved Auditability

PROVEN TECHNOLOGY

> Automated Actions
> Message Filtering
> Multiple Consoles

Event Automation for z/VM and Linux
Questions and Answers

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