

IBM z Systems

Operational Monitoring and Automation of z/VM and Linux on z Systems

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IBM

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Agenda

- Introduction to recommended practices and examples
- Overview of product being used
 - IBM Operations Manager for z/VM
- Considerations for z/VM Single System Image
- Recommended practices in detail
 - Live demonstrations
- Summary
 - Reference information
 - Additional demos
 - Configuration options and sample code for all demos

IBM z/VM Management Solutions

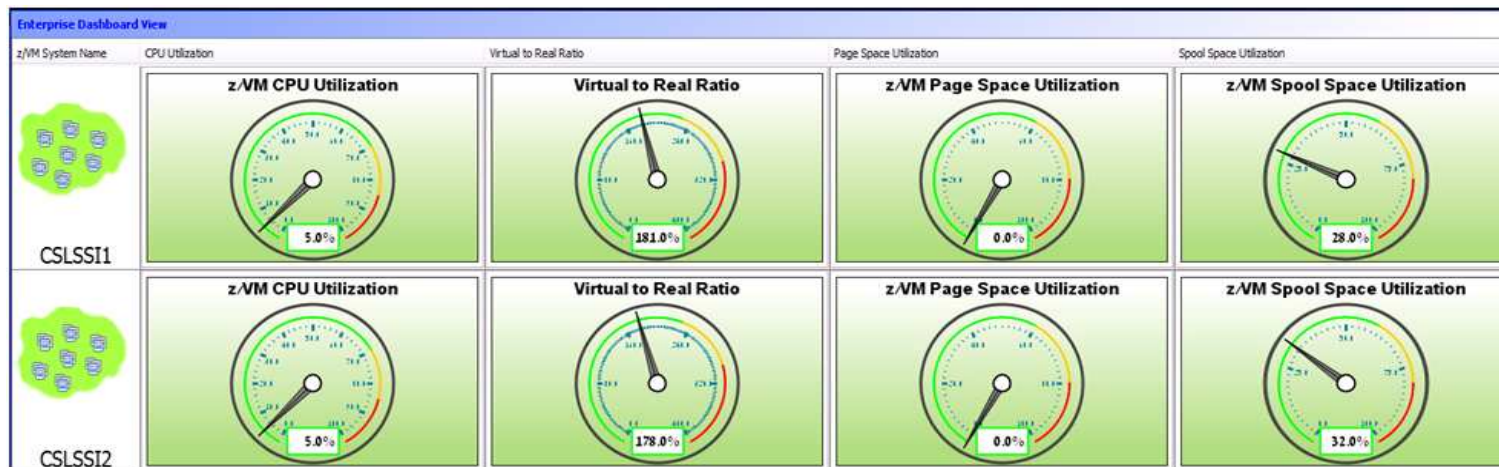
- Security
 - RACF and zSecure Manager for z/VM
- Performance monitoring
 - OMEGAMON XE on z/VM and Linux
 - Performance Toolkit for z/VM
- **Backup and recovery**
 - Backup and Restore Manager for z/VM
 - Tape Manager for z/VM
 - Spectrum Protect (aka Tivoli Storage Manager)
- Automation and operational monitoring
 - Operations Manager for z/VM
 - Including integration with existing monitoring and alert systems
- Interactive provisioning and system resource management
 - IBM Wave for z/VM

IBM Wave for z/VM and Operations Manager for z/VM

- IBM **Wave** for z/VM provides an **interactive** GUI interface for:
 - Provisioning of Linux guests
 - Basic performance information
 - Monitoring of virtual server **resources**
 - z/VM and Linux administrator tasks
- **Operations Manager** for z/VM provides **operational monitoring** & automation
 - **In the background**
 - Monitoring of console messages for z/VM service machines and Linux guests
 - Monitoring “state” information for z/VM service machines and Linux guests
 - Monitoring spool and page space on the z/VM system
 - Automated responses to these monitors when they are triggered
 - Email
 - SNMP alerts
 - Integration with IBM Tivoli Netcool/OMNibus enterprise alert system
 - Actions that address the problem immediately in addition to or instead of alert notification
 - **Interactive when needed**
 - View and interact with live service machine and Linux guest consoles
 - View and manage spool files
- **Complementary** solutions
 - Use Operations Manager to monitor Wave service machines
 - Use Operations Manager to automatically initiate tasks in Wave via the Wave CLI

IBM Wave for z/VM and OMEGAMON XE on z/VM and Linux

- IBM **Wave** for z/VM provides **point in time** monitoring of virtual server resources from a single graphical interface



- **OMEGAMON XE** on z/VM and Linux provides
 - **Deeper level** monitoring of z/VM
 - Deeper level monitoring of individual Linux guest environments
 - Ability to set service level **thresholds** and generate **events** when exceeded
 - **Historical** view of monitoring data
- Both OMEGAMON XE on z/VM and Linux and IBM Wave can **coexist** in customer environments
- Both gather the data from the **Performance Toolkit** for z/VM

Operational Monitoring and Automation



Recommended Practices – Operational Monitoring and Automation

Monitor consoles of Linux guests and CMS service machines


- Operations staff monitoring multiple consoles or a central console of alerts
- System programmers debugging a problem on a guest or service machine – view and issue commands on the console

Generate alerts and/or automatically recover from

- Abend, termination, or error messages
- Service machine disks approaching full
- Critical user IDs or guests being logged off or entering error state
- Spool and/or page space approaching full

Schedule automated system maintenance procedures

- Spool cleanup based on policies
- Minidisk cleanup (from logs), including archiving
- Orderly startup and shutdown
 - Relocation of critical guests to another SSI member
- Backups of z/VM system and or Linux guests



**Keep monitoring
close to the
operating system**



Product Overview
IBM Operations Manager for z/VM

Automation Demos Available

1. View consoles of Linux guests, Linux syslog data, and CMS user IDs or service machines
2. Send an e-mail based on a console message
3. **Send an alert to Netcool/OMNIbus based on a console message, hold and unhold messages**
 - a. Using POSTZMSG interface to Netcool/OMNIbus
 - b. **Using SNMP interface to Netcool/OMNIbus**
4. **Send a message or email if spool approaches full**
 - a. Send a message if spool usage is too high on any member of an SSI Cluster – see how spool files appear in SSI
 - b. **Send an email if spool usage is too high on a single system**
5. **View and clean up spool files**
6. Automated spool cleanup
7. Archiving DIRMAINT's log files when disk gets full
8. Process a file of test messages as a console
9. Process Linux syslog data as a console
10. Create a central operations console on one z/VM system
11. Create a central operations console across multiple z/VM systems
 - a. When the systems are in an SSI cluster
 - b. When the systems are not in an SSI cluster
12. Monitor service machines for logoff – and autolog them
13. Send an email if page space approaches full
14. Monitor SSI connectivity between 2 cluster members
15. Suppress passwords on Linux consoles
16. Autolog a Linux guest and send message if doesn't start successfully
17. Monitor Linux file system and send email when approaching full
18. Send alerts to other tools via syslog
19. Non-SSI high availability environment: monitor LPAR CPU utilization – if too high, stop a guest and restart on another LPAR

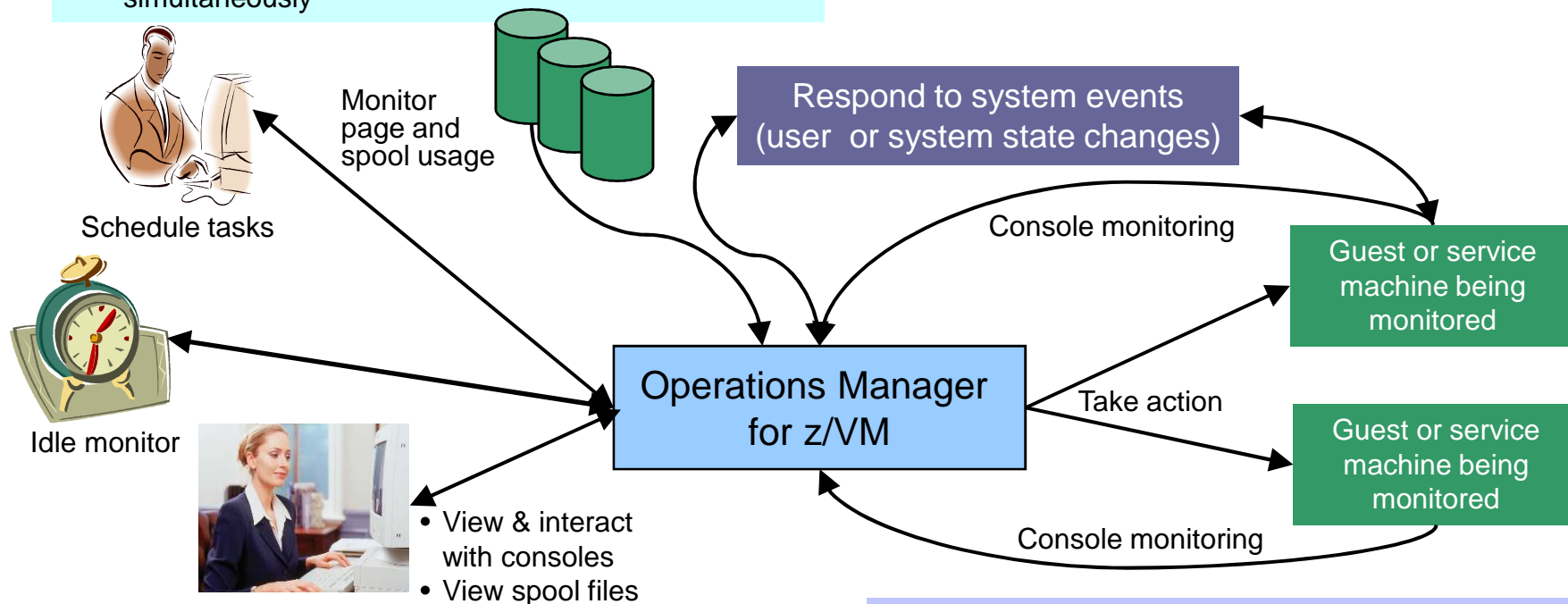
Operations Manager for z/VM

Increase productivity

- Authorized users to view and interact with monitored virtual machines without logging onto them
- Multiple users view/interact with a virtual machine simultaneously

Improve system availability

- Monitor virtual machines and processes
- Take automated actions based on console messages
- Reduce problems due to operator error



Automation

- Routine activities done more effectively with minimal operations staff
- Schedule tasks to occur on a regular basis

Integration

- Fulfill take action requests from performance monitoring products (e.g. OMEGAMON XE on z/VM and Linux)
- Send alerts to email, central event management systems (e.g. Netcool/OMNIBus), etc.

Features and Functions

- Monitor service machine consoles
- Monitor page space and spool usage
- Monitor system events
- Schedule events/actions
- Take actions automatically based on monitoring results
 - Includes taking actions on other z/VM systems with Operations Manager
- View and interact with monitored consoles from authorized user IDs
- Find and view spool files
- Dynamic configuration
- Separation of access control

Dynamic Configuration

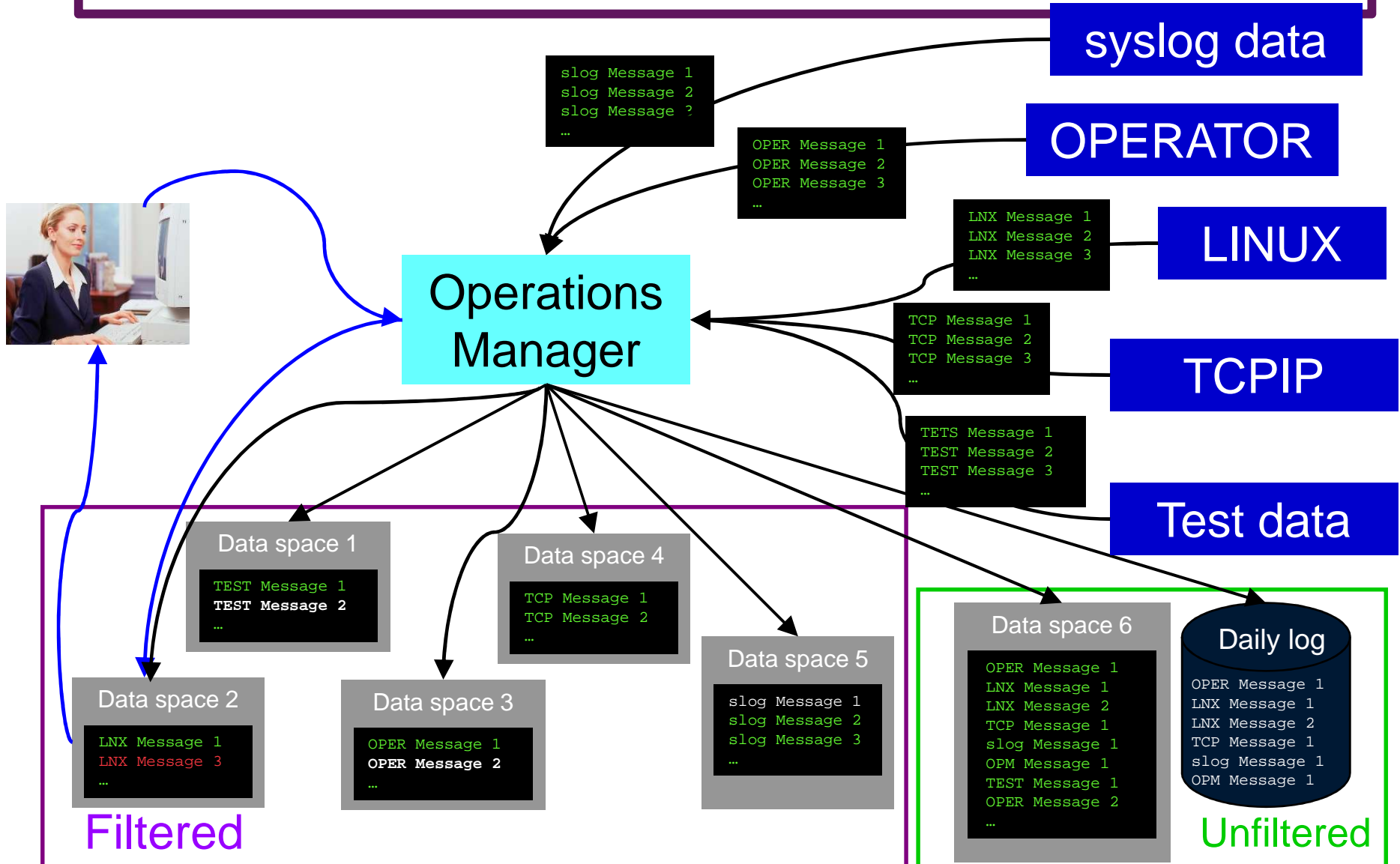
- **Initial configuration** file loaded at startup
 - May imbed other configuration files
 - Filename can be a substitution variable for the system name
- Most **configuration options** can be **updated** while **Operations Manager is running**
 - Add, delete, or change:
 - Rules, actions, monitors, schedules, holidays, groups, user authorization
 - **Suspend or resume** rules, monitors, schedules
- Multiple methods
 - CMS command interface
 - (Re)load a new or updated configuration file
 - Commands in action routines
- **Sample configuration** files provided
 - Includes some of the demos in this presentation
 - Operations Manager configuration statements
 - **Sample REXX** code



View and Issue Commands on Consoles
Linux Guests and CMS Service Machines

Generate Alerts and/or Automatically Recover From
Abend Messages
Termination Messages
Error Messages

Monitor Guest and Service Machine Consoles



View and Interact with Consoles

- Authorized users can **view live consoles** of monitored service machines & guests
 - **Multiple users** can view the same console simultaneously
 - No need to logon to the user ID to see its console
 - No interruption of the user ID
 - No need to create and close console files of disjointed data
 - Test data and Linux syslog data treated as a “console”
 - Views can be defined to look at a group of consoles in one view
 - Can specify a date and time range for your view within currently available data
 - Can request a copy of the current console data for a user or set of users
 - Format of date in the view is based on requestor’s CP DATEFORMAT setting
- Full screen mode
 - **Scroll** up and down to view and search historical data
 - Auto scroll (on or off) as new output is displayed on the console
 - From command line, **issue commands** back to the monitored console
- Amount of data that is visible depends on specified or default data space size
 - Or date/time range specified
- Rules/actions may modify the view
 - **Suppress messages** from the console
 - **Hold or highlight messages** with color, blinking, etc.
- Authorized users can view the log file
 - Can also request a copy of the log file from today or a previous day

Monitor Service Machines

- Define rules to
 - Scan **console messages** for **text matching**
 - Includes column, wildcard, and exclusion support
 - Optionally restrict to specific user ID(s)
 - **Take actions** based on matches
- Multiple rules can apply to one message
 - Rules processed in order of definition in the configuration file
 - FINAL option available to indicate no additional rules should be evaluated

Executing Actions

- Define action(s) to be triggered
 - Specify action to take as part of the console rule definition
 - Action is taken when match is found
 - Types of actions
 - Change color, highlight, hold, or suppress a console message
 - **CP or CMS commands**
 - **REXX** EXECs, for example:
 - Send email
 - Send SNMP trap
 - Clean up a disk
 - **Write** data out on a **TCP/IP** port
 - E.g. send data to a syslog daemon/server

Executing Actions

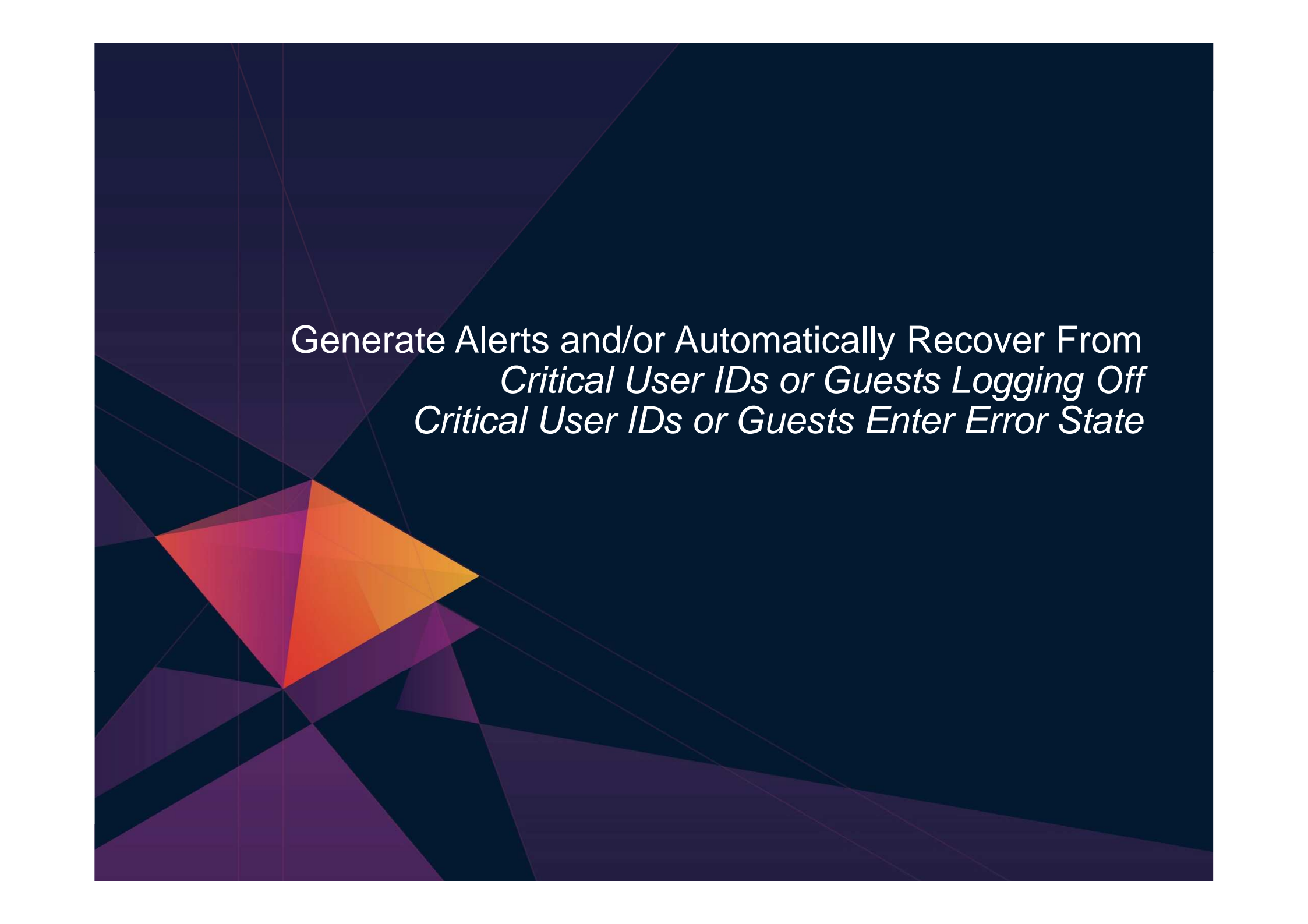
- Dynamically include data about the triggering event
 - Available to the action via substitution variables
- Limit the number of times an action is taken in a specified period of time
 - Avoid executing action repeatedly
 - Take a different action when the limit is reached
- Take multiple actions based on one message
 - Chain actions together
- **Execute the action on another LPAR** running Operations Manager
 - Communication is IP-based
 - **Does not require SSI**

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Additional Operational Monitoring

Additional Monitoring and Automation Capabilities

- Event monitoring
 - User ID run status
 - SSI and network status
- Monitor page and spool space
 - Current state and growth rate
- Scheduling
- Idle monitor
 - Events/monitors not occurring as expected



Generate Alerts and/or Automatically Recover From
Critical User IDs or Guests Logging Off
Critical User IDs or Guests Enter Error State

Respond to System Events (Guest State Changes)

- Create monitors for z/VM system events (*VMEVENT)
 - Class 0, related to **user IDs**
 - 0 - Logon
 - 1 - **Logoff**
 - 2 - Failure condition (including **CP READ and Disabled Wait**)
 - 3 - Logoff timeout started
 - 4 - Forced sleep started
 - 5 - Runnable state entered (VM READ)
 - 6 - Free storage limit exceeded
 - 9 - Outbound relocation started
 - 10 - Inbound relocation started
 - 11 - **Outbound relocation complete**
 - 12 - Inbound relocation complete
 - 13 - **Outbound relocation terminated**
 - 14 - Inbound relocation terminated
 - 15 – Timebomb exploded
 - Optionally restrict to specific user ID(s)

Respond to System Events (System State Changes)

- Class 2 and 3, **related to SSI**
 - 7 – SSI Mode (Stable, Influx, Safe)
 - 8 – SSI Member State (Down, Joining, Joined, Leaving, Isolated, Suspended, Unknown)
- Class 4, related to **networking**
 - 16 – Device activated
 - 17 – Additional device activated
 - 18 – Device deactivated, connection to hardware still operational
 - 19 – Device deactivated, connection to hardware not operational
- Specify the **action** associated with the event
 - Actions specified are the same as those for schedules, console rules, and other monitors



Generate Alerts and/or Automatically Recover From
Spool Space Approaching Full
Page Space Approaching Full

Monitor Page and Spool Usage, View Spool Files

- Create page and spool space monitors to trigger actions when
 - Percent of spool usage falls within a **specified range**
 - Percent of spool usage increases at a specified rate
 - Percent of page space usage falls within a specified range
 - Percent of page space **usage increases** at a specified rate
- Actions triggered can be the same actions used by console monitoring
- For spool files, authorized users can
 - **Full screen interface to list of spool files** based on one or more attributes
 - Owner
 - Size
 - Date created
 - From the list, the user can
 - **Sort** the list on any of the available columns
 - **View the contents** of an individual spool file
 - **Purge**, transfer, or change a spool file

Schedule Automated System Maintenance Procedures

Monitor for Rules, Monitors and Schedules Not Triggered

Spool Cleanup Based on Policies

Backups

Disk Cleanup

Orderly Startup and Shutdown

Schedule Events and Actions

- Define schedules
 - Hourly, daily, weekly, monthly, or yearly, nth weekday of the month
 - Once on specified month, day, year, and time
 - Based on ISO week definitions (week number; even, odd, first, last week)
 - At regular intervals
 - Every x hours and y minutes
 - Within a specified window of time
 - Specify start time
 - Specify conflicting schedules
 - Specify maximum time to defer this schedule
 - Within limits
 - Restrict to specific days of the week: Monday through Sunday plus holidays
 - Restrict to certain hours of the day

- Specify the action associated with the schedule
 - Actions specified are the same as those for console rules and all other monitors

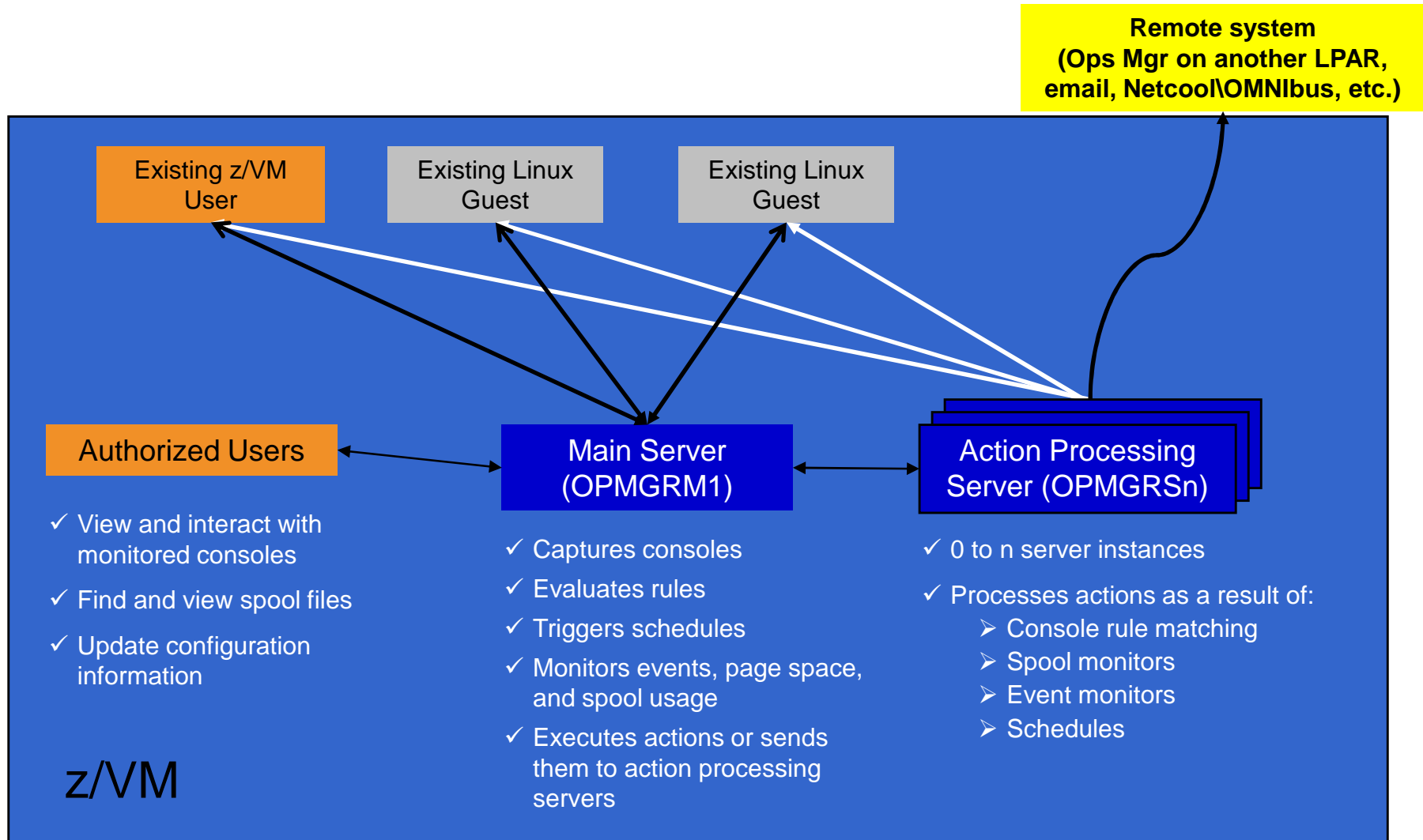
Idle Monitors

- Define idle monitors
 - Watch for idle rules, schedules, and monitors
 - Rule, schedule, or monitor **not triggered** *n* number of times within specified period of time
- Specify the action associated with the idle monitor
 - Actions specified are the same as those for schedules, console rules, other monitors



SSI vs non-SSI Considerations

Operations Manager - non-SSI Environment





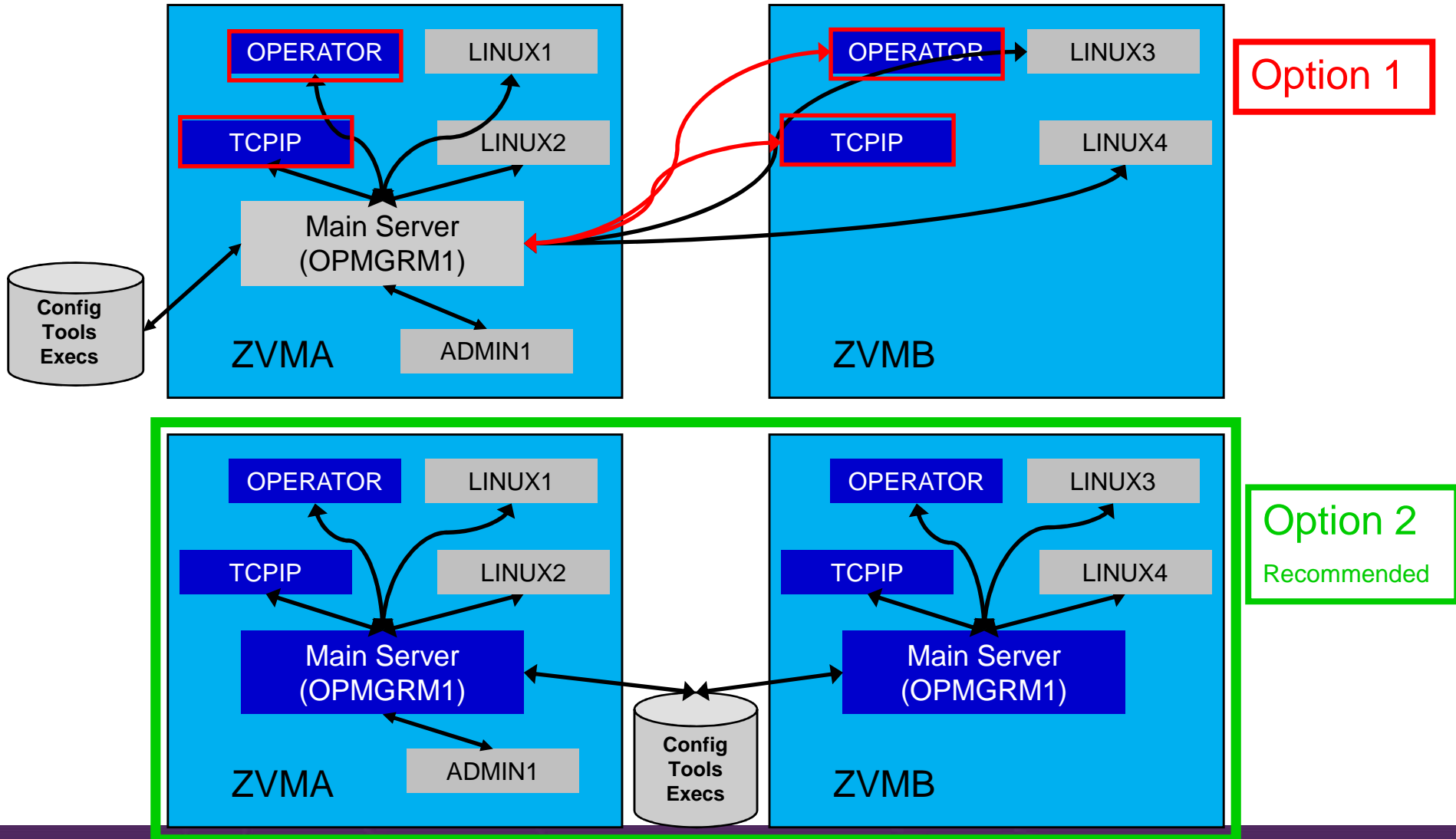
SSI Considerations

Console Monitoring

SSI Considerations for Console Monitoring

Single Config User

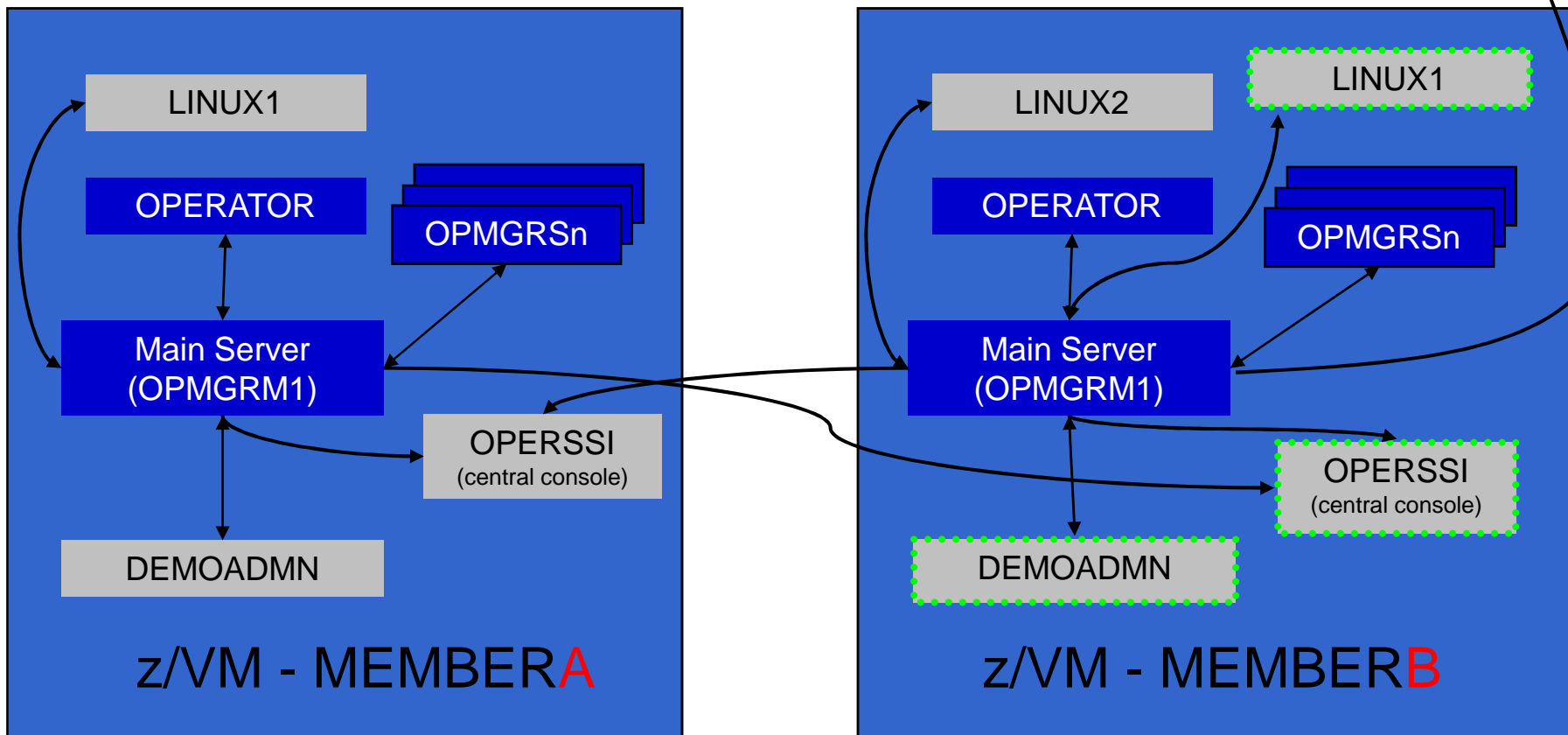
Multiconfig User



Operations Manager in SSI Cluster - Example

Remote system
(z/VM, email,
Netcool\OMNibus, etc.)

- Multiconfiguration users: OPMGRM1, OPMGRSn, OPERATOR, MAINT
- Single configuration users: RHEL5G, SLES11C, OPERSSI, DEMOADMN
 - May relocate OPERSSI and DEMOADMN manually (supported) or via VMRELOCATE (unsupported, but you can make it work)



Relocating OPERSSI and DEMOADMN (CMS Users) ...

- VMRELOCATE for CMS user IDs not officially supported
- Can be done for some CMS users
 - Create single configuration user ID for z/VM system disks
 - Copy MAINT 190, 19D, 19E to minidisks owned by this new user ID
 - Use DDR for 190 since it needs to be IPLable
 - Relocateable CMS user must IPL from identical NSS (CMS) or minidisk (190)
 - Use SPXTAPE to copy CMS NSS
 - VMRELOCATE uses checksum of NSS to determine if identical
 - CMS NSS includes date/time it was loaded
 - Or, have relocateable CMS users IPL 190 instead of IPL CMS

OPERSSI DIRECT

```

USER OPERSSI ...
...
OPTION CHPIDVIRTUALIZATION ONE
...
IPL 190
...
LINK CMAINT 0190 0190 RR
LINK CMAINT 019D 019D RR
LINK CMAINT 019E 019E RR
...

```

PROFILE EXEC

```

/* PROFILE EXEC for OPERSSI */
...
'SET RELPAGE OFF'
...

```

... Relocating OPERSSI and DEMOADMN (CMS Users)

➤ Beware

- It's worth repeating ... **VMRELOCATE for CMS user IDs not officially supported**
- All members of the cluster must be kept at same z/VM (or at least CMS) code level
- If IPL 190, will use more memory as each user ID will have private copy of CMS
- SET RELPAGE OFF may have a negative impact on overall system performance
- Only works for “basic” CMS users
 - All relocation rules still apply
 - E.g. user IDs connecting to VMCF or IUCV can't relocate

Monitor Service Machines - Considerations

- Consoles received by Operations Manager via SECUSER or OBSERVER
 - Prefer SECUSER
 - OBSERVER won't detect CP and VM READ messages
 - Output of actions on OBSERVED console may not be viewable in console
 - OBSERVER allows Operations Manager to receive console output even if user is logged on
- SSI allows SECUSER and OBSERVER across members of cluster in some situations
 - Content does not contain member name information
 - Rules, actions, and users wouldn't be able to distinguish between IDENTITY users on multiple members
 - Creates single point of failure on one member
- Recommendation for z/VM V6.2 or V6.3 Single System Image environments
 - Have all consoles monitored by an Operations Manager server on the same member as the monitored guest (i.e. all Operations Manager servers are IDENTITY users)
 - Requires action processing servers (OPMGRSn) to be on same member as main server
 - Share configuration data on minidisk owned by single configuration user
 - For example: VMTOOLS 198
 - Master configuration file unique to each member
 - Imbed common file(s) used by all members
 - Request a copy of the current console of a remote user
 - `SMSG OPMGRM1 at membername VIEWCON USER(userid),MODE(RDR)`



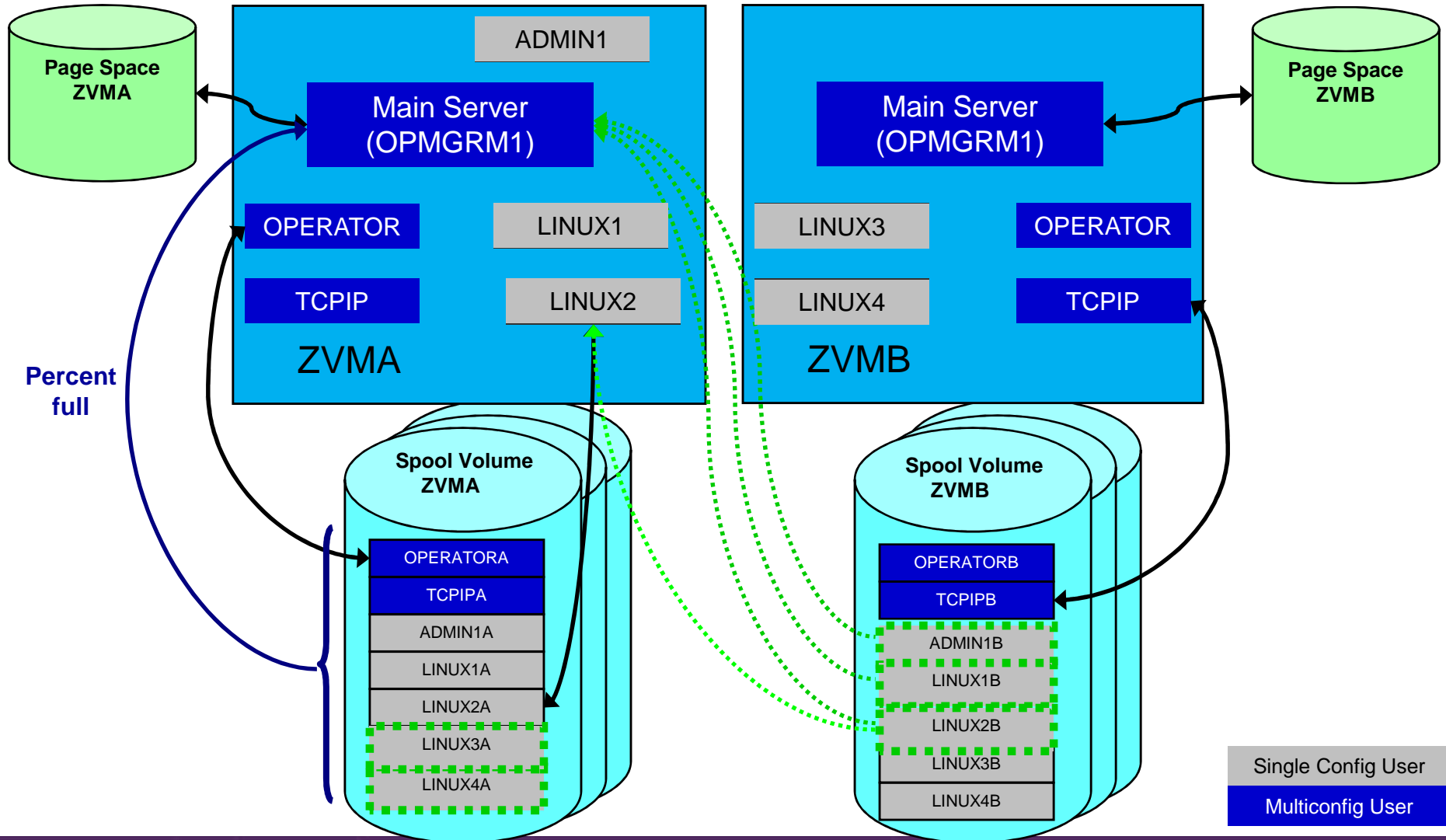
SSI Considerations

Page Space Monitoring

Spool Space Monitoring

Viewing and Managing Spool Files

SSI Considerations for Spool and Page Space Monitoring



Spool and Page Space Monitoring - Considerations

- Page space is local
 - Separate space for each member and only visible to the local member
 - **No impact from SSI**
- Spool data
 - Spool files are placed on spool volumes owned by the member where the spool file was created
 - Users see their own spool data no matter where they are logged on and where the data was created

Spool and Page Space Monitoring - Considerations

Users and applications (like Operations Manager) who can see all spool files need to be aware:

- Spool data for **multiconfiguration** users
 - Only spool files owned by the local instance of that user are visible on the local member
 - No visibility to spool files owned by other instances of that user on other members
- Spool data for single configuration users:

Single configuration user Status	Spool files created on <u>this</u> member	Spool files created on <u>other</u> members
User logged off	Visible	Not visible
User logged onto <u>this</u> member	Visible	Visible (but not on local spool volumes)
User logged onto <u>another</u> member	Visible	Not visible

Spool and Page Space Monitoring - Considerations

➤ Recommendation

- Have an Operations Manager server on each member to monitor spool and page space
- Be aware of spool files visible in Operations Manager but not resident on this member's spool volumes
 - Indicated with "+" in VIEWSPPL



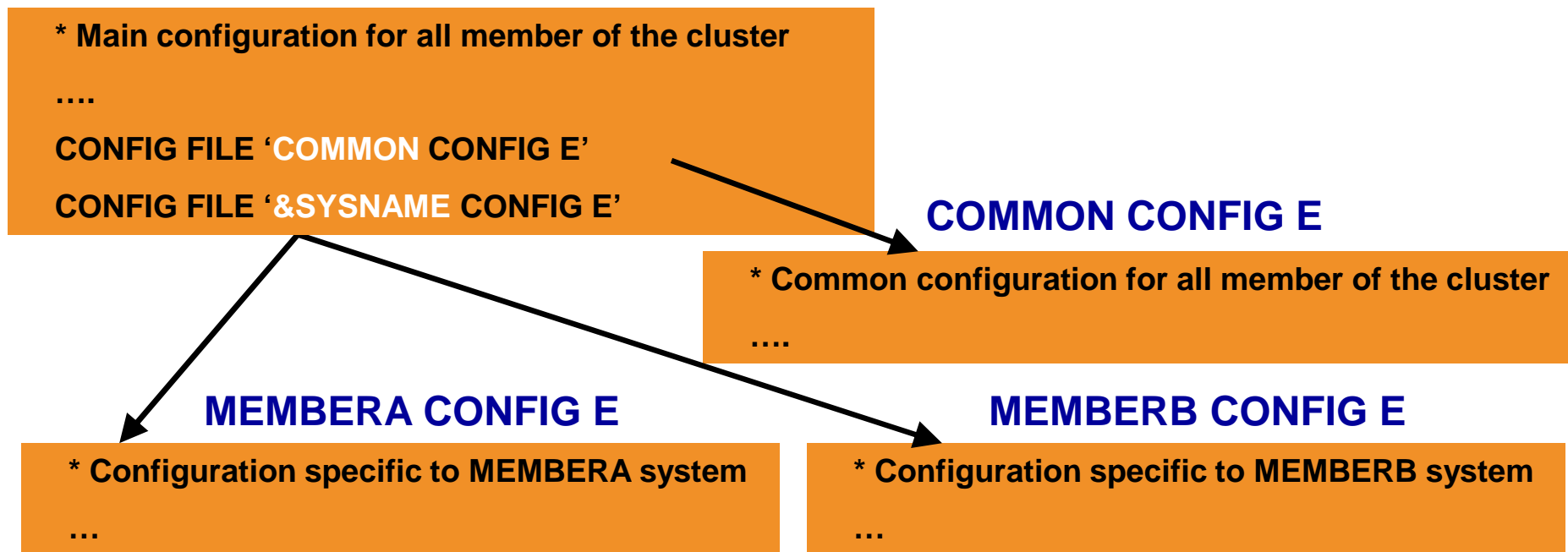
SSI Considerations

Managing Configuration Files

Managing Configuration Files

- Put all configuration files on a shared disk
 - Default is 198 disk for OPMGRM1 – in **IDENTITY** section
 - Alternatively SFS
- Create a main configuration file with authorizations and system settings – shared by all members
 - All Operations Manager servers on all members load this file
- Create a common configuration file used by all members
- Imbed a unique configuration file based on the system name of this member

OPMGRM1 CONFIG E





Summary

References

Demos – Including Screenshots, Configuration Info, REXX

Recommended Practices – Operational Management

View and issue commands on consoles of Linux guests and CMS service machines

- Operations staff monitoring multiple consoles or a central console of alerts
- System programmers debugging a problem on a guest or service machine

VIEWCON

Generate alerts and/or automatically recover from

- Abend, termination, or error messages
- Service machine disks approaching full
- Critical user IDs or guests being logged off or entering error state
- Spool and/or page space approaching full

Schedules

Event monitors

Rules

Spool/Page monitors

Schedules

Schedule automated system maintenance procedures

- Spool cleanup based on policies
- Minidisk cleanup (from logs), including archiving
- Orderly startup and shutdown
 - Relocation of critical guests to another SSI member
- Backups of z/VM system

Rules, Archive Mgr

SFPURGER

Rules, monitors

Backup Manager

Summary

- Use Operations Manager to
 - **Automate** daily operations
 - **Integrate** your z/VM and Linux on z Systems environment with existing enterprise monitoring and **alerting**
 - Prevent problems rather than react to them
 - Automate reactions to problems when they can't be prevented
 - **Improve problem determination** procedures
 - Increase programmer and operator productivity
 - Continue to monitor locally with improved management of clusters
- Sometimes several alternatives for monitoring for the same event
 - Console message (rules)
 - Scheduled healthchecks (schedules)
 - User ID status changes (event monitor)
- Actions allow integration with other platforms and products

Complete Solution for administration and management of the z/VM and Linux on z Systems or LinuxONE environment



Single PID

5698-IS2 OTC
5698-IS1 Annual S&S

IBM Infrastructure Suite for z/VM and Linux

OMEGAMON XE on z/VM and Linux

Performance monitoring of z/VM and Linux guests

Spectrum Protect (formerly TSM)

File Level backup and recovery for Linux Virtual Machines

IBM Wave for z/VM

Simple, intuitive, graphical z/VM administration and provisioning tool

Operations Manager for z/VM

Facilitate operational monitoring and automated operations, take action based on events

Backup and Restore Manager for z/VM

Image and file level backup and restore of z/VM environment
Image level backup and restore of Linux

Add Tape Manager for z/VM (5697-J08) for customers backing up from z/VM to tape

Reference Information

- Web sites
 - Product page: <http://www.ibm.com/software/products/en/operations-manager-for-zvm>
 - Publications, presentation, white papers
 - Pre-requisites
 - Support
- Infrastructure Suite **wiki**: – **Videos of demos**
 - <http://ibm.biz/Bd4up3>
- e-mail
 - Tracy Dean, tld1@us.ibm.com, Offering Manager
- White papers on Operations Manager website (Resources tab)
 - Routing Linux syslog data
 - Sending alerts from Operations Manager to Netcool/OMNIBus
 - Using Shared File System to store Operations Manager configuration files and automation EXECs
 - Automatically logging on a user at Linux system boot time for easier console management and action execution
 - Enabling the FACILITY Class for Use by RACF for z/VM
- **IBMVM** Mailing list
 - <http://listserv.uark.edu/archives/ibmvm.html>

धन्यवाद

Hindi

多謝

Traditional Chinese

감사합니다

Korean

Спасибо

Russian

Ndzi khense ngopfu

Tsonga

Gracias

Spanish

شكراً

Arabic

Thank

English

You

Obrigado

Brazilian Portuguese

Grazie

Italian

多谢

Simplified Chinese

Danke

German

Ke a leboha

Tswana

Merci

French

நன்றி

Tamil

ありがとうございました

Japanese

ขอบคุณ

Thai

The background features a dark blue gradient with abstract geometric shapes in shades of purple and orange. A prominent shape in the lower-left quadrant is a multi-faceted polygon with a color gradient from purple to orange. The overall aesthetic is modern and technical.

Demonstration Scenarios

Automation Demos Available

1. **View consoles of Linux guests, Linux syslog data, and CMS user IDs or service machines**
2. Send an e-mail based on a console message
3. **Send an alert to Netcool/OMNIBus based on a console message, hold and unhold messages**
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15. **Suppress passwords on Linux consoles**
16. Autolog a Linux guest and send message if doesn't start successfully
17. Monitor Linux file system and send email when approaching full
18. Send alerts to other tools via syslog
19. Non-SSI high availability environment: monitor LPAR CPU utilization – if too high, stop a guest and restart on another LPAR

Scenario 1: View Live Consoles of Linux Guests, Linux Syslog Data, CMS Service Machines

- Configure user IDs / guests to be monitored by Operations Manager
- Route syslog data from a Linux guest to Operations Manager
- From authorized user, view the live console data of
 - OPERATOR
 - Issue VM commands
 - A Linux guest
 - Issue Linux commands
 - Linux syslog data
- View combined consoles

Scenario 1: Detailed Steps

- Review the directory entries for the monitored users

```
x operator direct
```

```
x slesb112 direct
```

- From an authorized VM user ID, verify OPERATOR and Linux guest are being monitored by Operations Manager

```
q secuser operator
```

```
q observer slesb112
```

- View the console of OPERATOR

```
viewcon operator
```

- Issue VM commands allowed by OPERATOR

```
id
```

- View the console of a Linux guest and issue Linux commands

```
viewcon slesb112
```

```
free -m
```

```
df -h
```

```
Ls -al
```

- View the syslog data from a Linux guest

```
viewcon lxsyslog
```

```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
OPERATOR DIRECT A1 V 80 Trunc=80 Size=54 Line=0 Col=1 Alt=0
-----
T...+...1...+...2...+...3...+...4...+...5...+...6...+...7.>

===== * * * Top of File * * *
===== IDENTITY OPERATOR XXXXXXXX 32M 32M ABCDEFG
===== DVHRXV3355I The following records are included from profile: IBMDFLT
===== PROFILE IBMDFLT
===== SPOOL 000C 2540 READER *
===== SPOOL 000D 2540 PUNCH A
===== SPOOL 000E 1400 A
===== CONSOLE 009 3215 T OPMGRM1
===== LINK MAINT 0190 0190 RR
===== LINK MAINT 019D 019D RR
===== LINK MAINT 019E 019E RR
===== LINK MAINT 0402 0402 RR
===== LINK MAINT 0401 0401 RR
===== *
===== *****
===== *
===== *DVHOPT LNK0 LOG1 RCM1 SMS0 NPW1 LNGAMENG PWC20141030 CRC>R
===== DVHRXV3355I The preceding records are included from profile: IBMDFLT
===== DVHRXV3366I The following configurations will be used on SSI nodes.
===== DVHRXV3366I The following configuration OPERTR-1 will be used on SSI
===== DVHRXV3366I node *.
===== SUBCONFIG OPERTR-1
===== LINK OP1 191 192 RR
===== MDISK 191 3390 2924 005 M01RES MR XXXXXXXX XXXXXXXX XXXXXXXX
=====
===== *SUBCONFIG OPERTR-2
===== * LINK OP1 191 192 RR
=====
MA C 02/007
Connected to remote server/host 9.82.24.129 using port 23

```

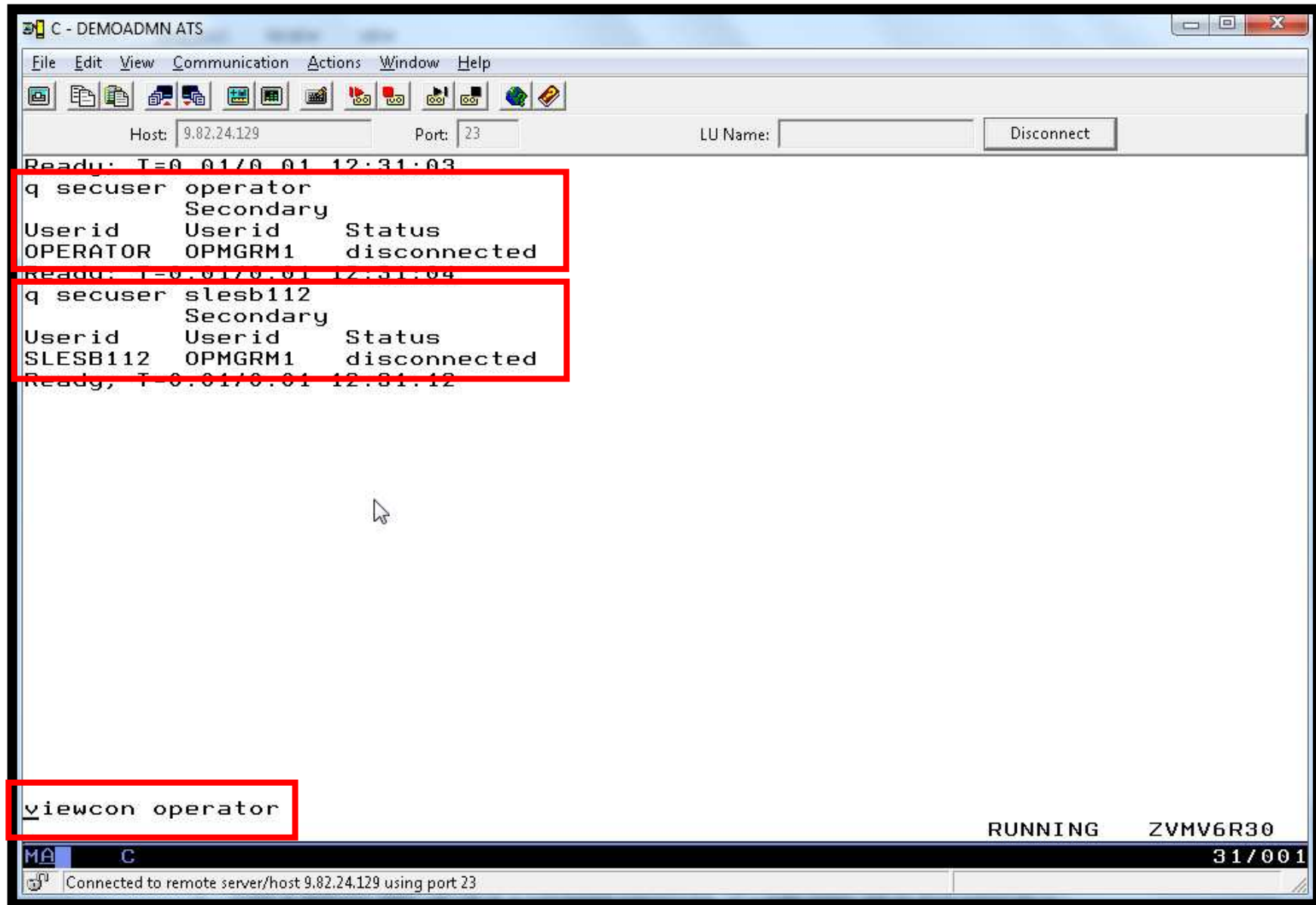


```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
SLESB112 DIRECT A1 V 80 Trunc=80 Size=47 Line=0 Col=1 Alt=0
-----
T...+...1...+...2...+...3...+...4...+...5...+...6...+...7.>

===== * * * Top of File * * *
===== USER SLESB112 XXXXXXXX 2G 4G BG
===== *
===== * IP ADDRESS 9.82.56.112
===== * Guest for Mike B
===== *
===== CPU 00 CPUID 000005
===== *CPU 01 CPUID 100005
===== IPL CMS PARM AUTOCR
===== IUCV ANY PRIORITY MSGLIMIT 2000
===== IUCV ALLOW
===== MACHINE ESA 2
===== XAUTOLOG OMEGACMD
===== OPTION MAINTCCW RMCHINFO APPL MON
===== CONSOLE 001F 3215 T OPMGRM1
===== *
===== * z/VM Guest LAN
===== *
===== SPECIAL 0800 QDIO 3 SYSTEM DELTA
===== *
===== SPOOL 000C 2540 READER *
===== SPOOL 000D 2540 PUNCH A
===== SPOOL 000E 1403 A
===== *
===== LINK MAINT 0190 0190 RR
===== LINK MAINT 019D 019D RR
===== LINK MAINT 019E 019E RR

MA C 02/007
Connected to remote server/host 9.82.24.129 using port 23
  
```



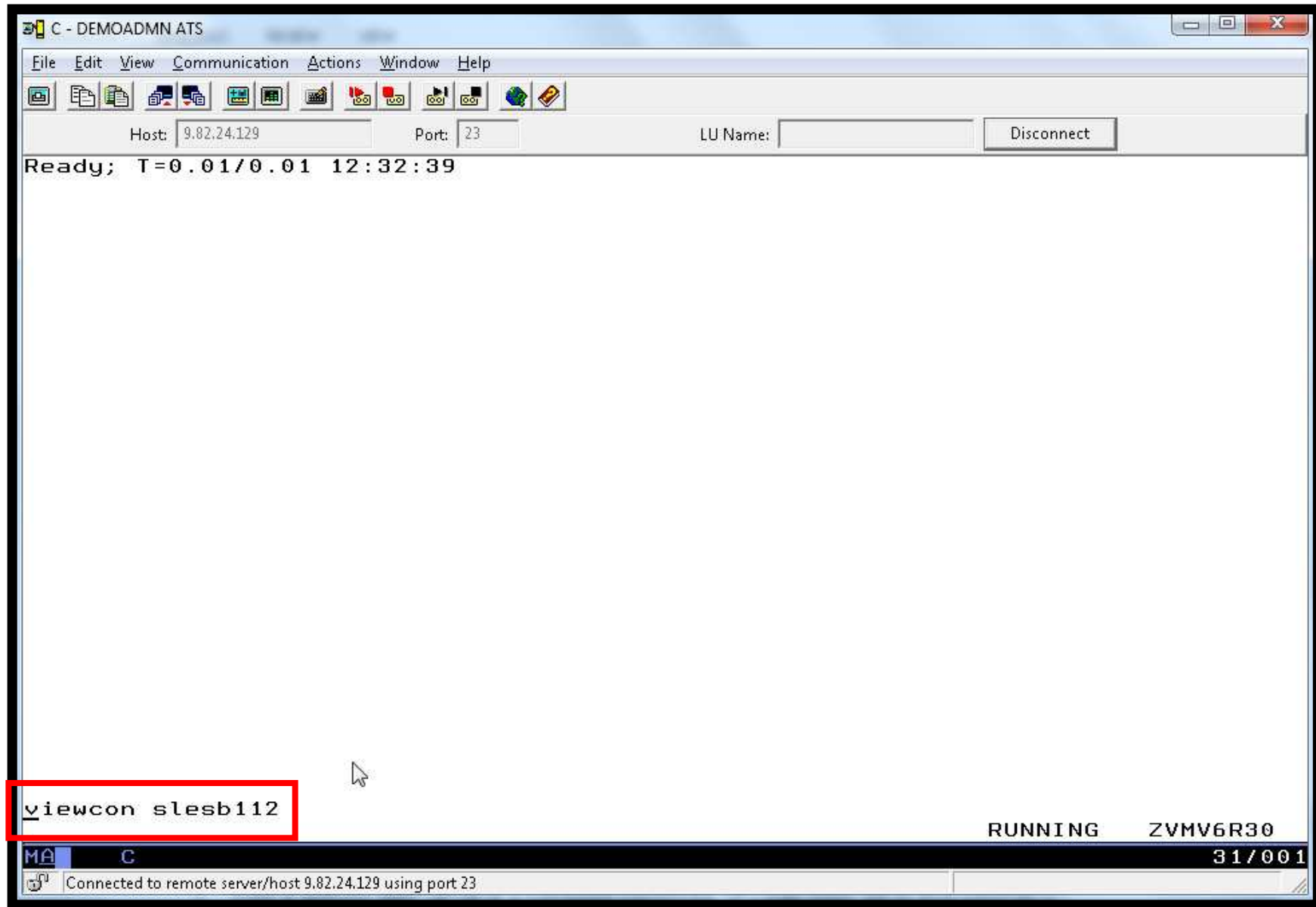
```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
11:49:09
11:49:16 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
11:49:16 q names
11:51:26 RDR FILE 0029 SENT FROM OPERATOR CON WAS 0029 RECS 4836 CPY 001 T NOH
11:51:29 AUTO LOGON *** OPERATOR USERS = 63 BY OPMGRS4
11:51:29 z/VM V6.3.0 2015-02-18 10:21
11:51:29 DMSACP723I D (192) R/O
11:51:29 Ready; T=0.01/0.01 11:51:29
12:01:02 DVHRLY3886I Hourly processing started; with 0 log
12:01:02 DVHRLY3886I files.
12:01:02 DVHRLY3886I Hourly processing started; with 0 log
12:01:02 DVHRLY3886I files.
12:24:00 USER DSC LOGOFF AS SLESB104 USERS = 62 AFTER SIGNAL
12:24:14 AUTO LOGON *** SLESB104 USERS = 63 BY MAINT630
12:32:08 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
12:32:08 id
12:32:08 OPERATOR AT ZVMV6R30 VIA * 12/09/16 12:32:08 EDT FRIDAY
12:32:08 Ready; T=0.01/0.01 12:32:08

PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL

OPERATOR-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

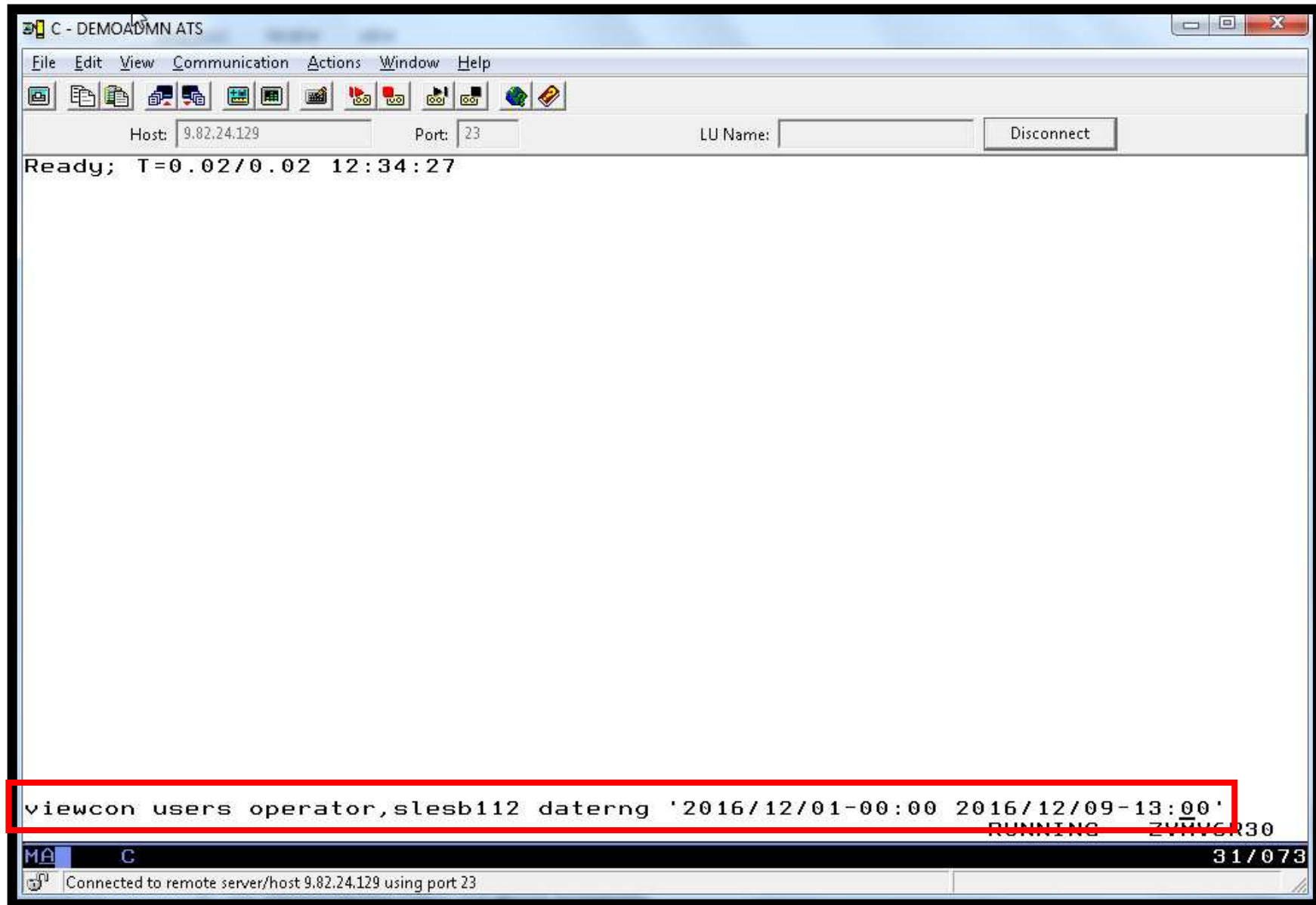
```



```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:33:47 -rw----- 1 root root 5205 Dec 8 11:27 .viminfo
12:33:47 drwxr-xr-x 2 root root 4096 Oct 7 2014 .vnc
12:33:47 drwxr-xr-x 2 root root 4096 Oct 7 2014 .zypp
12:33:47 -rw-r--r-- 1 root root 48020 Jan 31 2012 autoinst.xml
12:33:47 drwxr-xr-x 2 root root 4096 May 5 2010 bin
12:33:47 drwxr-xr-x 2 root root 4096 Oct 7 2014 hasle337
12:33:47 drwxr-xr-x 6 root root 4096 Oct 7 2014 inst-sys
12:33:47 -rwxr-xr-x 1 root root 71 Mar 23 2012 run_lgiall_http.sh
12:33:47 -rw-r--r-- 1 root root 1714238 Mar 23 2012 urlload.log
12:33:47 -rw-r--r-- 1 root root 126 Mar 23 2012 unload_lgiall_http_props
12:33:47 hasl112: ~ #
12:33:58 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
12:33:58 df -h
12:33:58 df -h
12:33:58 Filesystem      Size  Used Avail Use% Mounted on
12:33:58 /dev/mapper/System-root 6.8G 3.9G 2.6G 60% /
12:33:58 udev             1001M 104K 1001M 1% /dev
12:33:58 tmpfs            1001M 0 1001M 0% /dev/shm
12:33:58 /dev/dasdb1     68M 26M 39M 40% /boot
12:33:58 hasl112: ~ #
12:34:00 * -- operations manager VIEWCON session from DEMOADMN entered the foll
12:34:00 free -m
12:34:00 free -m
12:34:00          total          used          free          shared          buffers          cac
12:34:00 Mem:           2001             314           1687              0              31
12:34:00 -/+ buffers/cache:             73           1928
12:34:00 Swap:              0              0              0
12:34:00 hasl112: ~ #
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB112-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

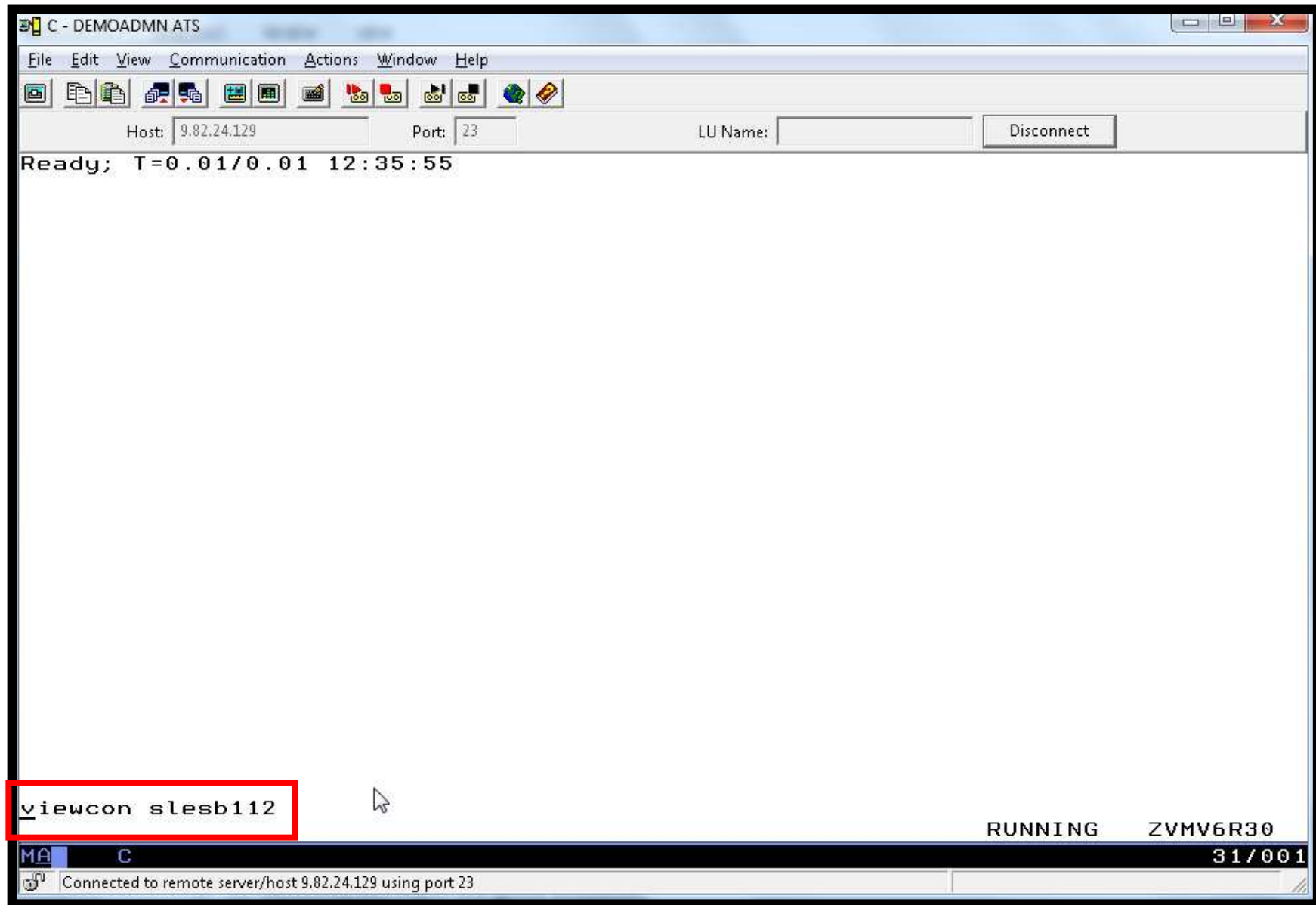
```

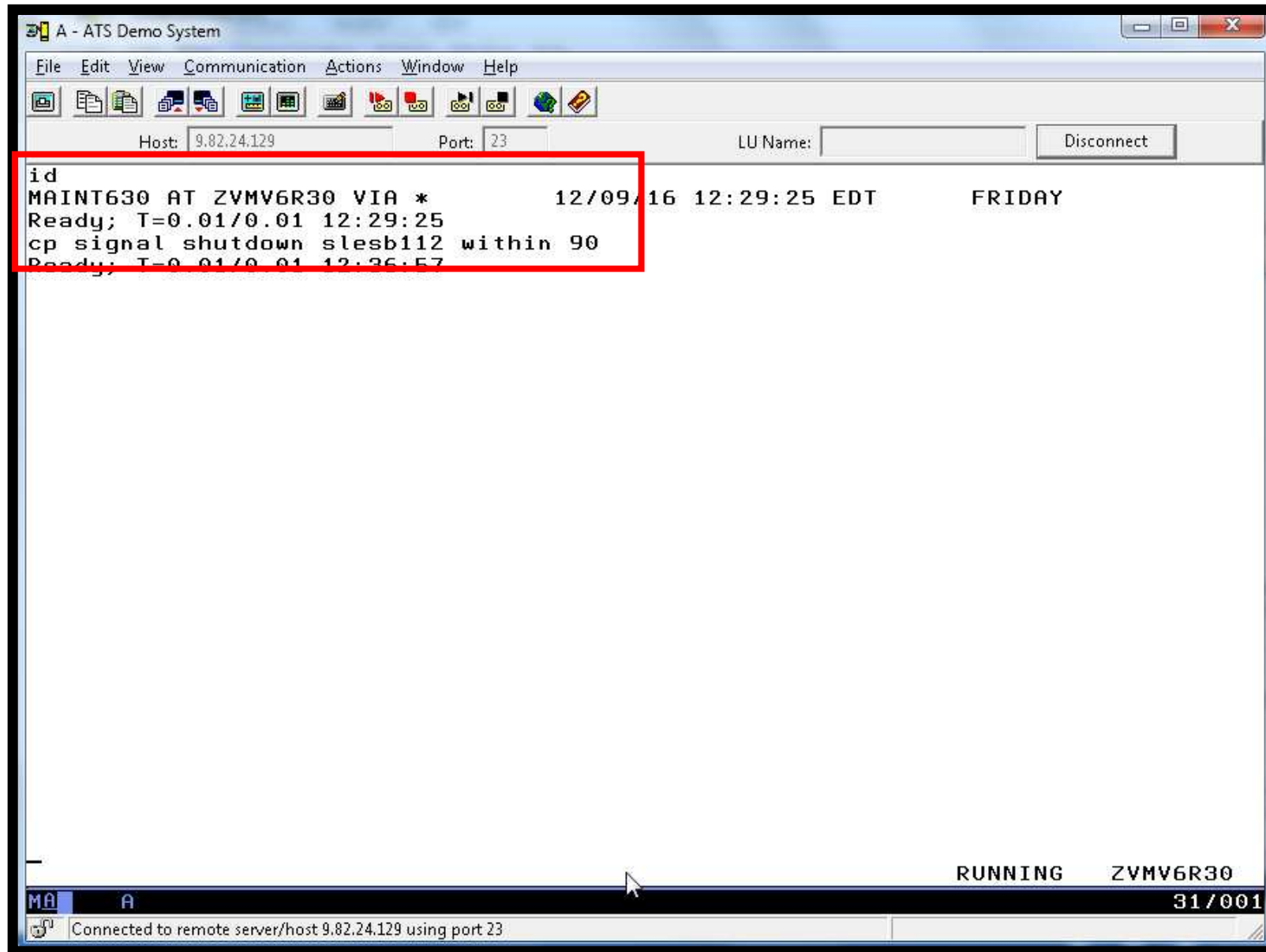


```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:03:46 SLESB112 Skipped services in runlevel 5: [80C[43Dnfs smbfs irq_balance
12:03:46 SLESB112 Welcome to SUSE Linux Enterprise Server 11 SP3 (s390x) - Ker
12:03:46 SLESB112 hasl112 login:
19:38:20 SLESB112 Dec 8 18:38:20 hasl112 sshd[5596]: error: PAM: Authenticatio
19:39:29 SLESB112 Dec 8 18:39:29 hasl112 sshd[5596]: error: PAM: Authenticatio
19:39:32 SLESB112 Dec 8 18:39:32 hasl112 sshd[5596]: error: PAM: Authenticatio
00:00:00 SLESB112 HCPMID6001I TIME IS 00:00:00 EDT FRIDAY 12/09/16
11:49:09 OPERATOR
11:49:16 OPERATOR * -- Operations Manager VIEWCON session from DEMOADMN entered
11:49:16 OPERATOR q names
11:51:26 OPERATOR RDR FILE 0029 SENT FROM OPERATOR CON WAS 0029 RECS 4836 CPY
11:51:29 OPERATOR AUTO LOGON *** OPERATOR USERS = 63 BY OPMGRS4
11:51:29 OPERATOR z/VM V6.3.0 2015-02-18 10:21
11:51:29 OPERATOR DMSACP723I D (192) R/O
11:51:29 OPERATOR Ready; T=0.01/0.01 11:51:29
12:01:02 OPERATOR DVHRLY3886I Hourly processing started; with 0 log
12:01:02 OPERATOR DVHRLY3886I files.
12:01:02 OPERATOR DVHRLY3886I Hourly processing started; with 0 log
12:01:02 OPERATOR DVHRLY3886I files.
12:24:00 OPERATOR USER DSC LOGOFF AS SLESB104 USERS = 62 AFTER SIGNAL
12:24:14 OPERATOR AUTO LOGON *** SLESB104 USERS = 63 BY MAINT630
12:32:08 OPERATOR * -- Operations Manager VIEWCON session from DEMOADMN entered
12:32:08 OPERATOR id
12:32:08 OPERATOR OPERATOR AT ZVMV6R30 VIA * 12/09/16 12:32:08 EDT
12:32:08 OPERATOR Ready; T=0.01/0.01 12:32:08
12:33:07 SLESB112 * -- Operations Manager VIEWCON session from DEMOADMN entered
12:33:07 SLESB112 df -h
12:33:07 SLESB112 df -h
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
$TMP0001-ZVMV6R30
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

```





```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:33:47 -rwxr-xr-x 1 root root 71 Mar 23 2012 run_lgiall_http.sh
12:33:47 -rw-r--r-- 1 root root 1714238 Mar 23 2012 urlload.log
12:33:47 -rw-r--r-- 1 root root 126 Mar 23 2012 urlload_lgiall_http.prope
12:33:47 hasl112:~ #
12:33:58 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
12:33:58 df -h
12:33:58 df -h
12:33:58 Filesystem Size Used Avail Use% Mounted on
12:33:58 /dev/mapper/System-root 6.8G 3.9G 2.6G 60% /
12:33:58 udev 1001M 104K 1001M 1% /dev
12:33:58 tmpfs 1001M 0 1001M 0% /dev/shm
12:33:58 /dev/dasdb1 68M 26M 39M 40% /boot
12:33:58 hasl112:~ #
12:34:00 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
12:34:00 free -m
12:34:00 free -m
12:34:00 total used free shared buffers cac
12:34:00 Mem: 2001 314 1687 0 31
12:34:00 -/+ buffers/cache: 73 1928
12:34:00 Swap: 0 0 0
12:34:00 hasl112:~ #
12:36:57 Broadcast message from root (console) (Fri Dec 9 11:36:57 2016):
12:36:57 The system is going down for reboot NOW!
12:36:57 INIT: Switching to runlevel: 6
12:36:57 INIT: Sending processes the TERM signal
12:37:01 INIT: Sending processes the KILL signal
12:37:02 Boot logging started on /dev/ttyS0((no tty)) at Fri Dec 9 11:37:02 20
12:37:02 Master Resource Control: previous runlevel: 5, switching to runlevel:
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB112-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:37:26 ..done
12:37:26 Turning off swap files
12:37:26 Unloading AppArmor profiles audit_printk_skb: 21 callbacks suppressed
12:37:26 type=1400 audit(1481301446.784:19): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:20): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:21): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:22): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:23): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:24): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:25): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:26): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:27): apparmor="STATUS" operation="profi
12:37:26 type=1400 audit(1481301446.784:28): apparmor="STATUS" operation="profi
12:37:26 ..done
12:37:26 Unmounting file systems
12:37:26 /dev/dasdb1 has been unmounted
12:37:26 ..done Can't deactivate volume group "System" with 1 open logical vol
12:37:26 ..done
12:37:26 Not shutting down MD RAID - reboot/halt scripts do this...missing
12:37:26 Sending all processes the TERM signal...
12:37:26 Stopping udevd: done
12:37:26 ..done
12:37:26 Sending all processes the KILL signal...
12:37:26 ..done
12:37:27 Please stand by while rebooting the system...
12:37:28 HCPGIR450W CP entered; disabled wait PSW 00020001 80000000 00000000 00
12:37:28 CONNECT= 24:34:31 VIRTCPU= 001:02.31 TOTCPU= 001:03.78
12:37:28 LOGOFF AT 12:37:28 EDT FRIDAY 12/09/16 AFTER SIGNAL
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB112-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

The screenshot shows a terminal window titled "A - ATS Demo System". The window has a menu bar with "File", "Edit", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The terminal interface includes fields for "Host: 9.82.24.129", "Port: 23", and "LU Name:". A "Disconnect" button is located to the right of the "LU Name" field. The terminal output is as follows:

```
id
MAINT630 AT ZVMV6R30 VIA *          12/09/16 12:29:25 EDT      FRIDAY
Ready; T=0.01/0.01 12:29:25
cp signal shutdown slesb112 within 90
Ready; T=0.01/0.01 12:30:57
HCPSIG2113I User SLESB112 has reported successful termination
USER DSC   LOGOFF AS  SLESB112 USERS = 62   AFTER SIGNAL
```

A red box highlights the message: "HCPSIG2113I User SLESB112 has reported successful termination USER DSC LOGOFF AS SLESB112 USERS = 62 AFTER SIGNAL".

At the bottom of the terminal, the command "xautolog slesb112_" is entered and highlighted with a red box. The status bar at the bottom right shows "RUNNING ZVMV6R30 31/018". The status bar at the bottom left shows "MA A" and "Connected to remote server/host 9.82.24.129 using port 23".

```

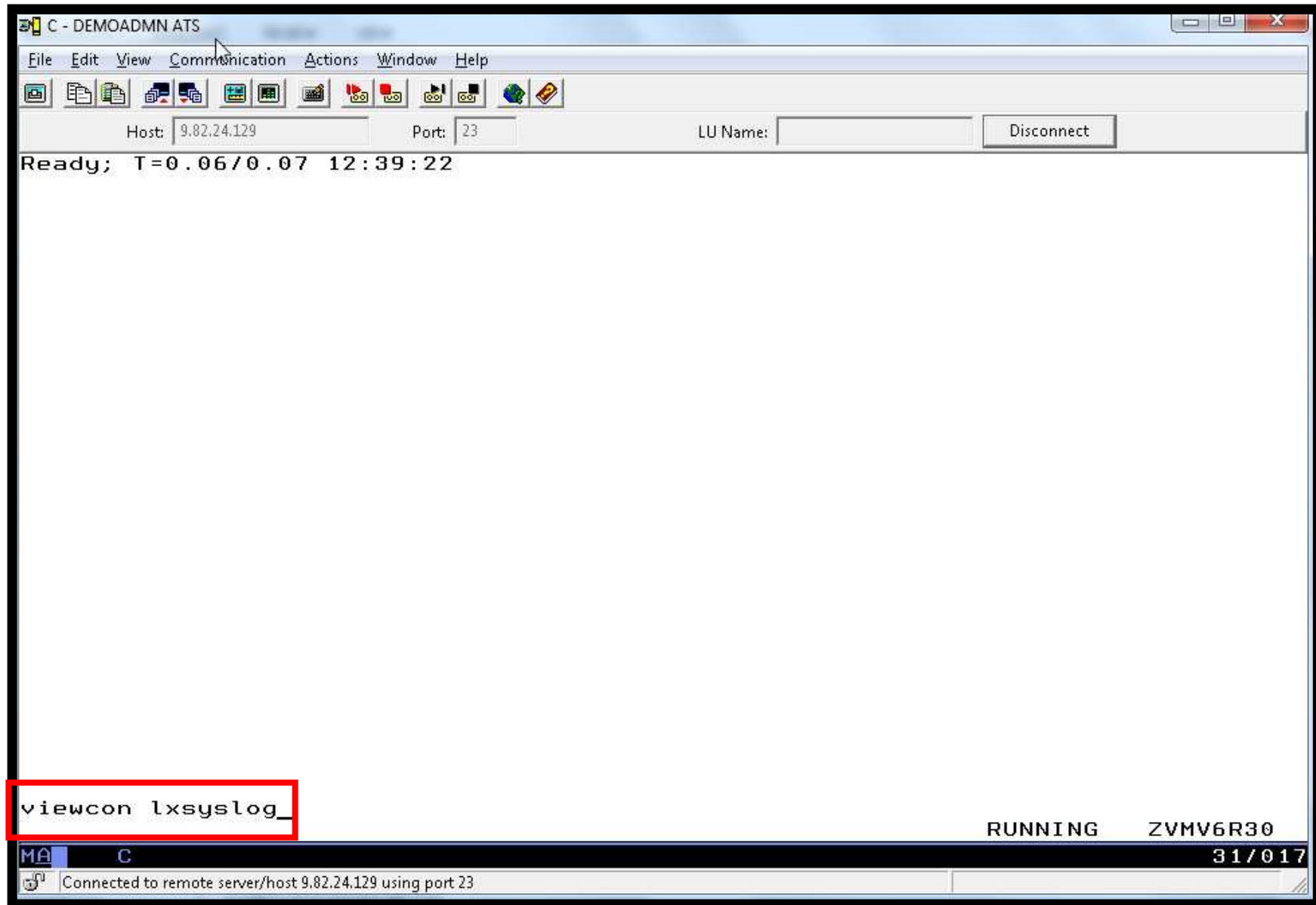
C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:37:26 ..done
12:37:26 Unmounting file systems
12:37:26 /dev/dasdb1 has been unmounted
12:37:26 ..done Can't deactivate volume group "System" with 1 open logical vol
12:37:26 ..done
12:37:26 Not shutting down MD RAID - reboot/halt scripts do this...missing
12:37:26 Sending all processes the TERM signal...
12:37:26 Stopping udevd: ..done
12:37:26 ..done
12:37:26 Sending all processes the KILL signal...
12:37:26 ..done
12:37:27 Please stand by while rebooting the system...
12:37:28 HCPGIR450W CP entered; disabled wait PSW 00020001 80000000 00000000 00
12:37:28 CONNECT= 24:34:31 VIRTCPU= 001:02.31 TOTCPU= 001:03.78
12:37:28 LOGOFF AT 12:37:28 EDT FRIDAY 12/09/16 AFTER SIGNAL
12:38:16 NIC 0800 is created; devices 0800-0802 defined
12:38:16 z/VM V6.3.0 2015-02-18 10:21
12:38:16 DMSACP723I X (592) R/O
12:38:16 DASD 2000 DEFINED
12:38:16 DASD 029F DEFINED
12:38:16 DASD 029F 9336 (VDSK) R/W 102400 BLK ON DASD VDSK SUBCHANNEL = 00
12:38:16 zIPL v1.15.0-0.136.13 interactive boot menu
12:38:16 0. default (SLES11_SP3)
12:38:16 1. SLES11_SP3
12:38:16 2. Failsafe_1
12:38:16 3. ipl
12:38:16 Note: VM users please use '#cp vi vmmsg <number> <kernel-parameters>'
12:38:16 Please choose (default will boot in 10 seconds):
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB112-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

```

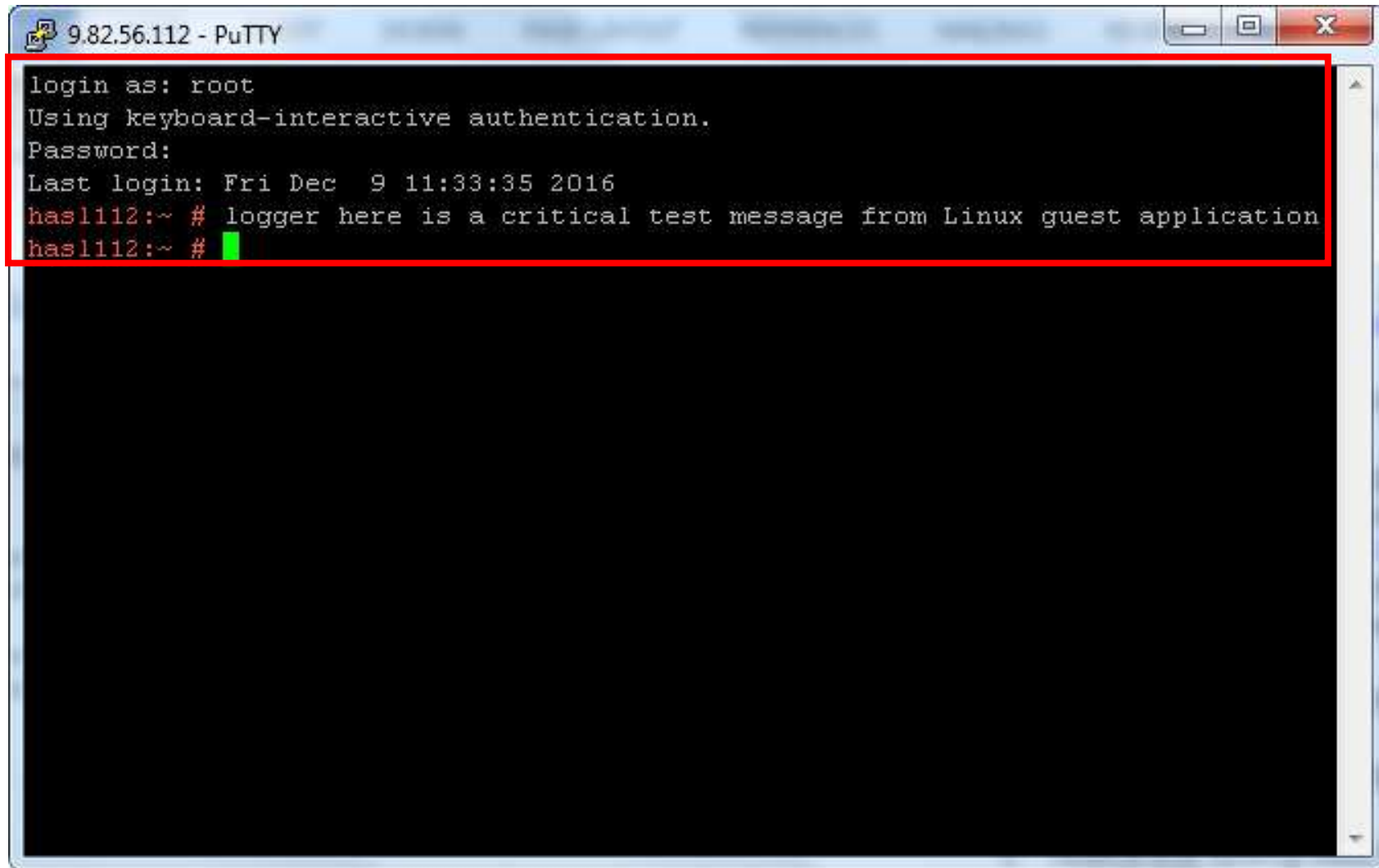
C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:38:34 Starting syslog services..done
12:38:34 Starting auditd
12:38:34 ..done
12:38:34 Starting haveged daemon
12:38:34 ..done
12:38:34 Starting rpcbind ..done
12:38:34 Not starting NFS client services - no NFS found in /etc/fstab:..unused
12:38:34 Mount CIFS File Systems ..unused
12:38:34 Starting irqbalance ..unused
12:38:34 Setting up (remotefs) network interfaces:
12:38:34 Setting up service (remotefs) network . . . . .d
12:38:35 Starting SSH daemon..done
12:38:35 Starting cupsd
12:38:35 ..done
12:38:35 Starting Name Service Cache Daemon..done
12:38:35 Starting mail service (Postfix)
12:38:35 ..done
12:38:35 Starting service gdm
12:38:35 ..done
12:38:36 Starting CRON daemon..done
12:38:36 Starting smartd ..unused
12:38:36 Starting INET services. (xinetd)
12:38:37 ..done
12:38:58 Master Resource Control:
12:38:59 runlevel 5 has been reached
12:38:59 Skipped services in runlevel 5: [80C[43Dnfs smbfs irq_balancer splash
12:38:59 Welcome to SUSE Linux Enterprise Server 11 SP3 (s390x) - Kernel 3.0.7
12:38:59 hasl112 login:
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB112-ZVMV6R30 (Scroll)
31/001
Connected to remote server/host 9.82.24.129 using port 23

```



```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <29>Dec 9 11:38:35 hasl112 xinetdY2655": xinetd Version 2.3.14 starte
12:38:35 <29>Dec 9 11:38:35 hasl112 xinetdY2655": Started working: 2 available
12:38:36 <37>Dec 9 11:38:36 hasl112 sd. (to root) root on /dev/console.
12:38:39 <6>Dec 9 11:38:39 hasl112 kernel: klogd 1.4.1, log source = /proc/kms
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.494:2):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.514:3):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.584:4):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.654:5):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.684:6):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.744:7):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.814:8):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.874:9):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.894:10):
12:38:42 <7>Dec 9 11:38:42 hasl112 kernel: eth0: no IPv6 routers present.
12:38:46 <37>Dec 9 11:38:46 hasl112 sd. (to root) root on /dev/console.
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
LXSYSLOG-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23
  
```

```
9.82.56.112 - PuTTY
login as: root
Using keyboard-interactive authentication.
Password:
Last login: Fri Dec  9 11:33:35 2016
has1112:~ # logger here is a critical test message from Linux guest application
has1112:~ #
```

```

C - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <31>Dec 9 11:38:35 hasl112 xinetdY2655": Reading included configurati
12:38:35 <29>Dec 9 11:38:35 hasl112 xinetdY2655": xinetd Version 2.3.14 starte
12:38:35 <29>Dec 9 11:38:35 hasl112 xinetdY2655": Started working: 2 available
12:38:36 <37>Dec 9 11:38:36 hasl112 su: (to root) root on /dev/console.
12:38:39 <6>Dec 9 11:38:39 hasl112 kernel: klogd 1.4.1, log source = /proc/kms
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.494:2):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.514:3):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.584:4):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.654:5):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.684:6):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.744:7):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.814:8):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.874:9):
12:38:39 <5>Dec 9 11:38:39 hasl112 kernel: type=1400 audit(1481301509.894:10):
12:38:42 <7>Dec 9 11:38:42 hasl112 kernel: eth0: no IPv6 routers present.
12:38:46 <37>Dec 9 11:38:46 hasl112 su: (to root) root on /dev/console.
12:43:00 <38>Dec 9 11:43:00 hasl112 sshdY3765": Accepted keyboard-interactive/
12:43:23 <13>Dec 9 11:43:23 hasl112 root: here is a critical test message from
12:43:23 * -- Operations Manager Action LXLUG scheduled for execution -- *
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
LXSYSLOG-ZVMV6R30 (Scroll)
MA C 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

Scenario 1: How Do You Do That?

- For console data
 - Make OPMGRM1 the secondary user of OPERATOR and SLESB112
 - Via CONSOLE statement in CP directory entry (recommended), or
 - Via SET SECUSER command

- For Linux syslog data

- Set up TCP/IP listener for syslog data

```
*  
DEFTCPA NAME LNXXSYSLG +  
TCPUSER TCPIP +  
TCPAPPL GOMRSYL +  
TCPADDR 000.000.000.000 +  
TCPPOST 00514 +  
PARM LXSYSLOG03330417UTF8
```

- Update TCP/IP configuration to allow Operations Manager to listen for UDP traffic on the specified port(s)
 - Port 514 used here
- Update the Linux guest to send its syslog data to the IP address and port of your z/VM system
- Refer to white paper on Operations Manager web site for details

Scenario 2: Send an Email if Abend or Fatal Message Occurs

- Watch all monitored consoles for an error message that includes the word “fatal” or “abend”
 - Message must also contain the word “mail” (for demo purposes only)
- Send an email if one of the words appears on a console
- Dynamically include in the email
 - Host name of z/VM system where the error occurred
 - User ID that received the error message
 - Indicator of whether the word was fatal or abend
 - Full text of the error message

Scenario 2: Detailed Steps

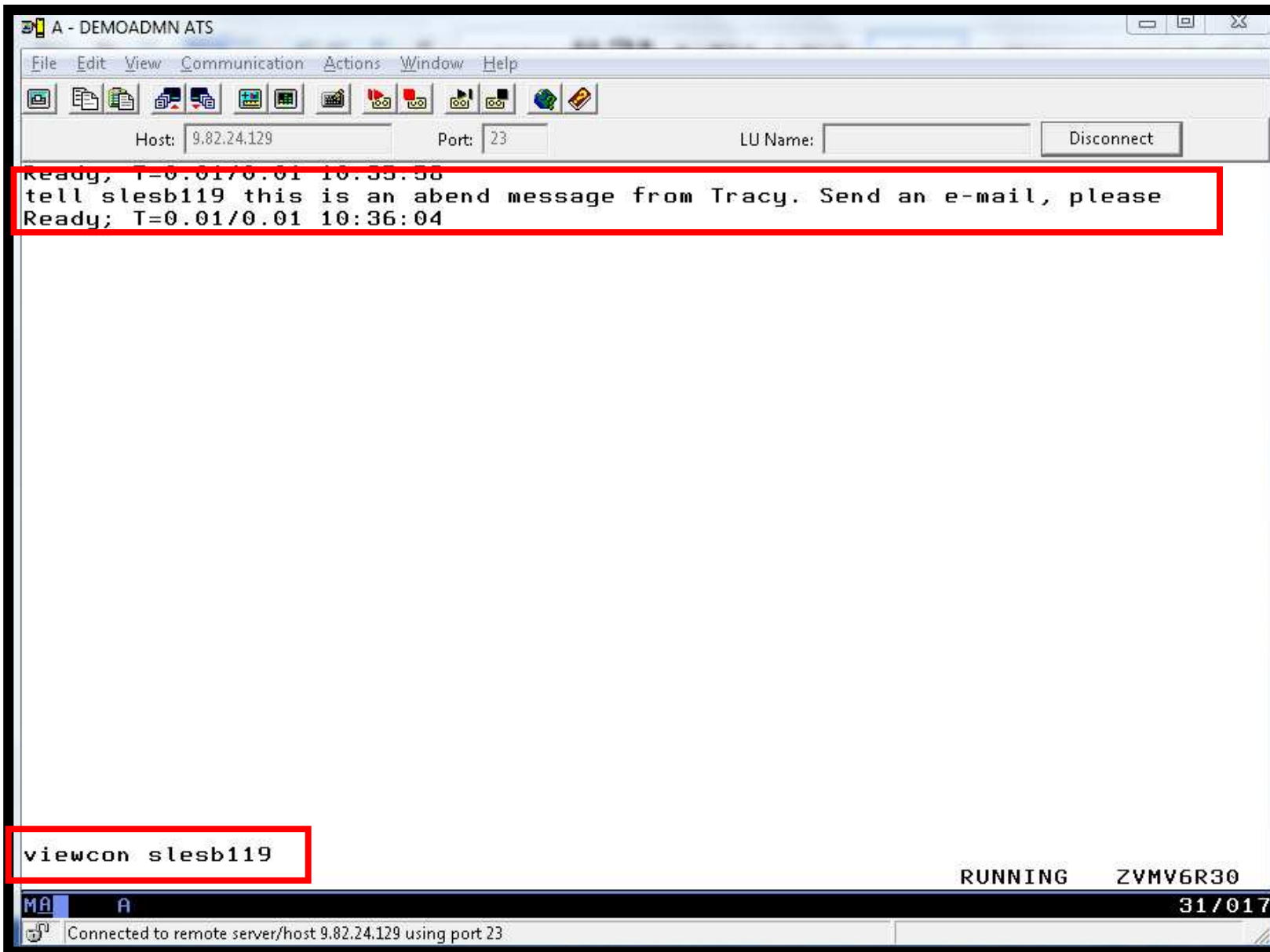
- From any VM user ID:

```
tell slesb119 this is an abend message from Tracy. Send an e-mail, please.
```

- From an authorized VM user ID, view the console of SLESB119:

```
viewcon slesb119
```

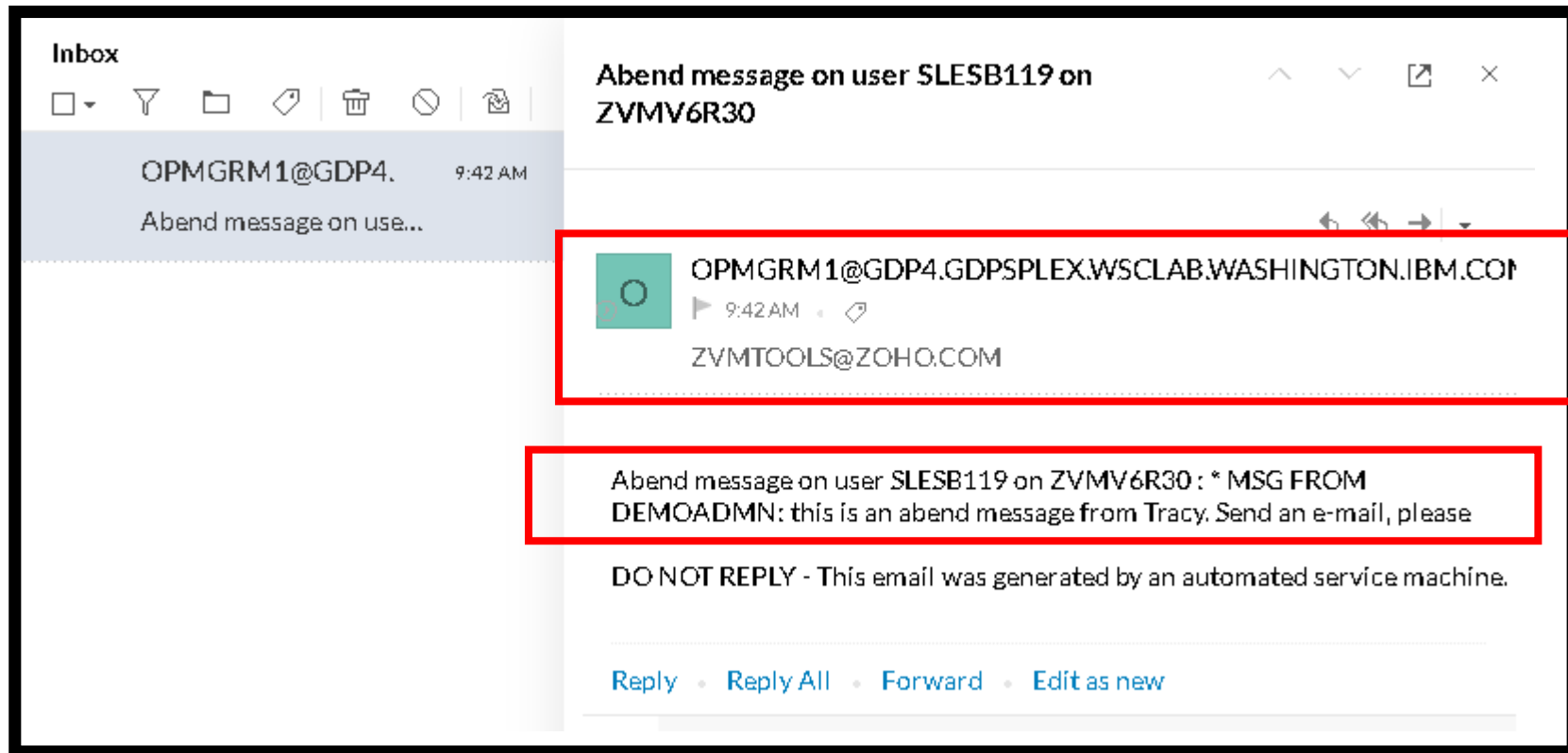
- Check the inbox of “zvmtools” to see the e-mail



```

A - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
10:35:42 drwxr-xr-x 25 root root 4096 Mar 15 19:30 ..
10:35:42 -rw----- 1 root root 0 Oct 24 2014 .Xauthority
10:35:42 -rw----- 1 root root 9519 Jul 29 06:05 .bash_history
10:35:42 drwxr-xr-x 2 root root 4096 Feb 1 2012 .config
10:35:42 -rw-r--r-- 1 root root 1332 Nov 23 2005 .exrc
10:35:42 drwx----- 2 root root 4096 Oct 6 2014 .gnupg
10:35:42 drwx----- 2 root root 4096 Jul 28 2012 .ssh
10:35:42 -rw----- 1 root root 407624 Sep 1 22:55 .suse_register.log
10:35:42 drwxr-xr-x 5 root root 4096 Jul 31 2012 .swdis
10:35:42 -rw----- 1 root root 4711 Jul 19 19:19 .viminfo
10:35:42 drwxr-xr-x 2 root root 4096 Oct 6 2014 .vnc
10:35:42 drwxr-xr-x 2 root root 4096 Oct 6 2014 .zypp
10:35:42 drwxr-xr-x 3 root root 4096 Jul 31 2012 InstallShield
10:35:42 -rw-r--r-- 1 root root 84618 Oct 6 2014 autoinst.xml
10:35:42 drwxr-xr-x 2 root root 4096 May 5 2010 bin
10:35:42 drwxr-xr-x 6 root root 4096 Oct 6 2014 inst-sys
10:35:42 You have new mail in /var/mail/root
10:35:43 hasl119:~ #
10:35:53 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
10:35:53 free -m
10:35:53 free -m
10:35:54 total used free shared buffers cac
10:35:54 Mem: 2001 686 1315 0 147
10:35:54 -/+ buffers/cache: 259 1742
10:35:54 Swap: 0 0 0
10:35:54 hasl119:~ #
10:36:04 * MSG FROM DEMOADMN: this is an abend message from Tracy. Send an e-m
10:36:04 * -- Operations Manager Action EMAIL scheduled for execution -- *
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB119-ZVMV6R30 (Scroll)
MA A 31/001
Connected to remote server/host 9.82.24.129 using port 23

```



Scenario 2: How Do You Do That?

Rules in Operations Manager:

- *
 - * Send an e-mail to someone if I see a message containing the word
 - * "fatal" on any monitored console.
 - * Leave &u and &t as-is. These represent the user ID that had the
 - * "fatal" message and the text of the message. These will be included in
 - * the text of the e-mail.

```
DEFRULE NAME FATLMAIL +
  MATCH '*FATAL*mail*' +
  ACTION EMAIL +
  PARM 'FATAL &u &t'
```

- *
 - * Send an e-mail to someone if I see a message containing the word
 - * "abend" on any monitored console

```
DEFRULE NAME ABNDMAIL +
  MATCH '*ABEND*mail*' +
  ACTION EMAIL +
  PARM 'ABEND &u &t'
```

Scenario 2: How Do You Do That?

Action in Operations Manager:

- * Sample EXEC provided on 5697J10F 2C2 disk
- * Replace "zvmtools at zoho.com" with the e-mail address of the user that should receive the e-mail.
- * Leave &sysname and &p as-is. These represent the name of the local z/VM system and the parameter passed from the rule via the PARM operand. These will be included in the text of the e-mail.

```
DEFACTN NAME EMAIL +
```

```
COMMAND 'EXEC SMTPMSG zvmtools at zoho.com &sysname &p' +
```

```
ENV LVM
```

Scenario 3a: Send an Alert to OMNIbus – Using POSTZMSG

- Watch all monitored consoles for an error message that includes the word “fatal” or “abend”
 - Message must also contain the word “omni” (for demo purposes only)
- Send an alert to OMNIbus if one of the words appears on a console
 - Use POSTZMSG, running on Linux guest
 - Do not trigger the action if the message is on this guest
- Dynamically include in the alert
 - User ID that received the error message
 - Indicator of whether the word was fatal or abend

Scenario 3a: Detailed Steps

➤ View “All Events” in OMNIbus

➤ From any VM user ID:

```
tell opmgrcl this user is abending at SHARE. Tell OMNIBUS.
```

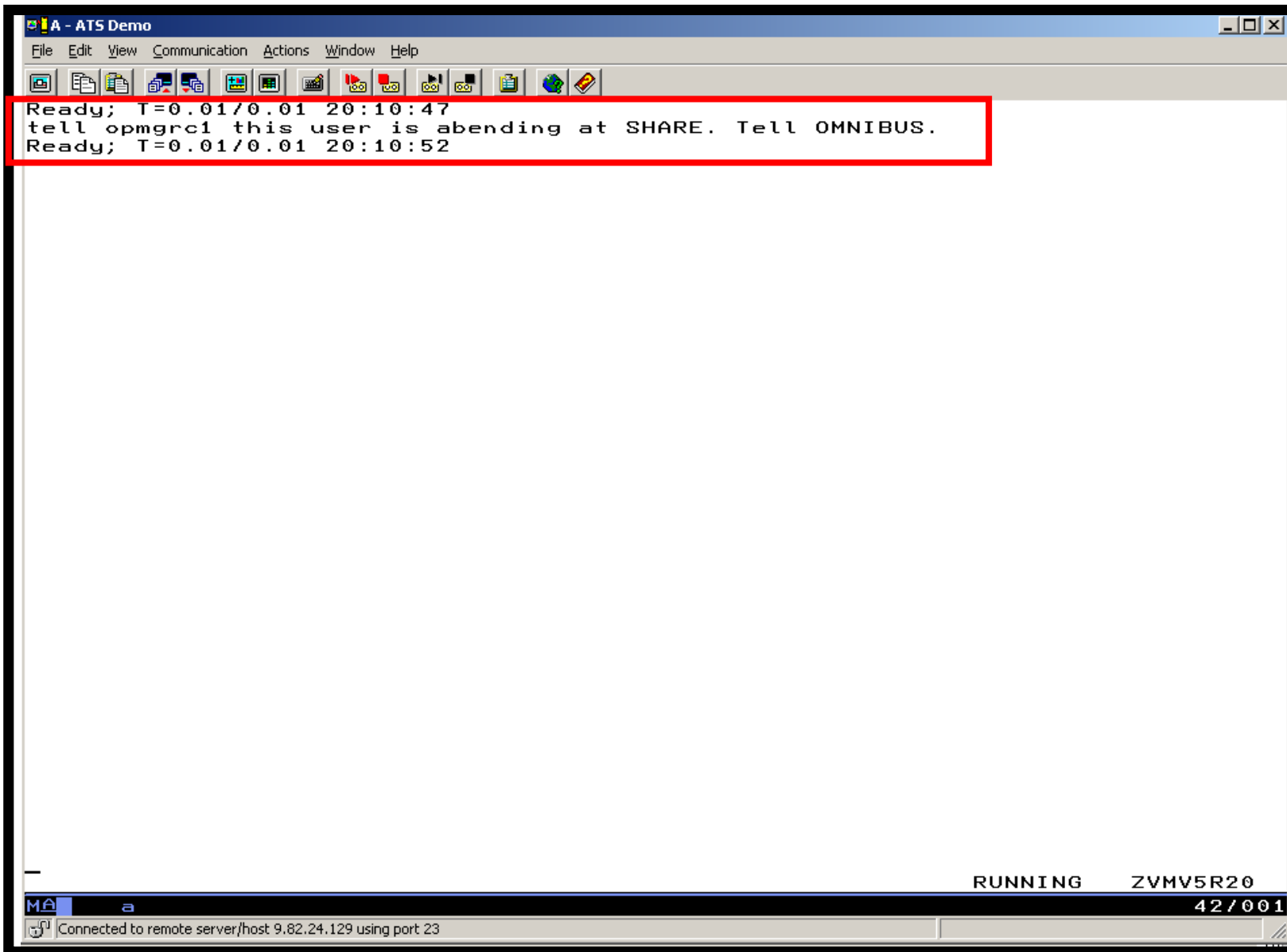
➤ From an authorized VM user ID, view the console of OPMGRC1:

```
viewcon user opmgrcl
```

➤ From an authorized VM user ID, view the console of the Linux guest that runs POSTZMSG:

```
viewcon esmts112
```

➤ View the OMNIbus console to see the alert



```

A - ATS Demo
File Edit View Communication Actions Window Help
00:55:15 hasl112:/workloads # ./postzmsg -f e2o.conf -r CRITICAL -m guest_is_ab
00:55:16 hasl112:/workloads #
00:55:41 cd /workloads
00:55:41 hasl112:/workloads #
00:56:25 cd /workloads
00:56:25 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m guest_is_abe
00:56:27 hasl112:/workloads #
00:58:05 cd /workloads
00:58:05 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m guest_is_abe
00:58:06 hasl112:/workloads #
01:01:47 cd /workloads
01:01:47 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m guest_is_abe
01:01:48 hasl112:/workloads #
01:02:36 cd /workloads
01:02:36 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m guest_is_abe
01:02:36 hasl112:/workloads #
01:03:32 cd /workloads
01:03:32 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m fatal_error_
01:03:32 hasl112:/workloads #
01:04:01 cd /workloads
01:04:01 hasl112:/workloads # ./postzmsg -f e2o.conf -r CRITICAL -m guest_is_ab
01:04:01 hasl112:/workloads #
14:01:16 cd /workloads
14:01:17 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m fatal_error_
14:01:17 hasl112:/workloads #
14:05:33 cd /workloads
14:05:33 hasl112:/workloads # ./postzmsg -f e2o.conf -r CRITICAL -m guest_is_ab
14:05:34 hasl112:/workloads #
14:07:00 cd /workloads
14:07:00 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m fatal_error_
14:07:01 hasl112:/workloads #
14:07:59 * MSG FROM SINE : test fatal error for omnibus
14:12:40 cd /workloads
14:12:40 hasl112:/workloads # ./postzmsg -f e2o.conf -r CRITICAL -m guest_is_ab
14:12:40 hasl112:/workloads #
14:13:43 cd /workloads
14:13:43 hasl112:/workloads # ./postzmsg -f e2o.conf -r WARNING -m fatal_error_
14:13:44 hasl112:/workloads #
20:10:51 cd /workloads
20:10:51 hasl112:/workloads # ./postzmsg -f e2o.conf -r CRITICAL -m guest_is_ab
20:10:52 hasl112:/workloads #
-
ESMTS112 (Scroll)
42/001
MA a
Connected to remote server/host 9.82.24.129 using port 23

```

Netcool/OMNIBus Event List : Filter="All Events", View="Default"

File Edit View Alerts Tools Help

All Events Default Top [OFF]

Host	Host Group	Summary	Last Occurrence	Count	Prob
OPMGR01	SCARY_EVENT	guest_is_abending	/24/2009 08:10:52 P	1	Prob
hasl112	TEST_EVENT	Test message from hasl112	/12/2009 02:15:45 P	3	Prob
mwb161	Administrator	Attempt to login as root from host mwb161 failed	/06/2009 06:19:51 P	1	Prob
hasl112	TEST_EVENT	Test message from hasl112	/12/2009 02:15:45 P	3	Prob
hasl112	MWBTEST	Test Message	/05/2009 05:36:58 P	2	Prob
hasle332	Unix Event List	A e@09522621@09522621:1.0 process e@09522621@09522621:1.0 running on ha	/24/2009 08:06:55 P	1	Prob
East	ATS_A_SrvGroup	Server1 experiencing problems	/20/2009 07:23:37 P	3	Prob
	Unix Event List	A e@OmnibusEventConnector process running on has connected as username	/19/2009 09:13:16 P	1	Prob
hasl112	TEST_EVENT	Test message from hasl112	/12/2009 02:19:52 P	1	Prob
	RAD:Impact	A RAD:Impact process running on has connected as username root	/12/2009 09:24:32 A	1	Prob
hasle332	JJELD	A JJELD process running on hasle332 has connected as username root	/05/2009 10:44:58 A	1	Prob
	RAD:Impact	A RAD:Impact process running on has connected as username root	/05/2009 10:44:19 A	1	Prob
hasl125	TESTEIF	test_message_from_eif_2	/19/2008 03:30:51 P	2	Prob
USIBMWZV.HSLV12	TBSMV3_SOURCE390		/25/2008 05:23:22 P	5	Prob
USIBMWZV.HSLV12	TBSMV3_SOURCE390		/25/2008 05:23:21 P	5	Prob
USIBMWZV.HSLV12	TBSMV3_SOURCE390		/05/2008 09:38:25 A	1	Prob
mwbtp	TEST	Test_Message	/10/2008 02:45:57 P	4	Prob

0 4 8 2 1 2 All Events

No rows selected. 02/24/2009 08:11:30 PM root NCOMS[PRI]

Scenario 3a: How Do You Do That?

Rules in Operations Manager:

*

* Send an alert to OMNIBUS for fatal errors on consoles

```
DEFRULE NAME FATLOMNI +  
  MATCH '*fatal*omni*' +  
  EXUSER ESMTS112 +  
  ACTION ALRTOMNI +  
  PARM FATAL
```

*

* Send an alert to OMNIBUS for abends on consoles

```
DEFRULE NAME ABNDOMNI +  
  MATCH '*abend*omni*' +  
  EXUSER ESMTS112 +  
  ACTION ALRTOMNI +  
  PARM ABEND
```


Scenario 3a: How Did You Do That?

Action in Operations Manager:

*

* Call POSTZMSG on a Linux guest to send alert to OMNIBUS

```
DEFACTN NAME ALRTOMNI +
```

```
COMMAND 'EXEC POSTZMSG &u &p' +
```

```
ENVLVM
```

Scenario 3a: How Did You Do That?

POSTZMSG EXEC (excerpts)

```
/* */
Address Command
Parse arg baduser errtype
if errtype = 'ABEND' then
  do
    zerrtype = 'CRITICAL'
    cmdpart2 = '-m guest_is_abending hostname='baduser
    cmdpart4 = 'sub_origin=tcp SCARY_EVENT OpsMgr'
  end
else
  do
    zerrtype = 'WARNING'
    cmdpart2 = '-m fatal_error_on_guest hostname='baduser
    cmdpart4 = 'sub_origin=tcp WARN_EVENT OpsMgr'
  end
cmdpart1 = './postzmsg -f e2o.conf -r' zerrtype
cmdpart3 = 'sub_source=postzmsg origin='baduser
'CP SEND ESMTS112 cd /workloads'
'CP SEND ESMTS112' cmdpart1 cmdpart2 cmdpart3 cmdpart4
```

Scenario 3b: Send an Alert to OMNIbus – Using SNMP

- Watch all monitored consoles for an error message that includes the word “abend”
 - Message must also contain the word “snmp” (for demo purposes only)
- If this word appears on a console
 - Change the message to red and hold it
 - Send an alert to OMNIbus, using SNMPTRAP command on z/VM
 - Automatically unhold the message after 4 minutes
- Dynamically include in the alert
 - IP address of the z/VM system where the error occurred
 - User ID that received the error message
 - Text of the abend message

Scenario 3b: Detailed Steps

➤ View “All Events” in OMNIbus

➤ From any VM user ID:

```
tell slesb109 this user is abending. Alert Netcool via SNMP
```

➤ From an authorized VM user ID, view the console of SLESB109 (a Linux guest):

```
viewcon slesb109
```

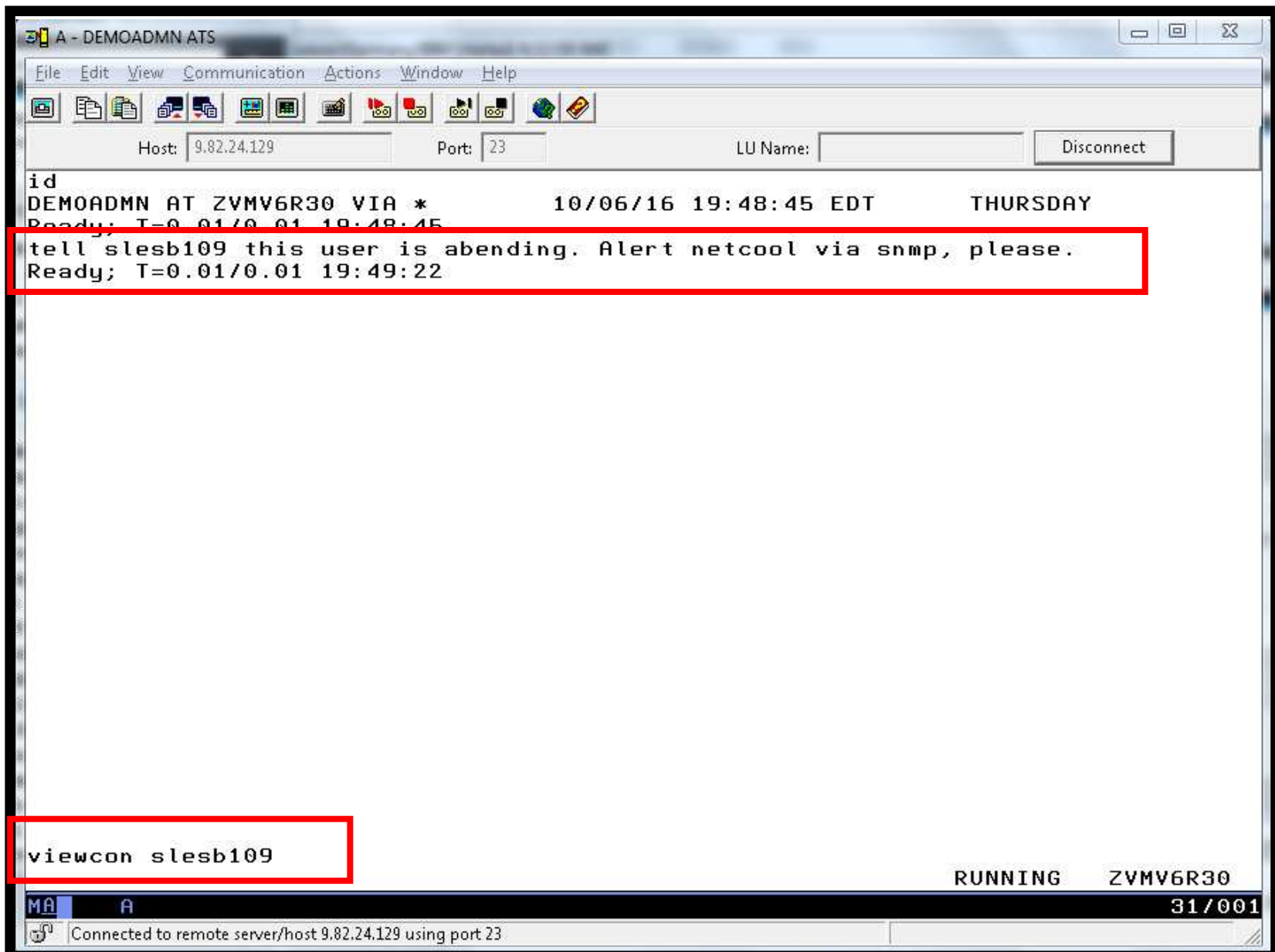
➤ Issue some Linux commands so the held message moves to the top of the screen

```
df -h  
free -m
```

➤ View the OMNIbus console to see the alert

➤ After 4 minutes, view the console of SLESB109 again and notice the held message has moved off the screen

```
viewcon slesb109
```



```

A - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
19:41:48 Mem:          2001      1061      940          0      144
19:41:48 -/+ buffers/cache:      261      1740
19:41:48 Swap:            0          0          0
19:41:48 hasl109:~ #
19:41:51 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:41:51 df -h
19:41:51 df -h
19:41:51 Filesystem          Size  Used Avail Use% Mounted on
19:41:51 /dev/mapper/System-system 16G   12G  4.0G   74% /
19:41:51 udev                   1001M 136K 1001M   1% /dev
19:41:51 tmpfs                   1001M   0 1001M   0% /dev/shm
19:41:51 /dev/dasdd1             68M   26M   39M   40% /boot
19:41:51 hasl109:~ #
19:41:52 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:41:52 free -m
19:41:52 free -m
19:41:52              total          used          free          shared          buffers          cac
19:41:52 Mem:          2001      1061      940          0      144
19:41:52 -/+ buffers/cache:      261      1740
19:41:52 Swap:            0          0          0
19:41:52 hasl109:~ #
19:46:18 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:46:18 netstat -an | grep 50000
19:46:18 netstat -an | grep 50000
19:46:18 hasl109:~ #
19:49:22 * MSG FROM DEMOADMN: this user is abending. Alert netcool via snmp, p
19:49:25 * -- Operations Manager Action SNMPALRT scheduled for execution -- *
19:49:25 * -- Operations Manager Action ONHOLD scheduled for execution -- *
PF01= SCROLL PF02=          PF03= END      PF04=          PF05= HOLD    PF06= FORMAT
PF07= UP      PF08= DOWN    PF09=          PF10= LEFT    PF11= RIGHT   PF12= RECALL
SLESB109-ZVMV6R30 (Scroll)
MA A 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

```

A - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
19:49:22 * MSG FROM DEMOADMN: this user is abending. Alert netcool via snmp, p
19:49:25 * -- Operations Manager Action UNHOLD scheduled for execution -- *
19:53:16 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:53:16 free -m
19:53:16 free -m
19:53:16          total      used      free      shared    buffers    cac
19:53:16 Mem:          2001      1061      940        0         144
19:53:16 -/+ buffers/cache:      261      1740
19:53:16 Swap:           0           0           0
19:53:16 hasl109:~ #
19:53:21 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:53:21 df -h
19:53:21 df -h
19:53:21 Filesystem      Size  Used Avail Use% Mounted on
19:53:21 /dev/mapper/System-system 16G  12G  4.0G  74% /
19:53:21 udev              1001M 136K 1001M  1% /dev
19:53:21 tmpfs             1001M  0 1001M  0% /dev/shm
19:53:21 /dev/dasdd1      68M   26M  39M  40% /boot
19:53:21 hasl109:~ #
19:53:26 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:53:26 df -h
19:53:26 df -h
19:53:26 Filesystem      Size  Used Avail Use% Mounted on
19:53:26 /dev/mapper/System-system 16G  12G  4.0G  74% /
19:53:26 udev              1001M 136K 1001M  1% /dev
19:53:26 tmpfs             1001M  0 1001M  0% /dev/shm
19:53:26 /dev/dasdd1      68M   26M  39M  40% /boot
19:53:26 hasl109:~ #
PF01= SCROLL PF02=          PF03= END      PF04=          PF05= HOLD    PF06= FORMAT
PF07= UP      PF08= DOWN    PF09=          PF10= LEFT    PF11= RIGHT   PF12= RECALL
SLESB109-ZVMV6R30 (Scroll)
MA A 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

hasle327 (9.82.38.28) - service mode

Netcool/OMNIBus Event List : Filter="All Events", View="Default"

File Edit View Alerts Tools Help

All Events Default Top [OFF] 0

Node	Alert Group	Summary	Last Occurrence	Count	Type
9.82.24.129	Z/VM_SNMP	Userid SLESB109: this user is abending. Alert netcool via snmp, please.	10/6/2016 7:48:51 ...	47	Problem
SLESB109	SCARY_EVENT	guest_is_abending	7/8/2016 12:44:21	1	Problem
hasl104	PROBLEM_EVENT	Problem has occurred	3/16/2016 11:28:05...	1	Problem
SLESB119	SCARY_EVENT	guest_is_abending	8/4/2015 9:44:09 AM	1	Problem
9.82.24.129	Generic	Cold Start	7/8/2016 1:26:44 PM	8	Type Not Set
199.8.7.6	Generic	Egp Neighbour Loss	6/9/2016 9:07:28 AM	5	Type Not Set
9.82.24.129	Generic	Authentication	7/29/2015 12:57:30...	2	Type Not Set
myuser	WARN-EVENT	guest_is_normal	6/19/2015 5:54:55 ...	5	Problem
hasle327	Windows Event List	A NT Event List@2009260000000926 process running on hasle327 has connected as usernam...	10/5/2016 1:01:34 ...	1	Problem
hasle327	Windows Event List	A NT Event List@2009260000000926 process running on hasle327 has connected as usernam...	10/5/2016 1:01:32 ...	1	Problem
9.82.24.129	Generic	Link Up	3/15/2016 4:52:50 ...	4	Type Not Set
ESMTS108	WARN_EVENT	fatal_error_on_guest	8/25/2015 9:00:41 ...	1	Problem
hasle327		mitrapsd probe on hasle327: Heartbeat Message	10/6/2016 7:43:10 ...	41562	Type Not Set

Scenario 3b: How Do You Do That?

Rule and actions in Operations Manager:

*

* Send an alert to OMNIBus using SNMP for abend msgs on consoles

```
DEFRULE NAME ABNDSNMP +  
  MATCH '*abend*snmp*' +  
  ACTION SNMPALRT
```

*

```
DEFACTN NAME SNMPALRT +  
  COMMAND 'EXEC SNMP2OMN &U &T' +  
  INPUT CPI,HLD +  
  ENV SVM +  
  NEXTACTN UNHOLD +  
  NEXTDELY 03:30
```

*

```
DEFACTN NAME UNHOLD +  
  COMMAND 'ALTRCON USER &U MATCH ``*abend*snmp*`` ELAPSED 180 HLD N' +  
  ENV GOM
```

Scenario 3b: How Did You Do That?

SNMP2OMN EXEC

```
/* SNMP2OMN action routine for Operations Mgr */  
Trace Off  
Address Command  
Parse Arg user junk ":" msgtext  
  
msgtext2 = '"Userid' user': ' msgtext '''  
  
/* Send message */  
'SNMPTRAP TRAPE 1.1 number 30 1.2 text "UXZVM001" 1.3 text' msgtext2 'ent 1.3.6.1.4.1.9545.6'  
  
Exit rc
```

Scenario 3b: Additional Steps Required on z/VM

- SNMPD user ID configured and running
- Update files on TCPMAINT 198 disk
 - Add OMNibus IP address to SNMPTRAP DEST file
 - Open SNMPD and SNMPQE ports in PROFILE TCPIP
 - Update SNMPMIBX TEXT section of MIB_EXIT DATA
- Give OPMGRM1 and OPMGRSn access to SNMPTRAP command
 - On TCPMAINT 592 disk

Scenario 3b: Additional Steps Required on OMNibus

- Install the IBM Tivoli Netcool/OMNibus SNMP Probe
 - Install it on same platform as target OMNibus server
- Customize operational information in the probe properties (mttrapd.props)
 - Listening port, heartbeat interval, mibs and mibs locations, etc.
- Customize the probe rules (mttrapd.rules)
 - Map variables created by the probe (from data extracted from the SNMP trap) into the desired OMNibus event fields
 - Default mappings for the SNMP generic traps (trap types 0-5)
 - Enterprise-specific traps (trap type 6) require customization
- Documentation for installation and customization
 - IBM Tivoli Netcool/OMNibus SNMP Probe Reference Guide (SC23-6003-04)

Scenarios 3a and 3b – POSTZMSG vs SNMP

- Using POSTZMSG
 - Can direct the alert to only the IP address(es) you specify
 - Need a Linux guest running and logged on that can run POSTZMSG and must be on the same z/VM system
 - Can be overcome by using a socket interface to send POSTZMSG command to the guest
 - Limit of 160 characters on POSTZMSG command sent to Linux guest (using CP SEND)
 - Can't always send full text of message
 - Can be overcome by using a socket interface to send POSTZMSG command to the guest
- Using SNMP
 - No requirement for a Linux guest. SNMP runs on z/VM.
 - No limit on message size
 - All SNMP alerts on z/VM go the same set of IP addresses

Scenario 4a: Send a Message if Spool Usage is Too High on Any Member in an SSI Cluster

- Operations Manager monitors the spool usage (percent full) on each member of a cluster
 - For demo purposes, spool monitor is currently suspended
 - We'll dynamically resume (re-activate) the spool monitor
 - Must reactivate on each member of a cluster
 - Demo monitor requires spool to only be 5% full
- Usage exceeds the specified limit
- Automatically send a message to a central console for the entire cluster
 - Send a maximum of 3 messages per hour
- Message includes the member name and % full
- For demo purposes, suspend (de-activate) the spool monitor on each member when complete
- Demonstrate which spool files are visible on each member, including sorting and purging files.

Scenario 4a: Detailed Steps

- From a user ID with Operations Manager privileges on member 1:

```
gomcmd opmgrm1 resume spool spfillmsg
```

```
smsg opmgrm1 at tivlp32 resume spool spfillmsg
```

- View the list of spool files, including sorting, viewing, and purging files:

```
viewspl
```

- View the central console for the cluster to see warning messages from each member:

```
viewcon operdemo
```

- From a user ID with Operations Manager privileges:

```
gomcmd opmgrm1 suspend spool spfillmsg
```

```
smsg opmgrm1 at tivlp32 suspend spool spfillmsg
```

Scenario 4a: Detailed Steps

- From member 1, send a spool file to a single configuration and a multiconfiguration user:

```
sendfile test3 file a demoadmn operator
```

- From member 1, send a spool file to a multiconfiguration user on member 2:

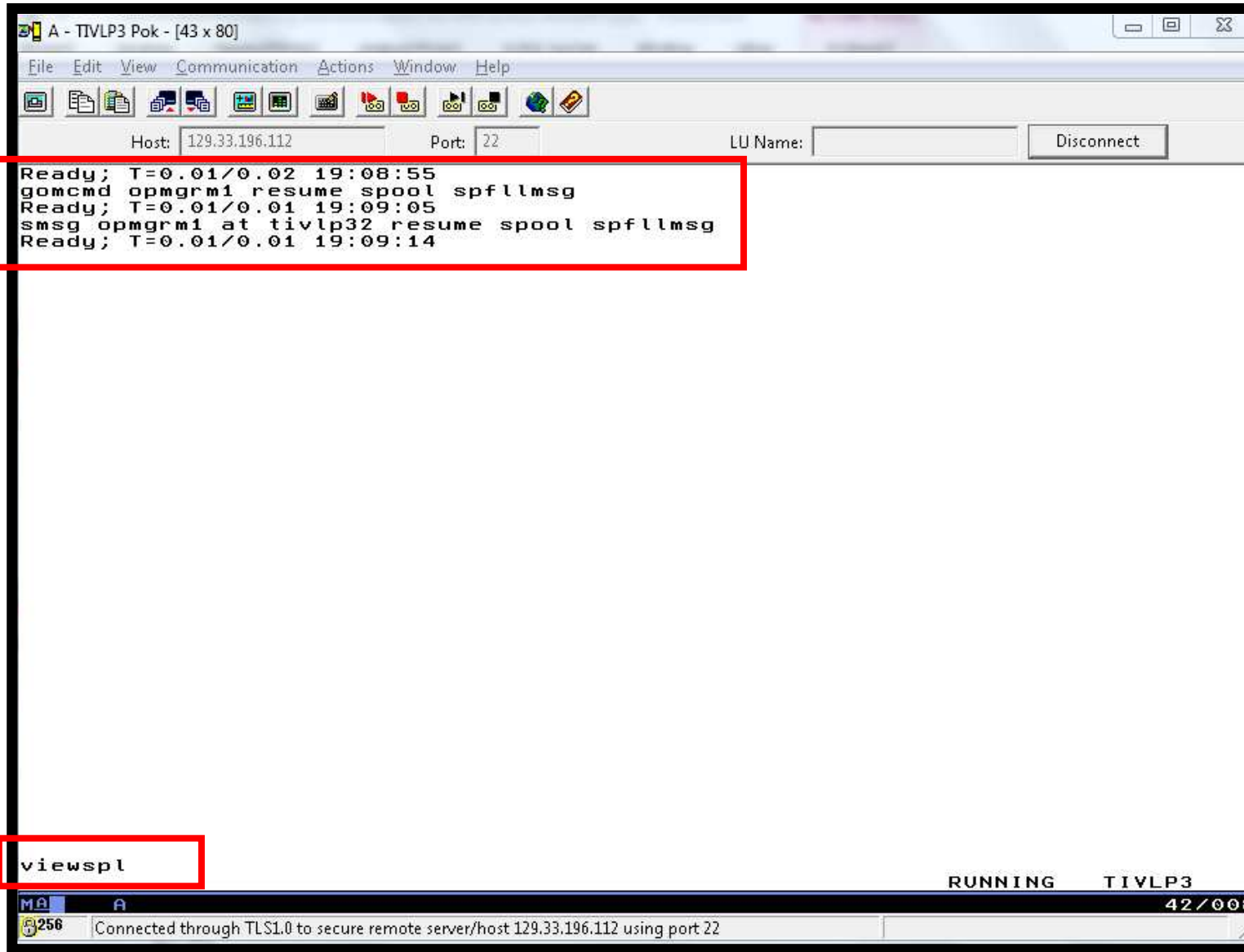
```
sendfile test32 file a operator at tivlp32
```

- From a user ID with Operations Manager privileges on member 1, view spool files for that member:

```
viewspl
```

- From a user ID with Operations Manager privileges on member 2, view spool files on that member:

```
viewspl
```

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 **Spool: 50% Used Max: 6.9G** **Files: 0% Used Max: 1655640** **1 of 563**

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	BKRAADMIN	0005	T	RDR	CON	1M	NONE	07/04/16	12:33		
	BKRAADMIN	0009	T	RDR	CON	20K	NONE	09/14/16	21:36	TESTBKUP	20160914
	BKRAADMIN	0013	T	RDR	CON	24K	NONE	09/14/16	21:40	TESTBKUP	20160914
	BKRAADMIN	0017	T	RDR	CON	4K	NONE	09/14/16	21:40	WORKER	OUTPUT
	BKRAADMIN	0021	T	RDR	CON	12K	NONE	09/15/16	20:16	TESTBKUP	20160914
	BKRAADMIN	0025	T	RDR	CON	24K	NONE	09/15/16	20:16	WKLYBKUP	20160915
	BKRAADMIN	0029	T	RDR	CON	4K	NONE	09/15/16	20:18	WORKER	OUTPUT
	BKRAADMIN	0033	T	RDR	CON	24K	NONE	09/15/16	20:22	WKLYBKUP	20160915
	BKRAADMIN	0037	T	RDR	CON	4K	NONE	09/15/16	20:23	WORKER	OUTPUT
	BKRAADMIN	0041	T	RDR	CON	24K	NONE	09/15/16	20:42	WKLYFULL	20160915
	BKRAADMIN	0045	T	RDR	CON	4K	NONE	09/15/16	20:42	WORKER	OUTPUT
	BKRAADMIN	0049	T	RDR	CON	24K	NONE	09/15/16	20:45	WKLYFULL	20160915
	BKRAADMIN	0053	T	RDR	CON	20K	NONE	09/15/16	20:45	DALYINCR	20160915
	BKRAADMIN	0057	T	RDR	CON	4K	NONE	09/15/16	20:46	WORKER	OUTPUT
	BKRAADMIN	0061	T	RDR	CON	24K	NONE	09/16/16	13:58	WKLYFULL	20160916
	BKRAADMIN	0065	T	RDR	CON	4K	NONE	09/16/16	13:59	WORKER	OUTPUT
	BKRAADMIN	0069	R	RDR	CON	4K	NONE	09/16/16	14:21	WORKER	OUTPUT
	BKRAADMIN	0073	R	RDR	CON	4K	NONE	09/16/16	14:26	WORKER	OUTPUT
	BKRAADMIN	0077	R	RDR	CON	4K	NONE	09/16/16	14:30	WORKER	OUTPUT
	BKRAADMIN	0081	R	RDR	CON	4K	NONE	09/16/16	14:45	WORKER	OUTPUT
	BKRAADMIN	0085	T	RDR	CON	24K	NONE	09/17/16	03:00	DALYINCR	20160917
	BKRAADMIN	0089	T	RDR	CON	4K	NONE	09/17/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0093	T	RDR	CON	24K	NONE	09/18/16	02:00	WKLYFULL	20160918
	BKRAADMIN	0097	T	RDR	CON	4K	NONE	09/18/16	02:00	WORKER	OUTPUT
	BKRAADMIN	0101	T	RDR	CON	24K	NONE	09/18/16	03:00	DALYINCR	20160918
	BKRAADMIN	0105	T	RDR	CON	4K	NONE	09/18/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0109	T	RDR	CON	24K	NONE	09/19/16	03:00	DALYINCR	20160919
	BKRAADMIN	0113	T	RDR	CON	4K	NONE	09/19/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0117	T	RDR	CON	24K	NONE	09/20/16	03:00	DALYINCR	20160920
	BKRAADMIN	0121	T	RDR	CON	4K	NONE	09/20/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0125	T	RDR	CON	24K	NONE	09/21/16	03:00	DALYINCR	20160921
	BKRAADMIN	0129	T	RDR	CON	4K	NONE	09/21/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0133	T	RDR	CON	24K	NONE	09/22/16	03:00	DALYINCR	20160922
	BKRAADMIN	0137	T	RDR	CON	4K	NONE	09/22/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0141	T	RDR	CON	24K	NONE	09/23/16	03:00	DALYINCR	20160923
	BKRAADMIN	0145	T	RDR	CON	4K	NONE	09/23/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0149	T	RDR	CON	24K	NONE	09/24/16	03:00	DALYINCR	20160924

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA A 05/001
 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Files: 0% Used 1 of 563
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	WAVEWRKS	*0052	T	PRT	CON	543M	NONE	07/28/16	08:42		
	TCPIP	*0001	T	PRT	CON	38M	NONE	07/04/16	12:32		
	SSL00001	*0001	T	PRT	CON	25M	NONE	07/04/16	12:32		
	PERFSVM	0112	A	PRT	PRT	21M	NONE	10/01/16	00:01	FCONMON	LISTING
	PERFSVM	0114	A	PRT	PRT	21M	NONE	10/03/16	00:01	FCONMON	LISTING
	PERFSVM	0115	A	PRT	PRT	21M	NONE	10/04/16	00:01	FCONMON	LISTING
	PERFSVM	0116	A	PRT	PRT	21M	NONE	10/05/16	00:01	FCONMON	LISTING
	PERFSVM	0117	A	PRT	PRT	21M	NONE	10/06/16	00:01	FCONMON	LISTING
	PERFSVM	0097	A	PRT	PRT	21M	NONE	09/16/16	00:01	FCONMON	LISTING
	PERFSVM	0113	A	PRT	PRT	21M	NONE	10/02/16	00:01	FCONMON	LISTING
	PERFSVM	0118	A	PRT	PRT	21M	NONE	10/07/16	00:01	FCONMON	LISTING
	PERFSVM	0098	A	PRT	PRT	21M	NONE	09/17/16	00:01	FCONMON	LISTING
	PERFSVM	0110	A	PRT	PRT	21M	NONE	09/29/16	00:01	FCONMON	LISTING
	PERFSVM	0111	A	PRT	PRT	21M	NONE	09/30/16	00:01	FCONMON	LISTING
	PERFSVM	0103	A	PRT	PRT	21M	NONE	09/22/16	00:01	FCONMON	LISTING
	PERFSVM	0104	A	PRT	PRT	21M	NONE	09/23/16	00:01	FCONMON	LISTING
	PERFSVM	0105	A	PRT	PRT	21M	NONE	09/24/16	00:01	FCONMON	LISTING
	PERFSVM	0107	A	PRT	PRT	21M	NONE	09/26/16	00:01	FCONMON	LISTING
	PERFSVM	0109	A	PRT	PRT	21M	NONE	09/28/16	00:01	FCONMON	LISTING
	PERFSVM	0101	A	PRT	PRT	21M	NONE	09/20/16	00:01	FCONMON	LISTING
	PERFSVM	0106	A	PRT	PRT	21M	NONE	09/25/16	00:01	FCONMON	LISTING
	PERFSVM	0108	A	PRT	PRT	21M	NONE	09/27/16	00:01	FCONMON	LISTING
	PERFSVM	0100	A	PRT	PRT	21M	NONE	09/19/16	00:01	FCONMON	LISTING
	PERFSVM	0099	A	PRT	PRT	21M	NONE	09/18/16	00:01	FCONMON	LISTING
	PERFSVM	0102	A	PRT	PRT	21M	NONE	09/21/16	00:01	FCONMON	LISTING
	PERFSVM	0096	A	PRT	PRT	21M	NONE	09/15/16	00:01	FCONMON	LISTING
	PERFSVM	0095	A	PRT	PRT	21M	NONE	09/14/16	00:01	FCONMON	LISTING
	PERFSVM	0091	A	PRT	PRT	21M	NONE	09/10/16	00:01	FCONMON	LISTING
	PERFSVM	0094	A	PRT	PRT	21M	NONE	09/13/16	00:01	FCONMON	LISTING
	PERFSVM	0090	A	PRT	PRT	21M	NONE	09/09/16	00:01	FCONMON	LISTING
	PERFSVM	0093	A	PRT	PRT	21M	NONE	09/12/16	00:01	FCONMON	LISTING
	PERFSVM	0092	A	PRT	PRT	21M	NONE	09/11/16	00:01	FCONMON	LISTING
	PERFSVM	0089	A	PRT	PRT	21M	NONE	09/08/16	00:01	FCONMON	LISTING
	PERFSVM	0082	A	PRT	PRT	21M	NONE	09/01/16	00:01	FCONMON	LISTING
	PERFSVM	0083	A	PRT	PRT	21M	NONE	09/02/16	00:01	FCONMON	LISTING
	PERFSVM	0086	A	PRT	PRT	21M	NONE	09/05/16	00:01	FCONMON	LISTING
	PERFSVM	0075	A	PRT	PRT	21M	NONE	08/25/16	00:01	FCONMON	LISTING

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT

MA A 05/001
 256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Files: 0% Used 1 of 563
Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	OPERATNS	*0001	D	RDR		0K	NONE	07/04/16	12:32		HCPDUMP
	OPERATNS	*0002	D	RDR	DMP	0K	NONE	07/04/16	12:32	CPDUMP	CPDUMP
	OPERATOR	*0001	T	PRT	CON	812K	NONE	07/04/16	12:32		
	DTCVSW1	*0001	T	PRT	CON	24K	NONE	07/04/16	12:32		
	DTCVSW2	*0001	T	PRT	CON	44K	NONE	07/04/16	12:32		
	VSMGUARD	*0001	T	PRT	CON	28K	NONE	07/04/16	12:32		
	TCPIP	*0001	T	PRT	CON	38M	NONE	07/04/16	12:32		
	ISPYM	*0001	T	PRT	CON	20K	NONE	07/04/16	12:32		
	SSLDCSSM	*0001	T	PRT	CON	20K	NONE	07/04/16	12:32		
	SSL00001	*0001	T	PRT	CON	25M	NONE	07/04/16	12:32		
	SSL00002	*0001	T	PRT	CON	1M	NONE	07/04/16	12:32		
	SSL00003	*0001	T	PRT	CON	528K	NONE	07/04/16	12:32		
	SSL00004	*0001	T	PRT	CON	56K	NONE	07/04/16	12:32		
	SSL00005	*0001	T	PRT	CON	28K	NONE	07/04/16	12:32		
	VSMWORK1	*0001	T	PRT	CON	80K	NONE	07/04/16	12:33		
	VSMWORK2	*0001	T	PRT	CON	28K	NONE	07/04/16	12:33		
	VSMWORK3	*0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
purge	FTPSEVRE	*0001	T	PRT	CON	100K	NONE	07/04/16	12:33		
	DTCSMAPI	*0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
	BKRRADMIN	0005	T	RDR	CON	1M	NONE	07/04/16	12:33		
	VSMREQIN	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMREQI6	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMREQI0	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMESVSRV	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	ZHCP	0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
	SMTP	*0031	T	PRT	CON	124K	NONE	07/15/16	07:06		
	WAVEWRKS	*0052	T	PRT	CON	543M	NONE	07/28/16	08:42		
	WAVEWRKC	*0044	T	PRT	CON	11M	NONE	07/28/16	08:42		
	WAVEWRKL	*0135	T	PRT	CON	11M	NONE	07/28/16	08:42		
	IC18L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:12		
	IC10L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:12		
	IC07L01	*0001	T	PRT	CON	36K	NONE	07/29/16	14:13		
	MAINT630	0569	T	RDR	CON	8K	NONE	07/29/16	14:13		
	MAINT630	0565	T	RDR	CON	8K	NONE	07/29/16	14:14		
	MAINT630	0537	T	RDR	CON	20K	NONE	07/29/16	14:14		
	IC09L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:14		
	IC06L01	*0001	T	PRT	CON	36K	NONE	07/29/16	14:15		

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

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Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Files: 0% Used 1 of 562
Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	OPERATNS	*0001	D	RDR		0K	NONE	07/04/16	12:32		HCPDUMP
	OPERATNS	*0002	D	RDR	DMP	0K	NONE	07/04/16	12:32	CPDUMP	CPDUMP
	OPERATOR	*0001	T	PRT	CON	812K	NONE	07/04/16	12:32		
	DTCVSW1	*0001	T	PRT	CON	24K	NONE	07/04/16	12:32		
	DTCVSW2	*0001	T	PRT	CON	44K	NONE	07/04/16	12:32		
	VSMGUARD	*0001	T	PRT	CON	28K	NONE	07/04/16	12:32		
	TCPIP	*0001	T	PRT	CON	38M	NONE	07/04/16	12:32		
	ISPYM	*0001	T	PRT	CON	20K	NONE	07/04/16	12:32		
	SSLDCSSM	*0001	T	PRT	CON	20K	NONE	07/04/16	12:32		
	SSL00001	*0001	T	PRT	CON	25M	NONE	07/04/16	12:32		
	SSL00002	*0001	T	PRT	CON	1M	NONE	07/04/16	12:32		
	SSL00003	*0001	T	PRT	CON	528K	NONE	07/04/16	12:32		
	SSL00004	*0001	T	PRT	CON	56K	NONE	07/04/16	12:32		
	SSL00005	*0001	T	PRT	CON	28K	NONE	07/04/16	12:32		
	VSMWORK1	*0001	T	PRT	CON	80K	NONE	07/04/16	12:33		
	VSMWORK2	*0001	T	PRT	CON	28K	NONE	07/04/16	12:33		
	VSMWORK3	*0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
	FTP SERVE	*0001	T	PRT	CON	100K	NONE	07/04/16	12:33		
	DTCSMAP1	*0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
	VSMREQIN	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMREQI6	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMREQIU	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	VSMEVSRV	*0001	T	PRT	CON	20K	NONE	07/04/16	12:33		
	ZHCP	0001	T	PRT	CON	24K	NONE	07/04/16	12:33		
	SMT	*0031	T	PRT	CON	124K	NONE	07/15/16	07:06		
	WAVEWRKS	*0052	T	PRT	CON	543M	NONE	07/28/16	08:42		
	WAVEWRKC	*0044	T	PRT	CON	11M	NONE	07/28/16	08:42		
	WAVEWRKL	*0135	T	PRT	CON	11M	NONE	07/28/16	08:42		
	IC18L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:12		
	IC10L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:12		
	IC07L01	*0001	T	PRT	CON	36K	NONE	07/29/16	14:13		
	MAINT630	0569	T	RDR	CON	8K	NONE	07/29/16	14:13		
	MAINT630	0565	T	RDR	CON	8K	NONE	07/29/16	14:14		
	MAINT630	0537	T	RDR	CON	20K	NONE	07/29/16	14:14		
	IC09L01	*0001	T	PRT	CON	32K	NONE	07/29/16	14:14		
	IC06L01	*0001	T	PRT	CON	36K	NONE	07/29/16	14:15		
	PATRICIA	*0009	T	PRT	CON	28K	NONE	08/01/16	09:47		

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA A 05/001

Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

A - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
18:59:00 Ready; T=0.01/0.01 18:59:00
19:08:18 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:08:18 id
19:08:18 OPERDEMO AT TIVLP3 VIA * 10/07/16 19:08:18 EDT FRIDAY
19:08:18 Ready; T=0.01/0.01 19:08:18
19:08:20 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:08:20 q names
19:08:20 TDLNX02 - SSI , TDLNX01 - SSI , DIRMSAT2 - SSI , DATAMOY2 - SSI
19:08:20 WAVET - DSC , DOCKER1 - DSC , TSM1 - DSC , WAVE - DSC
19:08:20 DASH - DSC , RHEL3 - DSC , RHEL2 - DSC , RHEL1 - DSC
19:08:20 LOHCOST - DSC , VSMEVSRV - DSC , VSMREQIU - DSC , VSMREQI6 - DSC
19:08:20 VSMREQIN - DSC , DTCSMAPI - DSC , BKRSVSFS - DSC , FTPSERVE - DSC
19:08:20 VSMWORK3 - DSC , VSMWORK2 - DSC , VSMWORK1 - DSC , SSL00005 - DSC
19:08:20 SSL00004 - DSC , SSL00003 - DSC , SSL00002 - DSC , SSL00001 - DSC
19:08:20 SSLDCSSM - DSC , ISPVM - DSC , DATAMOVE - DSC , TCPIP - DSC
19:08:20 GCS - DSC , VSMGUARD - DSC , DIRMAINT - DSC , DTCVSW2 - DSC
19:08:20 DTCVSW1 - DSC , VMSEVRP - DSC , VMSEVR - DSC , VMSEVRU - DSC
19:08:20 VMSEVRS - DSC , OPERSYMP - DSC , DISKACNT - DSC , EREP - DSC
19:08:20 OPERATOR - DSC , DEMOADMN - L0004 , BKRCATLG - DSC , BKRBKUP - DSC
19:08:20 OPMGRS3 - DSC , OPMGRS2 - DSC , OPMGRS1 - DSC , OPMGRM1 - DSC
19:08:20 OPSSVSFS - DSC , RMSMASTR - DSC , TCLM1 - DSC , TCDMM - DSC
19:08:20 TCTMM - DSC , TMLM1CAT - DSC , TMDMMCAT - DSC , PATCLONE - DSC
19:08:20 RHEL5 - DSC , IC02L01 - DSC , IC03L01 - DSC , IC05L01 - DSC
19:08:20 IC04L01 - DSC , IC01L01 - DSC , IC20L01 - DSC , IC11L01 - DSC
19:08:20 IC19L01 - DSC , IC15L01 - DSC , IC08L01 - DSC , IC16L01 - DSC
19:08:20 IC13L01 - DSC , IC12L01 - DSC , IC14L01 - DSC , IC17L01 - DSC
19:08:20 PATRICIA - DSC , IC06L01 - DSC , IC09L01 - DSC , IC07L01 - DSC
19:08:20 IC10L01 - DSC , IC18L01 - DSC , WAVEWRKL - DSC , WAVEWRKC - DSC
19:08:20 WAVEWRKS - DSC , RHEL4 - DSC , SMTP - DSC , RACFDEMO - DSC
19:08:20 PERFSYM - DSC , LNXTEST - DSC , TCPDEMO - DSC , DIRMDEMO - DSC
19:08:20 OPERDEMO - DSC
19:08:20 Ready; T=0.01/0.01 19:08:20
19:08:21 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
19:08:21 id
19:08:21 OPERDEMO AT TIVLP3 VIA * 10/07/16 19:08:21 EDT FRIDAY
19:08:21 Ready; T=0.01/0.01 19:08:21
19:10:00 Spool is 57% full on TIVLP32
19:10:00 Spool is 50% full on TIVLP3
19:11:00 Spool is 51% full on TIVLP32
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPERDEMO-TIVLP3 (Scroll)
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22 427 001
  
```

```
A - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect

id
DEMOADMN AT TIVLP3 VIA RSCS 10/18/16 21:12:47 EDT TUESDAY
Ready; T=0.01/0.01 21:14:40
sendfile test3 file a demoadm operator
File TEST3 FILE A1 sent to DEMOADMN at TIVLP3 on 10/18/16 21:14:40
File TEST3 FILE A1 sent to OPERATOR at TIVLP3 on 10/18/16 21:14:40
2 files have been sent
Ready; T=0.01/0.01 21:14:46
sendfile test32 file a operator at tivlp32
File TEST32 FILE A1 sent to OPERATOR at TIVLP32 on 10/18/16 21:14:46
Ready; T=0.01/0.01 21:14:46
From TIVLP32: DMTAXM1041 File (0006) spooled to OPERATOR -- origin TIVLP3(DEMO
ADMN) 10/18/16 21:14:45 EDT

viewspl RUNNING TIVLP3
MA A 256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22 42/001
```

A - TIVLP3 Pok - [43 x 80]

File Edit View Communication Actions Window Help

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 55% Used Files: 0% Used 1 of 672
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	BKRAADMIN	0009	T	RDR	CON	20K	NONE	09/14/16	21:36	TESTBKUP	20160914
	BKRAADMIN	0013	T	RDR	CON	24K	NONE	09/14/16	21:40	TESTBKUP	20160914
	BKRAADMIN	0017	T	RDR	CON	4K	NONE	09/14/16	21:40	WORKER	OUTPUT
	BKRAADMIN	0021	T	RDR	CON	12K	NONE	09/15/16	20:16	TESTBKUP	20160914
	BKRAADMIN	0025	T	RDR	CON	24K	NONE	09/15/16	20:16	WKLYBKUP	20160915
	BKRAADMIN	0029	T	RDR	CON	4K	NONE	09/15/16	20:18	WORKER	OUTPUT
	BKRAADMIN	0033	T	RDR	CON	24K	NONE	09/15/16	20:22	WKLYBKUP	20160915
	BKRAADMIN	0037	T	RDR	CON	4K	NONE	09/15/16	20:23	WORKER	OUTPUT
	BKRAADMIN	0041	T	RDR	CON	24K	NONE	09/15/16	20:42	WKLYFULL	20160915
	BKRAADMIN	0045	T	RDR	CON	4K	NONE	09/15/16	20:42	WORKER	OUTPUT
	BKRAADMIN	0049	T	RDR	CON	24K	NONE	09/15/16	20:45	WKLYFULL	20160915
	BKRAADMIN	0053	T	RDR	CON	20K	NONE	09/15/16	20:45	DALYINCR	20160915
	BKRAADMIN	0057	T	RDR	CON	4K	NONE	09/15/16	20:46	WORKER	OUTPUT
	BKRAADMIN	0061	T	RDR	CON	24K	NONE	09/16/16	13:58	WKLYFULL	20160916
	BKRAADMIN	0065	T	RDR	CON	4K	NONE	09/16/16	13:59	WORKER	OUTPUT
	BKRAADMIN	0069	R	RDR	CON	4K	NONE	09/16/16	14:21	WORKER	OUTPUT
	BKRAADMIN	0073	R	RDR	CON	4K	NONE	09/16/16	14:26	WORKER	OUTPUT
	BKRAADMIN	0077	R	RDR	CON	4K	NONE	09/16/16	14:30	WORKER	OUTPUT
	BKRAADMIN	0081	R	RDR	CON	4K	NONE	09/16/16	14:45	WORKER	OUTPUT
	BKRAADMIN	0085	T	RDR	CON	24K	NONE	09/17/16	03:00	DALYINCR	20160917
	BKRAADMIN	0089	T	RDR	CON	4K	NONE	09/17/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0093	T	RDR	CON	24K	NONE	09/18/16	02:00	WKLYFULL	20160918
	BKRAADMIN	0097	T	RDR	CON	4K	NONE	09/18/16	02:00	WORKER	OUTPUT
	BKRAADMIN	0101	T	RDR	CON	24K	NONE	09/18/16	03:00	DALYINCR	20160918
	BKRAADMIN	0105	T	RDR	CON	4K	NONE	09/18/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0109	T	RDR	CON	24K	NONE	09/19/16	03:00	DALYINCR	20160919
	BKRAADMIN	0113	T	RDR	CON	4K	NONE	09/19/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0117	T	RDR	CON	24K	NONE	09/20/16	03:00	DALYINCR	20160920
	BKRAADMIN	0121	T	RDR	CON	4K	NONE	09/20/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0125	T	RDR	CON	24K	NONE	09/21/16	03:00	DALYINCR	20160921
	BKRAADMIN	0129	T	RDR	CON	4K	NONE	09/21/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0133	T	RDR	CON	24K	NONE	09/22/16	03:00	DALYINCR	20160922
	BKRAADMIN	0137	T	RDR	CON	4K	NONE	09/22/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0141	T	RDR	CON	24K	NONE	09/23/16	03:00	DALYINCR	20160923
	BKRAADMIN	0145	T	RDR	CON	4K	NONE	09/23/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0149	T	RDR	CON	24K	NONE	09/24/16	03:00	DALYINCR	20160924
	BKRAADMIN	0153	T	RDR	CON	4K	NONE	09/24/16	03:00	WORKER	OUTPUT

PF01 = HELP PF02 = VIEW PF03 = END PF04 = PF05 = SORTA PF06 = SORTD
 PF07 = UP PF08 = DOWN PF09 = PF10 = LEFT PF11 = RIGHT

MA A 04/047

256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

A - TIVLP3 Pok - [43 x 80]

File Edit View Communication Actions Window Help

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

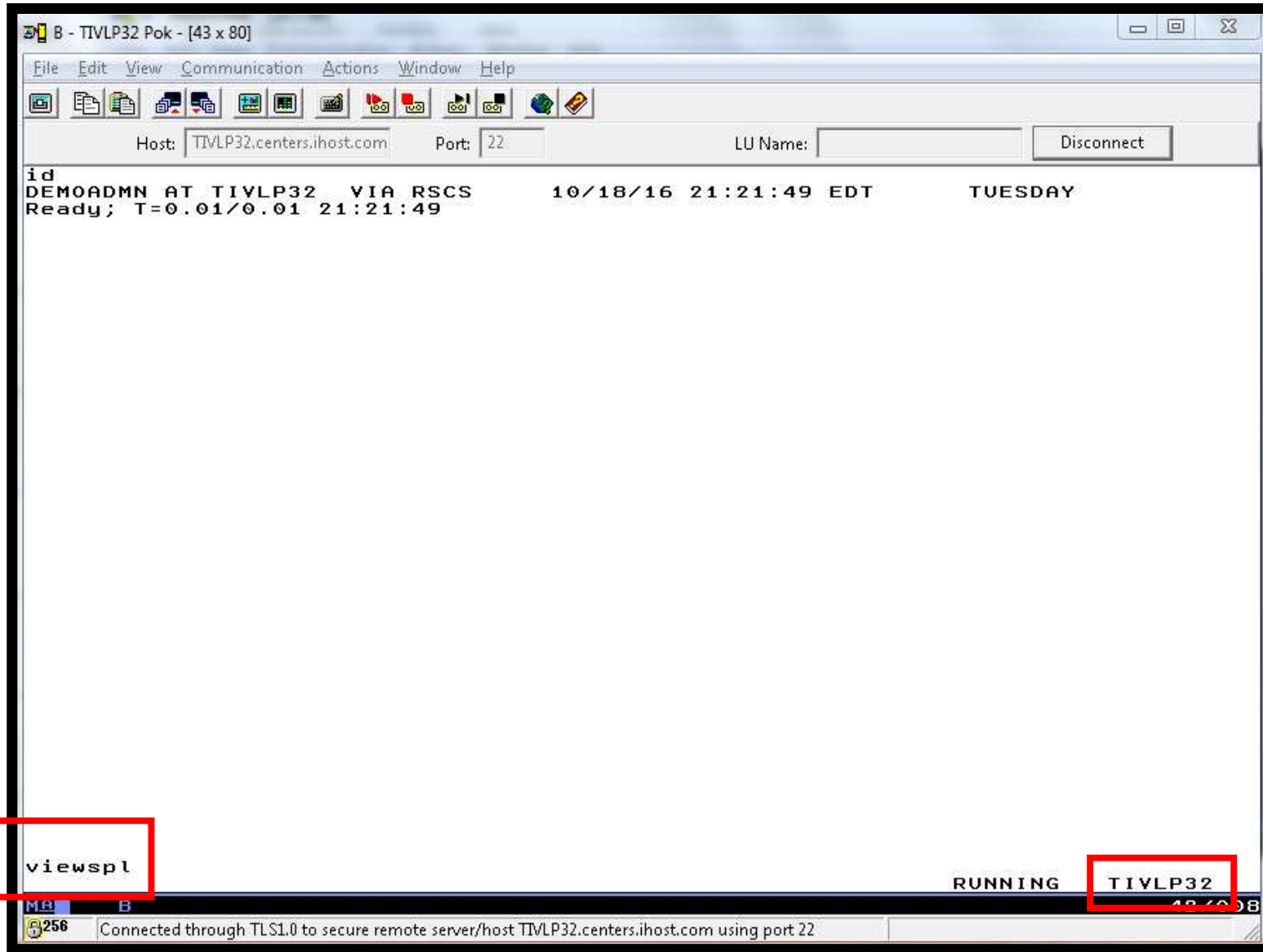
System: TIVLP3 Spool: 55% Used Files: 0% Used 1 of 672
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	OPERATOR	0004	A	RDR	PUN	4K	NONE	10/18/16	21:14	TEST3	FILE
	DEMOADMN	0113	A	RDR	PUN	4K	NONE	10/18/16	21:14	TEST3	FILE
	TCTMM	0101	A	RDR	PRT	4K	NONE	10/18/16	21:00		
	BKRRADMIN	0577	T	RDR	CON	4K	NONE	10/18/16	03:00	WORKER	OUTPUT
	BKRRADMIN	0573	T	RDR	CON	28K	NONE	10/18/16	03:00	DALYSSI	20161018
	BKRRADMIN	0569	T	RDR	CON	16K	NONE	10/18/16	03:00	DALYLP3	20161018
	DATAMOVE	*2641	0	PRT	CON	132K	USER	10/18/16	00:01		
	DIRMAINT	*7569	0	PRT	CON	908K	USER	10/18/16	00:01		
	PERFSVM	0129	A	PRT	PRT	21M	NONE	10/18/16	00:01	FCOMMON	LISTING
	TCTMM	0177	A	RDR	PRT	4K	NONE	10/17/16	21:00		
	DEMOADMN	0097	A	RDR	PRT	4K	NONE	10/17/16	10:19		
	BKRRADMIN	0565	T	RDR	CON	4K	NONE	10/17/16	03:00	WORKER	OUTPUT
	BKRRADMIN	0561	T	RDR	CON	20K	NONE	10/17/16	03:00	DALYSSI	20161017
	BKRRADMIN	0557	T	RDR	CON	16K	NONE	10/17/16	03:00	DALYLP3	20161017
	DIRMSAT2	*+4358	0	PRT	CON	324K	USER	10/17/16	00:01		
	DATAMOV2	*+1378	0	PRT	CON	144K	USER	10/17/16	00:01		
	DATAMOVE	*2637	0	PRT	CON	148K	USER	10/17/16	00:01		
	DIRMAINT	*7085	0	PRT	CON	1M	USER	10/17/16	00:01		
	PERFSVM	0128	A	PRT	PRT	21M	NONE	10/17/16	00:01	FCOMMON	LISTING
	TCTMM	0169	A	RDR	PRT	4K	NONE	10/16/16	21:00		
	BKRRADMIN	0553	T	RDR	CON	4K	NONE	10/16/16	03:00	WORKER	OUTPUT
	BKRRADMIN	0549	T	RDR	CON	20K	NONE	10/16/16	03:00	DALYSSI	20161016
	BKRRADMIN	0545	T	RDR	CON	16K	NONE	10/16/16	03:00	DALYLP3	20161016
	BKRRADMIN	0541	T	RDR	CON	660K	NONE	10/16/16	02:00	WKLYSSI	20161016
	BKRRADMIN	0537	T	RDR	CON	16K	NONE	10/16/16	02:00	WKLYLP3	20161016
	DIRMSAT2	*+1706	1	PRT	CON	324K	USER	10/16/16	00:01		
	DATAMOVE	*2633	1	PRT	CON	144K	USER	10/16/16	00:01		
	DATAMOV2	*+1374	1	PRT	CON	144K	USER	10/16/16	00:01		
	DIRMAINT	*6601	1	PRT	CON	1M	USER	10/16/16	00:01		
	PERFSVM	0127	A	PRT	PRT	21M	NONE	10/16/16	00:01	FCOMMON	LISTING
	TCTMM	0165	A	RDR	PRT	4K	NONE	10/15/16	21:00		
	BKRRADMIN	0533	T	RDR	CON	4K	NONE	10/15/16	03:00	WORKER	OUTPUT
	BKRRADMIN	0529	T	RDR	CON	20K	NONE	10/15/16	03:00	DALYSSI	20161015
	BKRRADMIN	0525	T	RDR	CON	16K	NONE	10/15/16	03:00	DALYLP3	20161015
	DATAMOV2	*+1370	2	PRT	CON	144K	USER	10/15/16	00:01		
	DIRMAINT	*6117	2	PRT	CON	1M	USER	10/15/16	00:01		
	DATAMOVE	*2629	2	PRT	CON	144K	USER	10/15/16	00:01		

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA A 05/001

256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22



Host: TIVLP32.centers.ihost.com Port: 22 LU Name: Disconnect

System: TIVLP32 Spool: 68% Used Files: 0% Used 1 of 662
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	BKRAADMIN	0002	T	RDR	CON	28K	NONE	09/15/16	11:36	TESTBKUP	20160915
	BKRAADMIN	0006	T	RDR	CON	20K	NONE	09/15/16	11:36		
	BKRAADMIN	0010	T	RDR	CON	20K	NONE	09/15/16	11:36		
	BKRAADMIN	0014	T	RDR	CON	20K	NONE	09/15/16	11:36		
	BKRAADMIN	0018	T	RDR	CON	4K	NONE	09/15/16	11:36	WORKER	OUTPUT
	BKRAADMIN	0022	T	RDR	CON	32K	NONE	09/25/16	02:00	WKLYFULL	20160925
	BKRAADMIN	0026	T	RDR	CON	4K	NONE	09/25/16	02:02	WORKER	OUTPUT
	BKRAADMIN	0030	T	RDR	CON	144K	NONE	09/25/16	03:00	DALYINCR	20160925
	BKRAADMIN	0034	T	RDR	CON	20K	NONE	09/26/16	03:00	DALYINCR	20160926
	BKRAADMIN	0038	T	RDR	CON	4K	NONE	09/26/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0042	T	RDR	CON	20K	NONE	09/27/16	03:00	DALYINCR	20160927
	BKRAADMIN	0046	T	RDR	CON	4K	NONE	09/27/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0050	T	RDR	CON	20K	NONE	09/28/16	03:00	DALYINCR	20160928
	BKRAADMIN	0054	T	RDR	CON	4K	NONE	09/28/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0058	T	RDR	CON	24K	NONE	09/29/16	03:00	DALYINCR	20160929
	BKRAADMIN	0062	T	RDR	CON	4K	NONE	09/29/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0066	T	RDR	CON	20K	NONE	09/29/16	23:06	WKLYLP32	20160929
	BKRAADMIN	0070	T	RDR	CON	4K	NONE	09/29/16	23:06	WORKER	OUTPUT
	BKRAADMIN	0074	T	RDR	CON	20K	NONE	10/02/16	02:00	WKLYLP32	20161002
	BKRAADMIN	0078	T	RDR	CON	20K	NONE	10/02/16	02:00	WKLYSSI	20161002
	BKRAADMIN	0082	T	RDR	CON	4K	NONE	10/02/16	02:01	WORKER	OUTPUT
	BKRAADMIN	0086	T	RDR	CON	136K	NONE	10/02/16	03:00	DALYSSI	20161002
	BKRAADMIN	0090	T	RDR	CON	136K	NONE	10/03/16	03:00	DALYSSI	20161003
	BKRAADMIN	0094	T	RDR	CON	136K	NONE	10/04/16	03:00	DALYSSI	20161004
	BKRAADMIN	0098	T	RDR	CON	28K	NONE	10/05/16	03:00		
	BKRAADMIN	0102	T	RDR	CON	756K	NONE	09/15/16	11:36		
	BKRAADMIN	0106	T	RDR	CON	28K	NONE	10/06/16	03:00	DALYSSI	20161006
	BKRAADMIN	0110	T	RDR	CON	4K	NONE	10/06/16	03:00	WORKER	OUTPUT
	BKRAADMIN	0114	T	RDR	CON	924K	NONE	09/15/16	11:35		
	BKRAADMIN	0118	T	RDR	CON	8K	NONE	10/07/16	12:50		
	BKRAADMIN	0122	T	RDR	CON	8K	NONE	10/07/16	12:52		
	BKRAADMIN	0126	T	RDR	CON	16K	NONE	10/07/16	12:53		
	BKRAADMIN	0130	T	RDR	CON	24K	NONE	10/07/16	13:00	DALYSSI	20161005
	BKRAADMIN	0134	T	RDR	CON	8K	NONE	10/07/16	13:01		
	BKRAADMIN	0138	T	RDR	CON	8K	NONE	10/07/16	13:01		
	BKRAADMIN	0142	T	RDR	CON	8K	NONE	10/07/16	13:01		
	BKRAADMIN	0146	T	RDR	CON	4K	NONE	10/07/16	13:01	WORKER	OUTPUT

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA B 04/064

256 Connected through TLS1.0 to secure remote server/host TIVLP32.centers.ihost.com using port 22

Host: TIVLP32.centers.ihost.com Port: 22 LU Name: Disconnect

System: TIVLP32 Spool: 68% Used Files: 0% Used 38 of 662
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	DEMOADMN	0022	R	RDR	PUN	4K	NONE	10/14/16	17:04	TIVLP3	20160924
	OPERATOR	0004	A	RDR	PUN	4K	NONE	10/18/16	21:14	TEST32	FILE
	DEMOADMN	+0113	A	RDR	PUN	4K	NONE	10/18/16	21:14	TEST3	FILE
	BKRADMIN	0002	T	RDR	CON	28K	NONE	08/15/16	11:36	TESTBKUP	20160815
	TDLNX02	+0009	A	RDR	PUN	4K	NONE	09/30/16	19:01	TDLNX02	TIVLP3
	TDLNX02	+0013	A	RDR	PUN	4K	NONE	10/13/16	17:01	TDLNX02	TIVLP3
	BKRADMIN	0218	T	RDR	CON	12K	NONE	10/14/16	16:58	TDLNX01	20161014
	BKRADMIN	0230	T	RDR	CON	12K	NONE	10/14/16	17:07	TDLNX01	20161014
	TDLNX01	+0005	A	RDR	PUN	4K	NONE	09/30/16	15:01	TDLNX01	TIVLP3
	DIRMAINT	*+5629	4	PUN	PUN	4K	USER	10/14/16	00:01	RSCS	TIVLP3
	DEMOADMN	0026	R	RDR	CON	12K	NONE	10/14/16	17:03	RESTORE	00000001
	MAINT630	0422	A	RDR	PUN	4K	NONE	10/10/16	17:21	OMEGACMD	DIRECT
	PERFSVM	0033	A	PRT	PRT	35M	NONE	08/09/16	00:01	FCONMON	LISTING
	PERFSVM	0034	A	PRT	PRT	35M	NONE	08/10/16	00:01	FCONMON	LISTING
	PERFSVM	0035	A	PRT	PRT	35M	NONE	08/11/16	00:01	FCONMON	LISTING
	PERFSVM	0036	A	PRT	PRT	35M	NONE	08/12/16	00:01	FCONMON	LISTING
	PERFSVM	0037	A	PRT	PRT	35M	NONE	08/13/16	00:01	FCONMON	LISTING
	PERFSVM	0038	A	PRT	PRT	35M	NONE	08/14/16	00:01	FCONMON	LISTING
	PERFSVM	0039	A	PRT	PRT	35M	NONE	08/15/16	00:01	FCONMON	LISTING
	PERFSVM	0040	A	PRT	PRT	35M	NONE	08/16/16	00:01	FCONMON	LISTING
	PERFSVM	0041	A	PRT	PRT	34M	NONE	08/17/16	00:01	FCONMON	LISTING
	PERFSVM	0042	A	PRT	PRT	35M	NONE	08/18/16	00:01	FCONMON	LISTING
	PERFSVM	0043	A	PRT	PRT	35M	NONE	08/19/16	00:01	FCONMON	LISTING
	PERFSVM	0044	A	PRT	PRT	35M	NONE	08/20/16	00:01	FCONMON	LISTING
	PERFSVM	0045	A	PRT	PRT	35M	NONE	08/21/16	00:01	FCONMON	LISTING
	PERFSVM	0046	A	PRT	PRT	35M	NONE	08/22/16	00:01	FCONMON	LISTING
	PERFSVM	0047	A	PRT	PRT	34M	NONE	08/23/16	00:01	FCONMON	LISTING
	PERFSVM	0048	A	PRT	PRT	34M	NONE	08/24/16	00:01	FCONMON	LISTING
	PERFSVM	0049	A	PRT	PRT	40M	NONE	08/25/16	00:01	FCONMON	LISTING
	PERFSVM	0050	A	PRT	PRT	57M	NONE	08/26/16	00:01	FCONMON	LISTING
	PERFSVM	0051	A	PRT	PRT	57M	NONE	08/27/16	00:01	FCONMON	LISTING
	PERFSVM	0052	A	PRT	PRT	57M	NONE	08/28/16	00:01	FCONMON	LISTING
	PERFSVM	0053	A	PRT	PRT	57M	NONE	08/29/16	00:01	FCONMON	LISTING
	PERFSVM	0054	A	PRT	PRT	57M	NONE	08/30/16	00:01	FCONMON	LISTING
	PERFSVM	0055	A	PRT	PRT	57M	NONE	08/31/16	00:01	FCONMON	LISTING
	PERFSVM	0056	A	PRT	PRT	57M	NONE	09/01/16	00:01	FCONMON	LISTING
	PERFSVM	0057	A	PRT	PRT	57M	NONE	09/02/16	00:01	FCONMON	LISTING

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA B 05/001
 256 Connected through TLS1.0 to secure remote server/host TIVLP32.centers.ihost.com using port 22

Scenario 4a: How Do You Do That?

Rule and action in Operations Manager:

*

* Send an alert to OPERDEMO console if spool too full

```
DEFSMON NAME SPFLLMSG +
```

```
  USAGE 005-100 +
```

```
  INTERVAL 1 +
```

```
  LIMIT 3,000-01:00:00 +
```

```
  ACTION SPLPGMSG
```

*

```
DEFACTN NAME SPLPGMSG +
```

```
  COMMAND `EXEC MSG2OPER junk junk &0 &sysname &4 &3' +
```

```
  ENV LVM
```

*

```
SUSPEND SPOOL SPFLLMSG
```

Scenario 4a: How Do You Do That?

MSG2OPER EXEC

```
/* Send a message to a central console OPERDEMO for SSI cluster */
Trace Off
Address Command
Parse Arg useridorevent userid event sourcesys msgtext

If useridorevent = '_GOMEMON' Then
  Do
    If event = 9 Then
      msgtext = 'Outbound relocation for' userid 'on' sourcesys 'started'
    Else
      msgtext = 'Inbound relocation for' userid 'on' sourcesys 'started'
      'CP MSGNOH OPERDEMO AT ALL From' sourcesys ':' msgtext
    End
  Else
    If event = 'SPOOL' Then
      Do
        Parse var msgtext howfull .
        'CP MSGNOH OPERDEMO AT ALL Spool is' msgtext'% full on' sourcesys
      End
    Else
      If event = 'PAGE' Then
        Do
          Parse Var msgtext howfull .
          'CP MSGNOH OPERDEMO AT ALL Page space is' msgtext'% full on' sourcesys
        End
      Else
        'CP MSGNOH OPERDEMO AT ALL From' userid 'on' sourcesys ':' msgtext
      End
    End
  End
Exit rc
```

Scenario 4b: Send an Email if Spool Usage is Too High

- Operations Manager monitors the spool usage (percent full)
 - For demo purposes, spool monitor is currently suspended
 - We'll dynamically resume (re-activate) the spool monitor
 - Demo monitor requires spool to only be 5% full or higher
- Usage exceeds the specified limit
- Automatically send an e-mail to someone who can evaluate and take action
- For demo purposes, suspend (de-activate) the spool monitor when complete

Scenario 4b: Detailed Steps

- From an authorized VM user ID, see the spool usage:

`viewspl`

- From a user ID with Operations Manager privileges:

`gomcmd opmgrml resume spool spldemo`

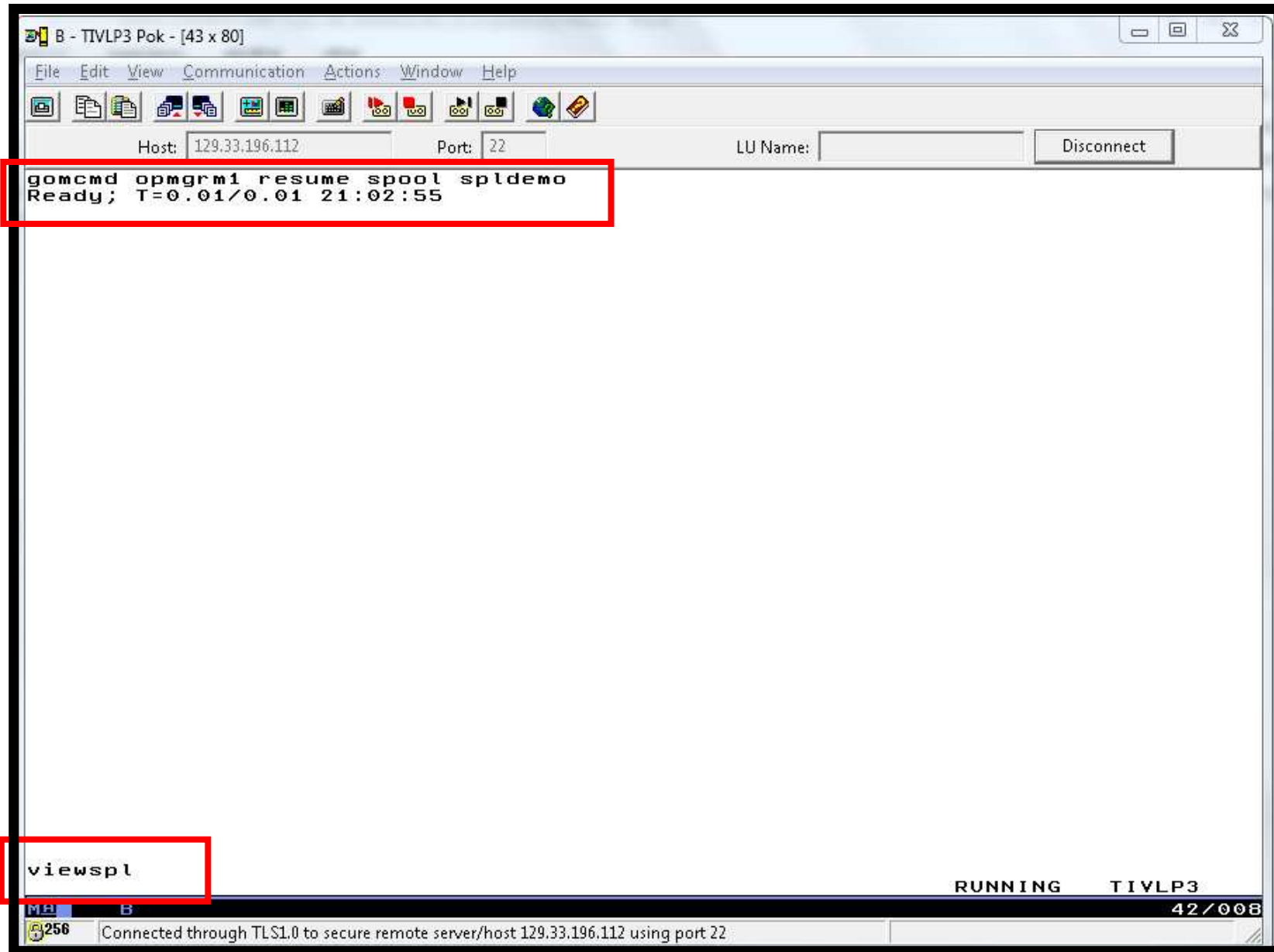
- Check the Operations Manager log to see the spool monitor triggered:

`viewlog`

- Check the inbox of the appropriate person to see the e-mail

- From a user ID with Operations Manager privileges:

`gomcmd opmgrml suspend spool spldemo`



Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 **Spool: 50% Used** Files: 0% Used 1 of 552
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	BKRADMIN	0001	T	RDR	CON	1M	NONE	07/04/16	12:33		
	BKRADMIN	0005	T	RDR	CON	1M	NONE	07/04/16	12:33		
	BKRADMIN	0009	T	RDR	CON	20K	NONE	09/14/16	21:36	TESTBKUP	20160914
	BKRADMIN	0013	T	RDR	CON	24K	NONE	09/14/16	21:40	TESTBKUP	20160914
	BKRADMIN	0017	T	RDR	CON	4K	NONE	09/14/16	21:40	WORKER	OUTPUT
	BKRADMIN	0021	T	RDR	CON	12K	NONE	09/15/16	20:16	TESTBKUP	20160914
	BKRADMIN	0025	T	RDR	CON	24K	NONE	09/15/16	20:16	WKLYBKUP	20160915
	BKRADMIN	0029	T	RDR	CON	4K	NONE	09/15/16	20:18	WORKER	OUTPUT
	BKRADMIN	0033	T	RDR	CON	24K	NONE	09/15/16	20:22	WKLYBKUP	20160915
	BKRADMIN	0037	T	RDR	CON	4K	NONE	09/15/16	20:23	WORKER	OUTPUT
	BKRADMIN	0041	T	RDR	CON	24K	NONE	09/15/16	20:42	WKLYFULL	20160915
	BKRADMIN	0045	T	RDR	CON	4K	NONE	09/15/16	20:42	WORKER	OUTPUT
	BKRADMIN	0049	T	RDR	CON	24K	NONE	09/15/16	20:45	WKLYFULL	20160915
	BKRADMIN	0053	T	RDR	CON	20K	NONE	09/15/16	20:45	DALYINCR	20160915
	BKRADMIN	0057	T	RDR	CON	4K	NONE	09/15/16	20:46	WORKER	OUTPUT
	BKRADMIN	0061	T	RDR	CON	24K	NONE	09/16/16	13:58	WKLYFULL	20160916
	BKRADMIN	0065	T	RDR	CON	4K	NONE	09/16/16	13:59	WORKER	OUTPUT
	BKRADMIN	0069	R	RDR	CON	4K	NONE	09/16/16	14:21	WORKER	OUTPUT
	BKRADMIN	0073	R	RDR	CON	4K	NONE	09/16/16	14:26	WORKER	OUTPUT
	BKRADMIN	0077	R	RDR	CON	4K	NONE	09/16/16	14:30	WORKER	OUTPUT
	BKRADMIN	0081	R	RDR	CON	4K	NONE	09/16/16	14:45	WORKER	OUTPUT
	BKRADMIN	0085	T	RDR	CON	24K	NONE	09/17/16	03:00	DALYINCR	20160917
	BKRADMIN	0089	T	RDR	CON	4K	NONE	09/17/16	03:00	WORKER	OUTPUT
	BKRADMIN	0093	T	RDR	CON	24K	NONE	09/18/16	02:00	WKLYFULL	20160918
	BKRADMIN	0097	T	RDR	CON	4K	NONE	09/18/16	02:00	WORKER	OUTPUT
	BKRADMIN	0101	T	RDR	CON	24K	NONE	09/18/16	03:00	DALYINCR	20160918
	BKRADMIN	0105	T	RDR	CON	4K	NONE	09/18/16	03:00	WORKER	OUTPUT
	BKRADMIN	0109	T	RDR	CON	24K	NONE	09/19/16	03:00	DALYINCR	20160919
	BKRADMIN	0113	T	RDR	CON	4K	NONE	09/19/16	03:00	WORKER	OUTPUT
	BKRADMIN	0117	T	RDR	CON	24K	NONE	09/20/16	03:00	DALYINCR	20160920
	BKRADMIN	0121	T	RDR	CON	4K	NONE	09/20/16	03:00	WORKER	OUTPUT
	BKRADMIN	0125	T	RDR	CON	24K	NONE	09/21/16	03:00	DALYINCR	20160921
	BKRADMIN	0129	T	RDR	CON	4K	NONE	09/21/16	03:00	WORKER	OUTPUT
	BKRADMIN	0133	T	RDR	CON	24K	NONE	09/22/16	03:00	DALYINCR	20160922
	BKRADMIN	0137	T	RDR	CON	4K	NONE	09/22/16	03:00	WORKER	OUTPUT
	BKRADMIN	0141	T	RDR	CON	24K	NONE	09/23/16	03:00	DALYINCR	20160923
	BKRADMIN	0145	T	RDR	CON	4K	NONE	09/23/16	03:00	WORKER	OUTPUT

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA B 05/001

256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

B - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
03/26/2013 21:12:14 GOMCMD0216L BKRBAKUP "BKRBAK8510I 03/26/13 21:12:14 WAKEUP
03/26/2013 21:12:14 GOMCMD0216L BKRBAKUP "BKRBAK8512I The stack contains 0 ent
03/26/2013 21:17:17 GOMCMD0216L AMVARKIV " " VID=*MSG SRC=MASIUCV CLS=8
03/26/2013 21:17:17 GOMCMD0216L AMVARKIV "03/26/13 21:17:17 WAKEUP exited on a
03/26/2013 21:17:17 GOMCMD0216L AMVARKIV "The stack contains 0 lines. There ar
03/26/2013 21:17:26 GOMCMD0201L DEMOADMN "VIEWSPL" VID=DEMOADMN SRC=MASIUCV C
03/26/2013 21:18:58 GOMCMD0201L DEMOADMN "RESUME SPOOL(SPLFULL)" VID=DEMOADMN
03/26/2013 21:19:02 GOMSM00403I SPOOL ALERT: MONITOR SPLFULL USAGE CONDITI
03/26/2013 21:19:02 GOMSM00401I SPOOL USE: MONITOR SPLFULL SPACE 43 PERCENT,
03/26/2013 21:19:02 GOMSM00402I SPOOL CHG: MONITOR SPLFULL SPACE 0 PERCENT, F
03/26/2013 21:19:02 GOMACT0260I SPOOL SPLFULL ACTION SPLEMAIL TRIGGERED BY _G
03/26/2013 21:19:02 GOMACT0262I ACTION SPLEMAIL BEGIN FOR _GOMSMON SERVER OPMG
03/26/2013 21:19:02 GOMACT0269L COMMAND "EXEC SMTPSPL TLD1 AT US.IBM.COM 43"
03/26/2013 21:19:02 GOMCMD0201L OPMGRM1 "STATUS DETAIL(SPOOLUSR) " VID=OPMGRM
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1293 IS USING 2128
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1295 IS USING 2128
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1296 IS USING 2128
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1297 IS USING 2128
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1275 IS USING 2127
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1276 IS USING 2127
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1277 IS USING 2127
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1278 IS USING 2127
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1279 IS USING 2127
03/26/2013 21:19:02 GOMCMD0970I USER PERFSVM SPOOL FILE ID 1280 IS USING 2127
03/26/2013 21:19:02 GOMCMD0971I USER LISTGEN HAS 174 SPOOL FILES USING 174 SP
03/26/2013 21:19:02 GOMCMD0971I USER MAINT HAS 97 SPOOL FILES USING 380 SPO
03/26/2013 21:19:02 GOMCMD0971I USER BKRADMIN HAS 87 SPOOL FILES USING 2666 SP
03/26/2013 21:19:02 GOMCMD0971I USER OPMGRM1 HAS 49 SPOOL FILES USING 126 SPO
03/26/2013 21:19:02 GOMCMD0971I USER PERFSVM HAS 43 SPOOL FILES USING 91465 S
03/26/2013 21:19:02 GOMCMD0971I USER OPERATOR HAS 24 SPOOL FILES USING 467 SPO
03/26/2013 21:19:02 GOMCMD0971I USER HARRISJO HAS 15 SPOOL FILES USING 21 SPOO
03/26/2013 21:19:02 GOMCMD0971I USER TCPMAINT HAS 13 SPOOL FILES USING 158 SPO
03/26/2013 21:19:02 GOMCMD0971I USER DEMOADMN HAS 10 SPOOL FILES USING 11 SPOO
03/26/2013 21:19:02 GOMCMD0971I USER SINE HAS 6 SPOOL FILES USING 540 SPOO
03/26/2013 21:19:02 GOMCMD2999I STATUS DETAIL COMPLETE
03/26/2013 21:19:02 GOMACT0270L DMSXSU587I XEDIT:
03/26/2013 21:19:02 GOMACT0270L NOTE OPMGRM1 NOTE A1 sent to TLD1 at US.IBM.CO
03/26/2013 21:19:02 GOMACT0267I ACTION SPLEMAIL END RC=0 SERVER OPMGRM1
03/26/2013 21:19:02 GOMACT0260I SPOOL SPLFULL ACTION SPLEMAIL2 TRIGGERED BY _G
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06=
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
_GOMALOG
42/001
Connected to remote server/host 9.82.24.129 using port 23

```

Scenario 4b: How Do You Do That?

Spool monitor and action in Operations Manager:

*

*

```
DEFMON NAME(SPLFULL),+
```

```
  USAGE(025-100),+
```

```
  INTERVAL(1),+
```

```
  LIMIT(3,3600),_
```

```
  ACTION(SPLEMAIL)
```

*

```
DEFACTN NAME(SPLEMAIL),+
```

```
  COMMAND(EXEC SMTPSPL tld1 at us.ibm.com &4),+
```

```
  ENV(LVM)
```

Scenario 4b: How Do You Do That?

SMTSPSPL EXEC (excerpts)

```
/* */
Parse arg mail_user dummyat mail_node spoolpct

errtext = 'Spool is' spoolpct'% full on z/VM system'

/* Get TCP hostname and domain from Ops Mgr global variables */
...
line.1 = 'OPTIONS: NOACK    LOG    SHORT    NONOTEBOOK ALL CLASS A'
line.2 = 'Date: ' Date() ', ' Time()
...
line.8 = errtext 'on' fqdomain_name
line.9 = ' '
line.10 = 'Following are the top ten largest spool files and the top ten u
ith the most spool files.'
line.11 = '=====
line.0 = 11
'PIPE stem line. | > TEMP NOTE A'
'PIPE command GOMCMD OPMGRM1 STATUS DETAIL(SPOOLUSR) | specs words 4-* 1 |
spooldata.'
spooldata.0 = 20
'PIPE stem spooldata. | >> TEMP NOTE A'
'EXEC SENDFILE TEMP NOTE A (NOTE SMTP'
```

Scenario 5: Find and View Spool Files – Clean up the Spool

- Authorized user specifies spool search criteria
 - By user ID
 - By date
 - By file size
- Result list presented
 - Sort
 - Open/view a specific spool file
 - Purge, modify metadata, or transfer a file

Scenario 5: Detailed Steps

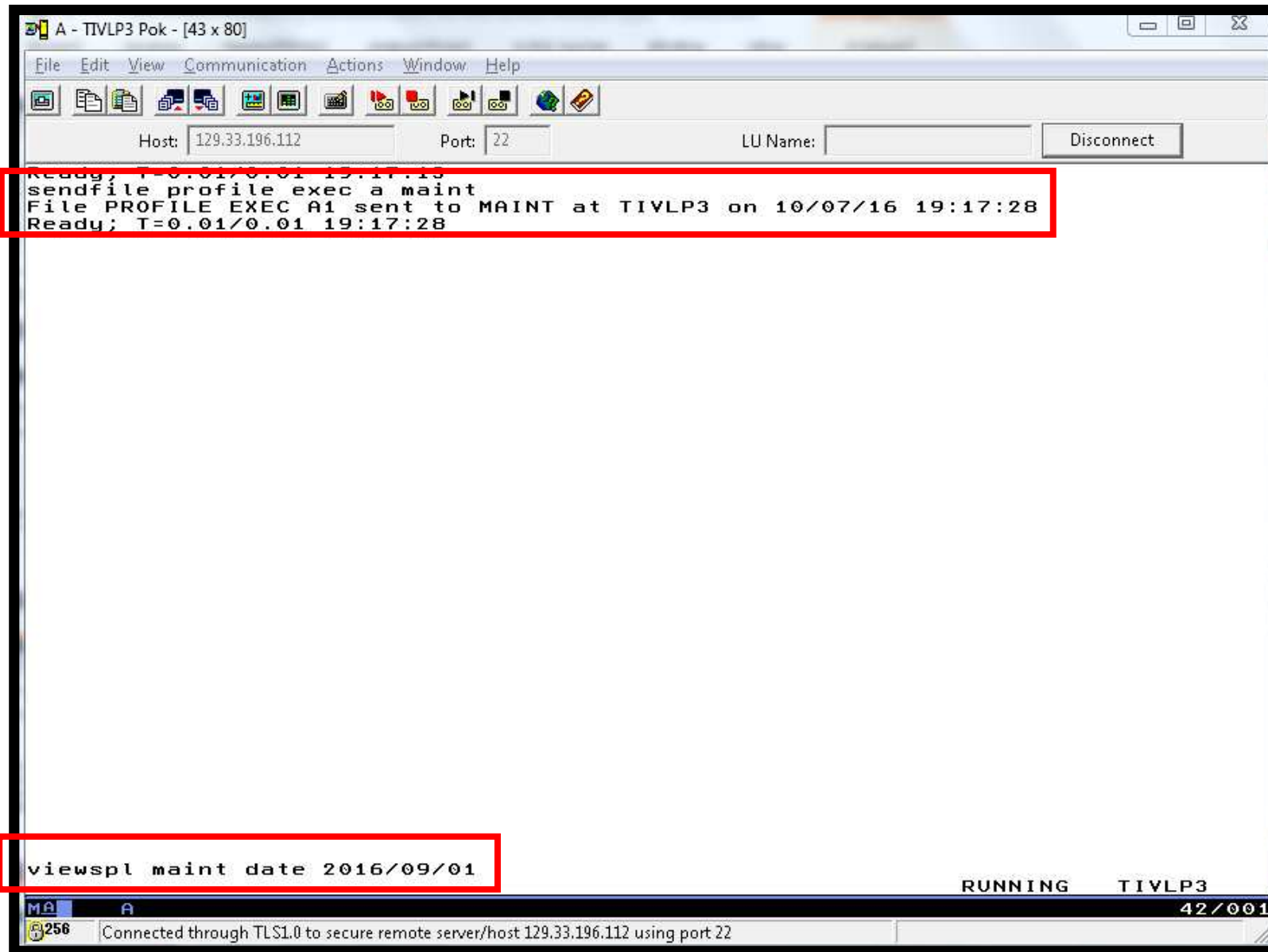
- Send a new spool file to another user ID:

```
sendfile profile exec a maint
```

- From an authorized VM user ID, view the recent spool files for that user:

```
Viewspl maint date 2016/09/01
```

- Sort by date
 - Put cursor on date column header and hit F6
- Find the spool file just sent and type PURGE next to it



Host: 129.33.196.112 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Max: 6.9G Files: 0% Used Max: 1655640 1 of 11

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	MAINT	0094	A	RDR	PUN	4K	NONE	09/08/16	09:44	XCAT	DIRECT
	MAINT	0095	A	RDR	PUN	4K	NONE	09/08/16	09:45	XCAT-1	DIRECT
	MAINT	0093	T	RDR	CON	12K	NONE	09/08/16	08:32		
	MAINT	0096	T	RDR	CON	56K	NONE	09/08/16	23:56		
	MAINT	0106	A	RDR	PUN	4K	NONE	09/15/16	09:58	RMSMASTR	DIRECT
	MAINT	0101	T	RDR	CON	8K	NONE	09/15/16	09:12		
	MAINT	0107	T	RDR	CON	4K	NONE	09/15/16	11:24		
	MAINT	0108	T	RDR	CON	4K	NONE	09/23/16	19:09		
	MAINT	0109	T	RDR	CON	4K	NONE	09/30/16	18:39		
	MAINT	0111	T	RDR	CON	4K	NONE	10/07/16	19:08		
	MAINT	0112	A	RDR	PUN	4K	NONE	10/07/16	19:17	PROFILE	EXEC

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA A 05/001
 256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Files: 0% Used 1 of 11
 Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
purge	MAINT	0112	A	RDR	PUN	4K	NONE	10/07/16	19:17	PROFILE	EXEC
	MAINT	0111	T	RDR	CON	4K	NONE	10/07/16	19:08		
	MAINT	0109	T	RDR	CON	4K	NONE	09/30/16	18:39		
	MAINT	0108	T	RDR	CON	4K	NONE	09/23/16	19:09		
	MAINT	0107	T	RDR	CON	4K	NONE	09/15/16	11:24		
	MAINT	0106	A	RDR	PUN	4K	NONE	09/15/16	09:58	RMSMASTR	DIRECT
	MAINT	0101	T	RDR	CON	8K	NONE	09/15/16	09:12		
	MAINT	0096	T	RDR	CON	56K	NONE	09/08/16	23:56		
	MAINT	0095	A	RDR	PUN	4K	NONE	09/08/16	09:45	XCAT-1	DIRECT
	MAINT	0094	A	RDR	PUN	4K	NONE	09/08/16	09:44	XCAT	DIRECT
	MAINT	0093	T	RDR	CON	12K	NONE	09/08/16	08:32		

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
 PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT

MA A 05/007
 256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 50% Used Files: 0% Used 1 of 10
Max: 6.9G Max: 1655640

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
	MAINT	0111	T	RDR	CON	4K	NONE	10/07/16	19:08		
	MAINT	0109	T	RDR	CON	4K	NONE	09/30/16	18:39		
	MAINT	0108	T	RDR	CON	4K	NONE	09/23/16	19:09		
	MAINT	0107	T	RDR	CON	4K	NONE	09/15/16	11:24		
	MAINT	0106	A	RDR	PUN	4K	NONE	09/15/16	09:58	RMSMASTR	DIRECT
	MAINT	0101	T	RDR	CON	8K	NONE	09/15/16	09:12		
	MAINT	0096	T	RDR	CON	56K	NONE	09/08/16	23:56		
	MAINT	0095	A	RDR	PUN	4K	NONE	09/08/16	09:45	XCAT-1	DIRECT
	MAINT	0094	A	RDR	PUN	4K	NONE	09/08/16	09:44	XCAT	DIRECT
	MAINT	0093	T	RDR	CON	12K	NONE	09/08/16	08:32		

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA A 05/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Scenario 6: Automated Spool Clean Up

- Use z/VM SFPURGER utility to manage spool files based on criteria, e.g.
 - User ID
 - Days in spool
 - Class
 - Number of records
- Automate SFPURGER execution
 - Regularly scheduled using Operations Manager
 - Triggered by Operations Manager spool monitor

Scenario 6: Detailed Steps

- From an authorized VM user ID, view the spool files for a specific user:

```
viewspl user16
```

- Send a file to this user as class Z

```
sendfile profile exec a user16 (class z
```

- View spool files for this user again to see the new file

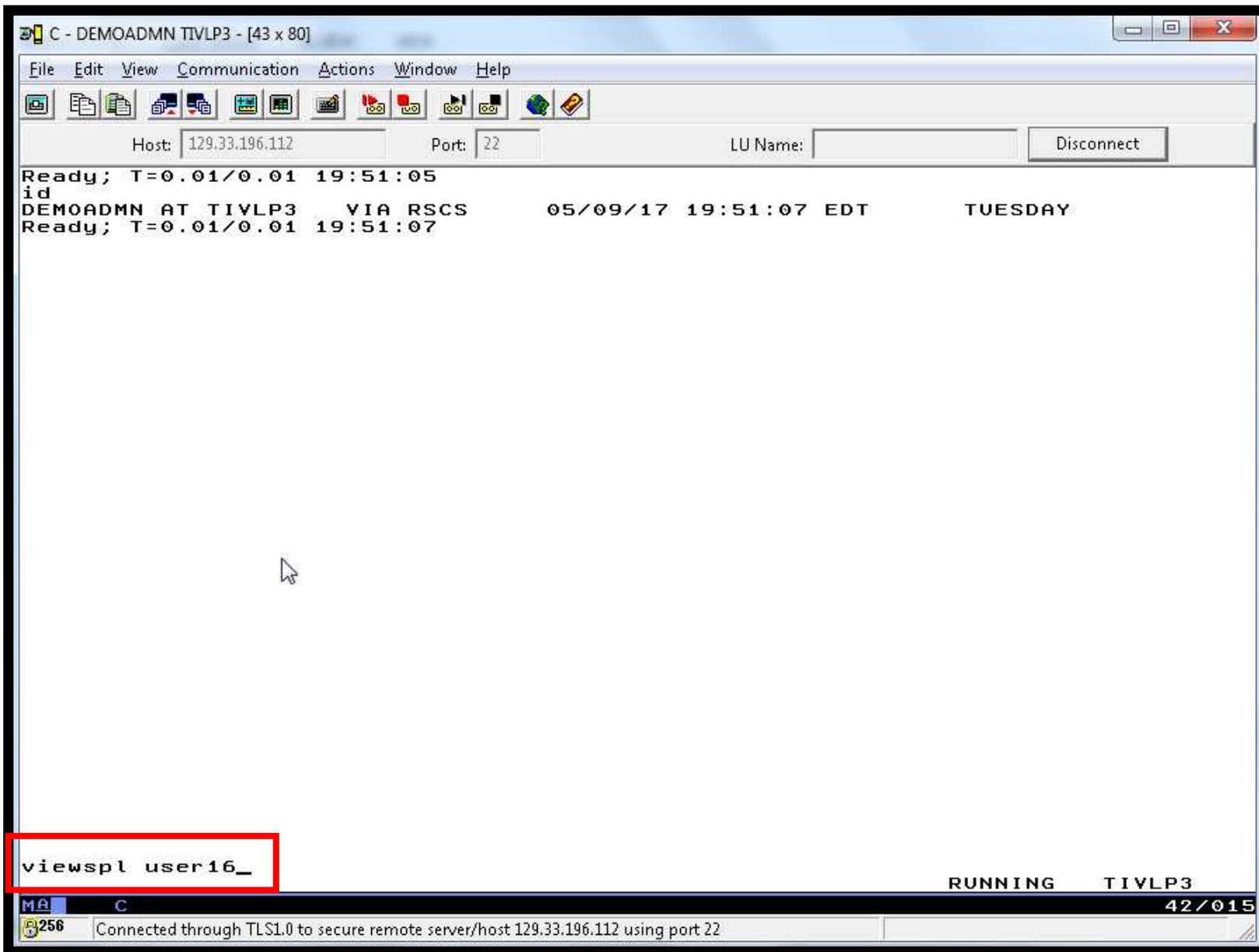
```
viewspl user16
```

- Run the SFPURGER action defined in Operations Manager
 - It will purge any files of class Z

```
gomcmd opmgrml run action sfpurger
```

- View spool files for this user again to see the new file is gone

```
viewspl user16
```



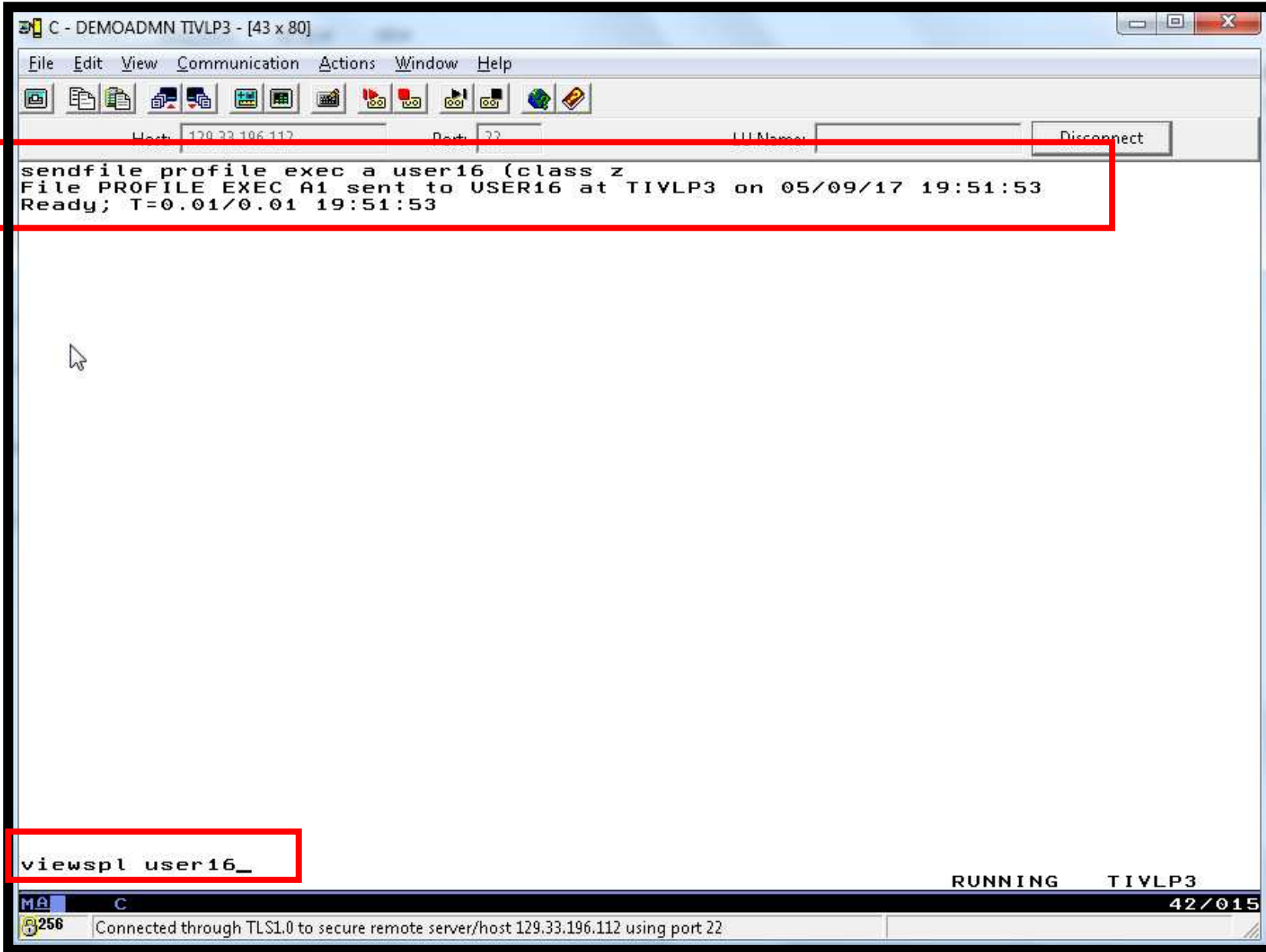
Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 33% Used Files: 0% Used 1 of 2
Maxi: 6.00 Maxi: 1655640

Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
USER16	0005	A	RDR	PUN	4K	NONE	05/09/17	19:51	TIVLP32	20160714
USER16	0009	A	RDR	PUN	4K	NONE	05/09/17	19:51	TEST3	FILE

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA C 05/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22



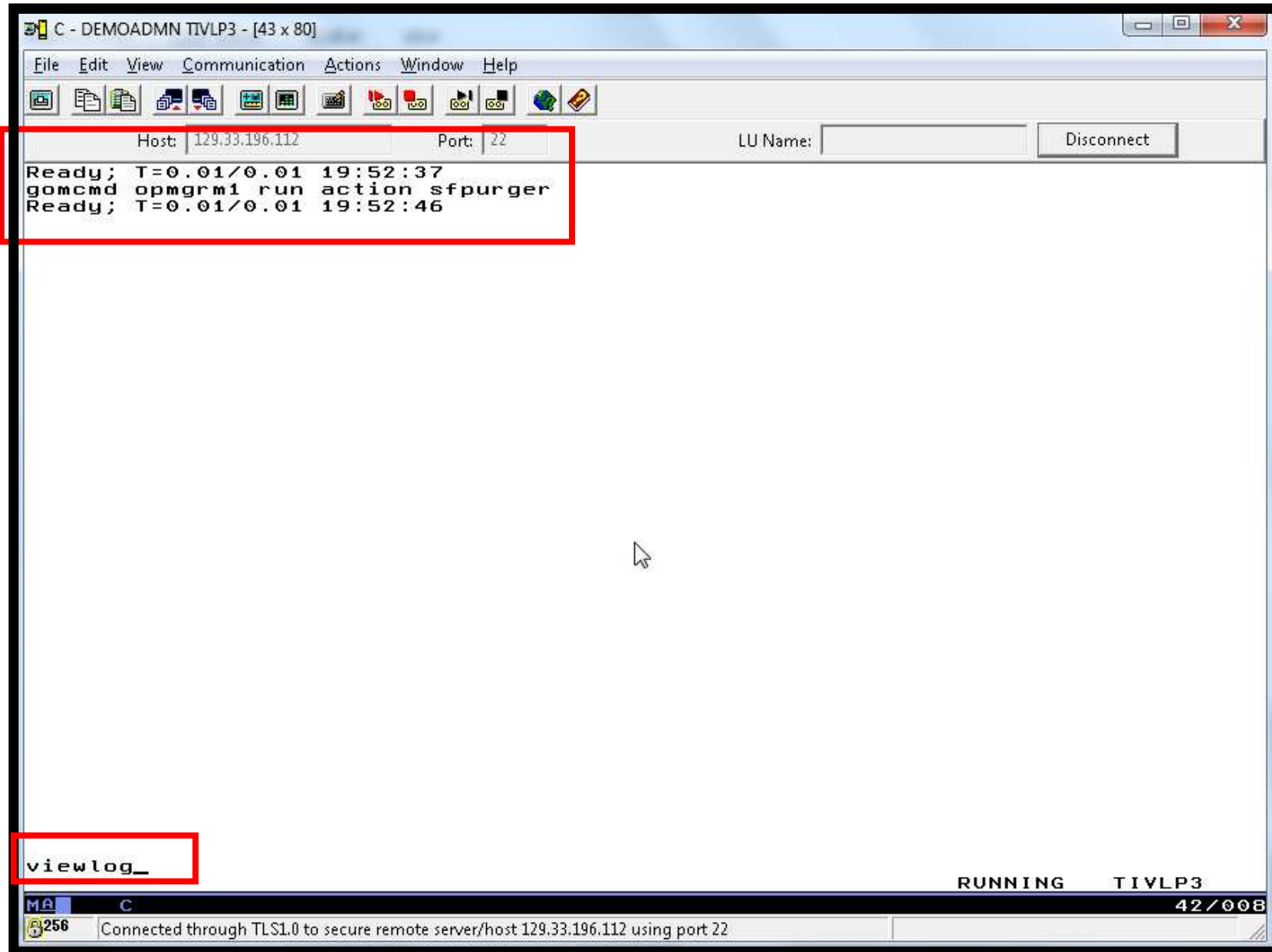
The screenshot shows a terminal window titled "C - DEMOADMN TIVLP3 - [43 x 80]". The window has a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. Below the toolbar, there are fields for Host (129.33.196.112), Port (22), and LU Name, along with a Disconnect button. The main display area shows the following information:

System: TIVLP3 Spool: 33% Used Files: 0% Used 1 of 3
Max: 6.8G Max: 1655610

Cmd	Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
-	USER16	0005	A	RDR	PUN	4K	NONE	05/09/17	19:51	TIVLP32	20160714
	USER16	0009	A	RDR	PUN	4K	NONE	05/09/17	19:51	TEST3	FILE
	USER16	0013	Z	RDR	PUN	4K	NONE	05/09/17	19:51	PROFILE	EXEC

At the bottom of the terminal, there are function key definitions: PF01= HELP, PF02= VIEW, PF03= END, PF04= LEFT, PF05= SORTA, PF06= SORTD, PF07= UP, PF08= DOWN, PF09= RIGHT, PF10= LEFT, PF11= RIGHT, PF12=.

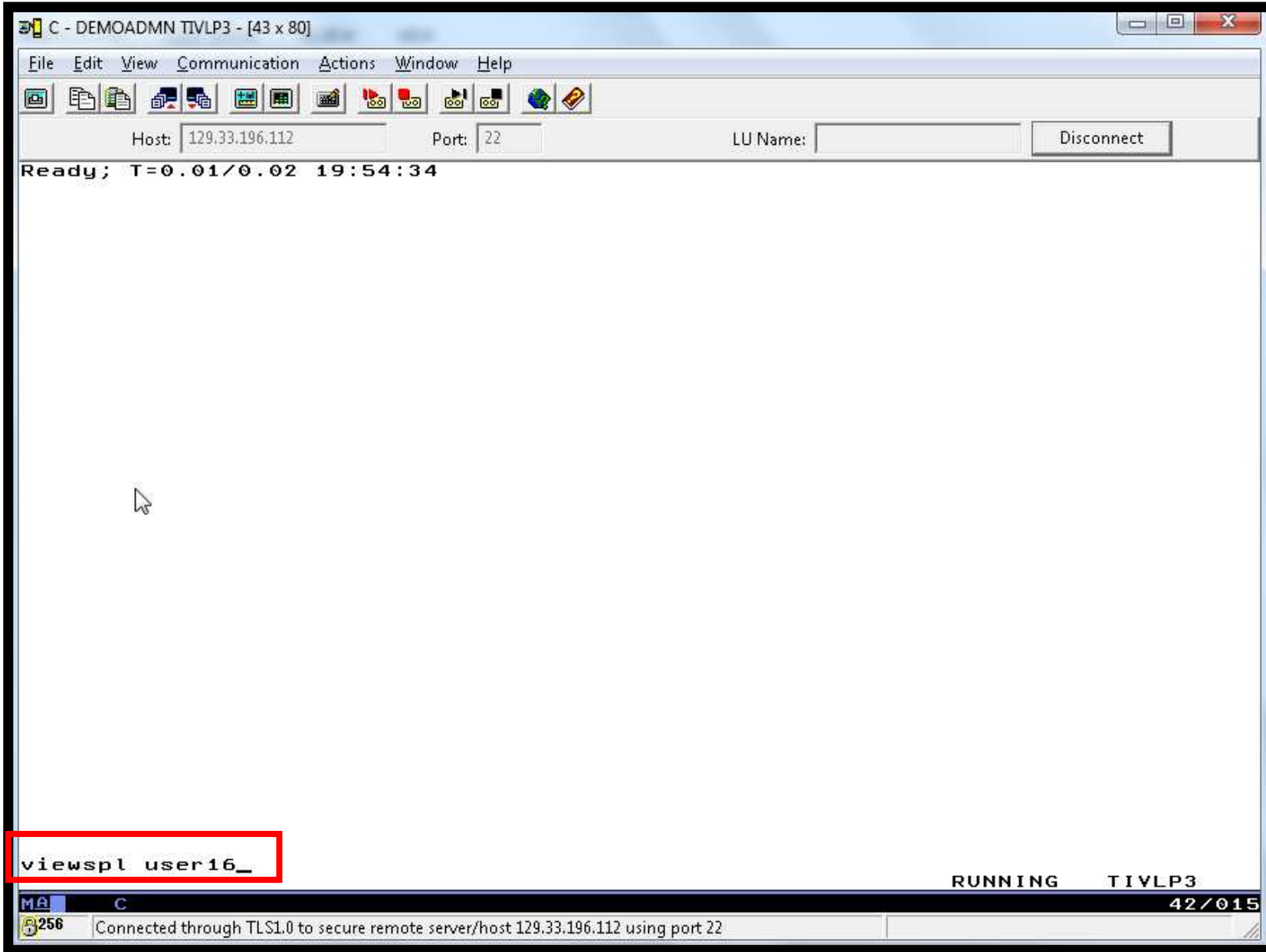
The status bar at the bottom shows "MA C" on the left, "05/001" on the right, and a message: "256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22".



```

C - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
05/09/17 19:52:46 GOMIUC0188L IUCY SYSTEM AND USER SET SYS=TIVLP3 VID=DEMOAD
05/09/17 19:52:46 GOMCMD0201L "RUN ACTION SFPURGER" SYS=TIVLP3 VID=DEMOADMN
05/09/17 19:52:46 GOMACT0260I SCHEDULE *0000001 ACTION SFPURGER TRIGGERED BY_
05/09/17 19:52:46 GOMACT0262I ACTION SFPURGER BEGIN FOR _GOMSCHD SERVER OPMGRS
05/09/17 19:52:46 GOMACT0269L COMMAND "EXEC SFPURGER FORCE"
05/09/17 19:52:46 GOMCMD0216L _GOMSCHD "*" -- Operations Manager Action SFPURGE
05/09/17 19:52:46 GOMIUC0188L IUCY DISCONNECTING SYS=TIVLP3 VID=DEMOADMN ALI
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2452I SFPURGER starting
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2453I Running in FORCE
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2456I Erasing old output
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2459I Examining output
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2462I Spool file scanni
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2463I 1 of the 541 spoo
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2485I 0 of the 541 spoo
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2486I 0 of the 541 spoo
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2466I Run terminating -
05/09/17 19:52:46 GOMCMD0216L OPERATOR "OPMGRS4: DMSCYS2485I SFPURGER RUN17129
05/09/17 19:52:46 GOMACT0270I DMSCYS2469I SFPURGER OPTIONS file processed ...
05/09/17 19:52:46 GOMACT0270I DMSCYS2452I SFPURGER starting at 19:52:46 on 9 M
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2453I Running in FORCE mode - RUN17129.
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2470I Using SFPURGER MODULE with SFPDEMO C
05/09/17 19:52:46 GOMACT0270I DMSCYS2456I Erasing old output files till 201712
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2496I Control card scan complete.
05/09/17 19:52:46 GOMACT0270I DMSCYS2459I Examining output file ...
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2462I Spool file scanning begins ...
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2482I Executing: CP PURGE USER16 RDR 0013
05/09/17 19:52:46 GOMACT0270I 0000001 FILE PURGED
05/09/17 19:52:46 GOMACT0270I DMSCYS2463I 1 of the 541 spool files HAVE been p
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2485I 0 of the 541 spool files HAVE been c
05/09/17 19:52:46 GOMACT0270I HCPMFS057I OPERATOR not receiving; disconnected
05/09/17 19:52:46 GOMACT0270I DMSCYS2486I 0 of the 541 spool files HAVE been h
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06=
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
_GOMALOG-TIVLP3
MA C 42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```



C - DEMOADMN TIVLP3 - [43 x 80]

File Edit View Communication Actions Window Help

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

System: TIVLP3 Spool: 33% Used Files: 0% Used 1 of 2
Max: 6.9G Max: 1655640

Owner	File	CLS	QUE	TYP	Size	Hold	Date	Time	Name	Type
USER16	0005	A	RDR	PUN	4K	NONE	05/09/17	19:51	TIVLP32	20160714
USER16	0009	A	RDR	PUN	4K	NONE	05/09/17	19:51	TEST3	FILE

PF01= HELP PF02= VIEW PF03= END PF04= PF05= SORTA PF06= SORTD
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12=

MA C 05/001

256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Scenario 6: How Do You Do That?

Action in Operations Manager to call z/VM's SFPURGER EXEC

```
*  
DEFACTN NAME SFPURGER +  
  COMMAND 'EXEC SFPURGER FORCE' +  
  ENV SVM
```

SFPURGER OPTIONS file

```
* Send console log to user ID DEMOADMN at demo node  
CONSOLE DEMOADMN TIVLP3  
* Erase LOG and RUN files that are more than 3 days old  
KEEPDAY 21  
* Set prime shift start and end times  
PRIMSHFT 07:30:00 16:30:00  
* Use defaults for the following:  
* MSGTYPE SORTMOD SFPCNTL SOSCNTL SFPMOD APPEND  
SFPCNTL SFPTRACY
```

Scenario 6: How Do You Do That?

SFPTRACY CONTROL

* Ignore any spool files found in the NSS queue (privilege class E)

```
QUEUE NSS                                ACTION IGNORE
```

*

* Purge any spool files found in class Z

```
CLASS Z                                  ACTION PURGE
```

Make sure OPMGRM1 (or the action processing server that will run SFPURGER) links and accesses MAINT 193 disk for access to SFPURGER functions

Make sure OPMGRM1 (or the action processing server that will run SFPURGER) has privilege classes B, D, G, and E.

Scenario 7: Detecting Disk Full Conditions of Logging IDs

- Operations Manager monitors the console of a user ID that does logging
 - DIRMAINT, for example
- Disk full or early warning message triggers a rule/action in Operations Manager
 - Quiesce or shut down DIRMAINT
 - Send the log files to a separate service machine
 - Erase the log files from DIRMAINT's logging disk
 - Restart DIRMAINT
 - Separately, other service machine automatically archives all files it receives (in Archive Manager for z/VM)
 - Log files are safely archived in Archive Manager and DIRMAINT is running with a clean log disk
- Get a copy of the console for further review/debugging

Scenario 7: Detailed Steps

- From an authorized VM user ID, view the DIRMAINT console:

```
viewcon dirmaint
```

- In the console view

- Issue CMS commands to copy old (large) log files to DIRMAINT's log disk (repeat as needed with different target filetypes)

```
cms copyfile dirmaint t1170505 t = t1170301 h
```

- Verify the logging disk is more than 75% full

```
cms q disk
```

- Run DIRMAINT's hourly processing now

```
Cms exec dvhourly
```

- Verify the logging disk is less than 75% full

```
cms q disk
```

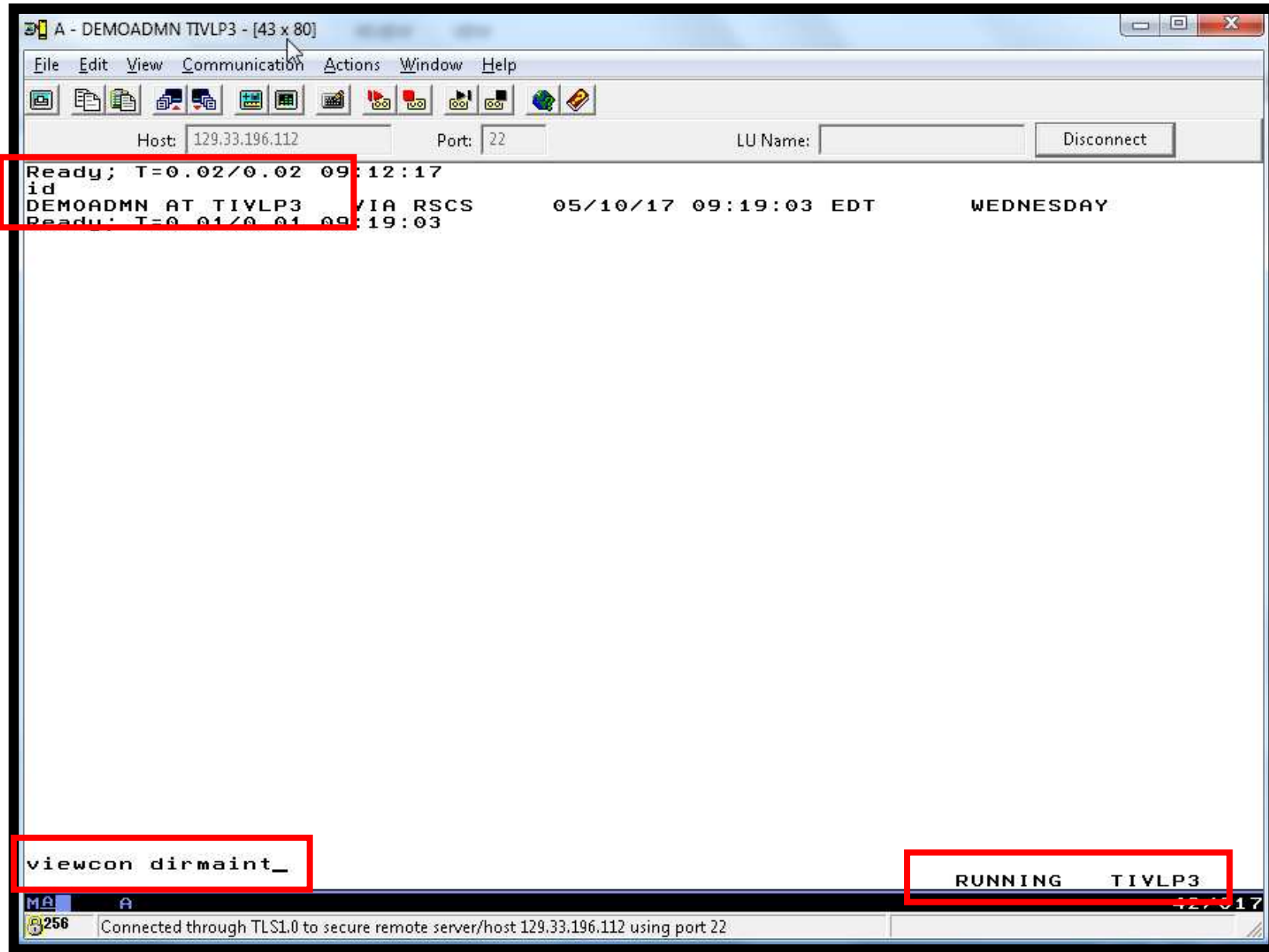
- Exit the console view and find the archived log files in Archive Manager

```
amvlist
```

- Type "archlogs" in the owner field and press ENTER

- Request a copy of the console for further review/debugging

```
gomcmd opmgrml viewcon user(dirmaint),mode(rdr)
```



```

A - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
09:19:34 cms acc 91aa t
09:19:34 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:19:34
09:19:34 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:19:34
09:19:35 DVHREQ2290I Request is: CMS acc 91aa t
09:19:35 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:19:35 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:19:35 DVHREQ2289I = 0.
09:19:35 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:19:35
09:19:35 DVHWA12140I Waiting for work on 17/05/10 at 09:19:35.
09:19:41 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:19:41 cms q disk
09:19:41 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:19:41
09:19:41 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:19:41
09:19:42 DVHREQ2290I Request is: CMS q disk
09:19:42 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:19:42 LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT
09:19:42 DIR155 155 A R/W 12 3390 4096 19 406-19 1754
09:19:42 DRM491 191 C R/W 30 3390 4096 293 2021-37 3379
09:19:42 DRM11F 11F D R/W 8 3390 4096 59 728-51 712
09:19:42 DIR1DF 1DF E R/W 12 3390 4096 209 544-25 1616
09:19:42 PMT551 551 F R/O 40 3390 4096 8 133-02 7067
09:19:42 DIR1DB 1DB G R/W 12 3390 4096 14 352-16 1808
09:19:42 DIR1AA 1AA H R/W 100 3390 4096 12 32-01 17968
09:19:43 MNT190 190 S R/O 207 3390 4096 701 23392-63 13868
09:19:43 DR91AA 91AA T R/W 40 3390 4096 2 4578-64 2622
09:19:43 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:19:43 DIR1FA 1FA Z R/W 12 3390 4096 1 8-01 2152
09:19:43 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:19:43 DVHREQ2289I = 0.
09:19:43 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:19:42
09:19:43 DVHWA12140I Waiting for work on 17/05/10 at 09:19:42.
09:19:49 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:19:49 CMS COPYFILE DIRMAINT TL170505 T = TL170301 H
09:19:49 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:19:49
09:19:49 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:19:49
09:19:50 DVHREQ2290I Request is: CMS COPYFILE DIRMAINT TL170505 T = TL170301 H
09:19:50 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:19:51 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:19:51 DVHREQ2289I = 0.
PF01= EXCMD PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= CMS CO PF10= LEFT PF11= RIGHT PF12= RECALL
DIRMAINT-TIVLP3
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

```

A - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
09:20:51 DR91AA 91AA T R/W 40 3390 4096 2 4578-64 2622
09:20:51 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:20:51 DIR1FA 1FA Z R/W 12 3390 4096 1 8-01 2152
09:20:51 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:20:51 DVHREQ2289I = 0.
09:20:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:20:51
09:20:51 DVHWA12140I Waiting for work on 17/05/10 at 09:20:51.
09:21:04 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:21:04 CMS COPYFILE DIRMAINT TL170505 T = TL170304 H
09:21:04 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:21:04
09:21:04 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:04
09:21:05 DVHREQ2290I Request is: CMS COPYFILE DIRMAINT TL170505 T = TL170304 H
09:21:05 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:21:05 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:21:05 DVHREQ2289I = 0.
09:21:05 DIRMAINT TIVLP3.. - 2017/05/10; T=0.02/0.03 09:21:05
09:21:05 DVHWA12140I Waiting for work on 17/05/10 at 09:21:05.
09:21:08 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:21:08 cms q disk
09:21:08 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:21:08
09:21:08 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:08
09:21:09 DVHREQ2290I Request is: CMS q disk
09:21:09 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:21:09 LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT
09:21:09 DIR155 155 A R/W 12 3390 4096 19 406-19 1754
09:21:09 DRM491 191 C R/W 30 3390 4096 293 2021-37 3379
09:21:09 DRM11F 11F D R/W 8 3390 4096 59 728-51 712
09:21:09 DIR1DF 1DF E R/W 12 3390 4096 209 544-25 1616
09:21:09 PMT551 551 F R/O 40 3390 4096 8 133-02 7067
09:21:09 DIR1DB 1DB G R/W 12 3390 4096 14 352-16 1808
09:21:09 DIR1AA 1AA H R/W 100 3390 4096 16 15445-86 2555
09:21:09 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:21:09 DR91AA 91AA T R/W 40 3390 4096 2 4578-64 2622
09:21:09 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:21:09 DIR1FA 1FA Z R/W 12 3390 4096 1 8-01 2152
09:21:09 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:21:09 DVHREQ2289I = 0.
09:21:09 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:09
09:21:09 DVHWA12140I Waiting for work on 17/05/10 at 09:21:09.
PF01= EXCMD PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= CMS CO PF10= LEFT PF11= RIGHT PF12= RECALL
DIRMAINT-TIVLP3 (Scroll)
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22
  
```

```

A - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
09:21:09 DIR1DF 1DF E R/W 12 3390 4096 209 544-25 1616
09:21:09 PMT551 551 F R/O 40 3390 4096 8 133-02 7067
09:21:09 DIR1DB 1DB G R/W 12 3390 4096 14 352-16 1808
09:21:09 DIR1AA 1AA H R/W 100 3390 4096 16 15445-86 2555
09:21:09 MNT190 190 S R/O 207 3390 4096 701 23392-63 13868
09:21:09 DR91AA 91AA T R/W 40 3390 4096 2 4578-64 2622
09:21:09 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:21:09 DIR1FA 1FA Z R/W 12 3390 4096 1 8-01 2152
09:21:09 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:21:09 DVHREQ2289I = 0.
09:21:09 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:09
09:21:09 DVHWA12140I Waiting for work on 17/05/10 at 09:21:09.
09:21:35 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:21:35 cms exec dvhourly
09:21:35 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:21:35
09:21:35 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:35
09:21:36 DVHREQ2288I Request is: CMS exec dvhourly
09:21:36 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:21:36 DVHRLY3895W Disk 01AA is 86% full, exceeding its
09:21:51 * -- Operations Manager Action DIRMLOGB scheduled for execution -- *
09:21:51 DVHRLY3895W WARNING threshold of 75%.
09:21:51 DVHRLY3886I Hourly processing started; with 5 log
09:21:51 DVHRLY3886I files.
09:21:51 DVHRLY3887I Hourly processing completed; 0 log
09:21:51 DVHRLY3887I files processed, 5 log files remaining.
09:21:51 DVHRLY3895W Disk 01AA is 86% full, exceeding its
09:21:51 DVHRLY3895W WARNING threshold of 75%.
09:21:51 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:21:51 DVHREQ2289I = 0.
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.03/0.03 09:21:36
09:21:51 DVHWA12140I Waiting for work on 17/05/10 at 09:21:36.
09:21:51 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:21:36
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:36
09:21:51 DVHREQ2290I Request is: SHUTDOWN
09:21:51 DVHREQ2288I Your SHUTDOWN request for DIRMAINT at * has been accepted.
09:21:51 DVHSHU2193I A shutdown command has been issued by
09:21:51 DVHSHU2193I DIRMAINT from TIVLP3.
09:21:51 DVHSHU2198A The DIRMAINT service machine is logging
09:21:51 DVHSHU2198A off.
PF01= EXCMD PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= CMS CO PF10= LEFT PF11= RIGHT PF12= RECALL
DIRMAINT-TIVLP3
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

```

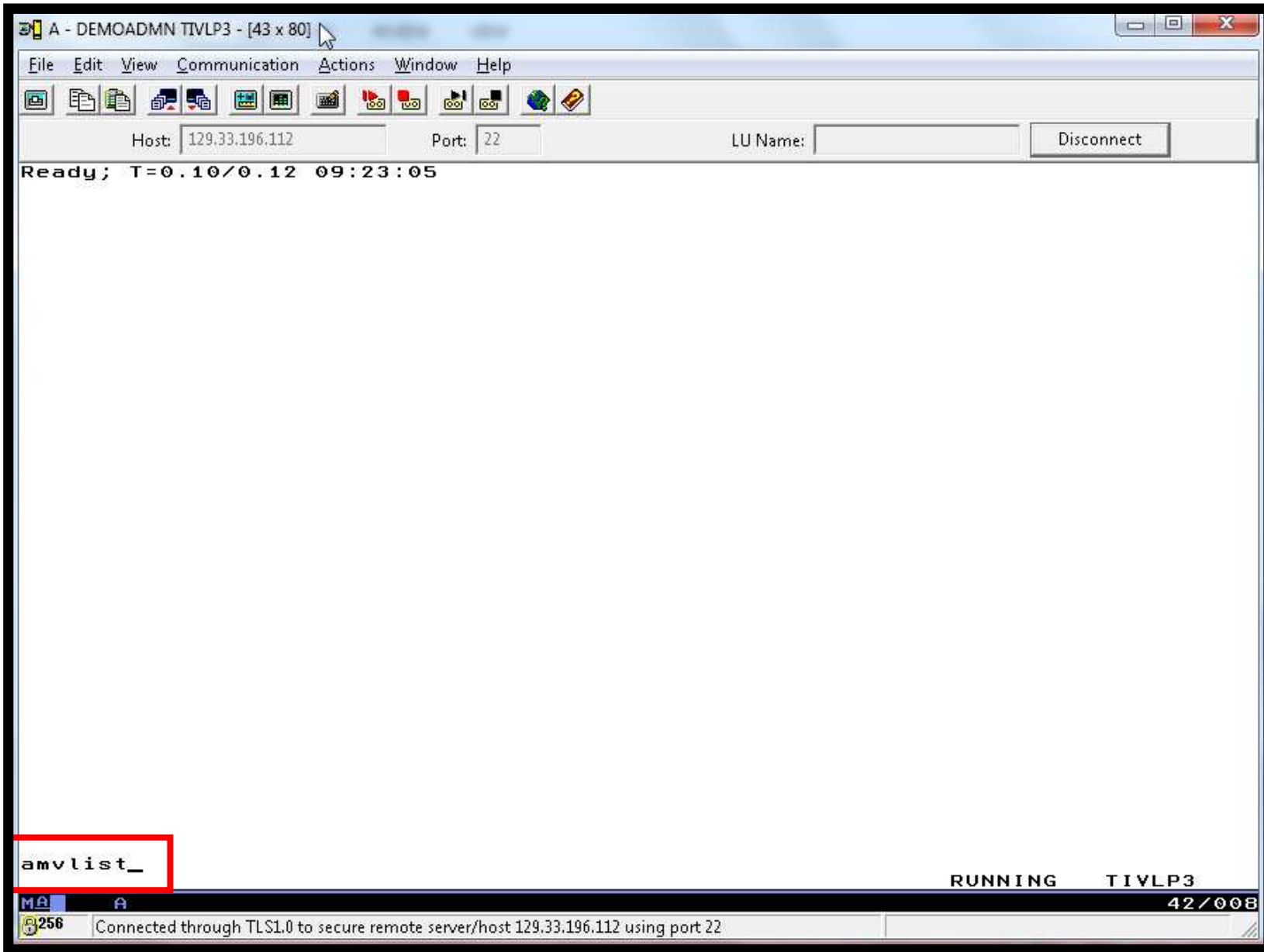
A - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.03/0.03 09:21:36
09:21:51 DVHWA12140I Waiting for work on 17/05/10 at 09:21:36.
09:21:51 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:21:36
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:36
09:21:51 DVHREQ2290I Request is: SHUTDOWN
09:21:51 DVHREQ2288I Your SHUTDOWN request for DIRMAINT at * has been accepted.
09:21:51 DVHSHU2193I A shutdown command has been issued by
09:21:51 DVHSHU2193I DIRMAINT from TIVLP3.
09:21:51 DVHSHU2198A The DIRMAINT service machine is logging
09:21:51 DVHSHU2158A OFF
09:21:51 CONNECT= 00:09:33 VIRTCPU= 000:00.87 TOTCPU= 000:01.01
09:21:51 LOGOFF AT 09:21:37 EDT WEDNESDAY 05/10/17
09:21:51 PRT FILE 3917 SENT FROM DIRMAINT CON WAS 3917 RECS 0632 CPY 001 0 HOL
09:21:51 *-- Operations Manager Action DIRMLGGB scheduled for execution --*
09:21:51 z/VM V6.3.0 2017-04-21 11:10
09:21:51 DASD 0191 LINKED R/W; R/O BY 2 USERS
09:21:51 DASD 011F LINKED R/W; R/O BY 11 USERS
09:21:51 .....
09:21:51 PRODUCT:
09:21:51 IBM Directory Maintenance Facility for z/VM (DirMaint)
09:21:51 5741-A07 (C) Copyright IBM Corporation 1979, 2013.
09:21:51 Function Level 630 Service Level 1501.
09:21:51 DMSACC724I 155 replaces A (191)
09:21:51 DMSACP723I F (551) R/O
09:21:51 DMSACC723I X (01DE) R/W - OS
09:21:51 HCPMSG045E MAINT not logged on
09:21:51 HCPMFS057I OPERATOR not receiving; disconnected
09:21:51 DVHPR02008I ROLE = DIRMAINT
09:21:51 DVHPR02010I TESTING USE OF MSGNOH ...
09:21:51 DASD 0192 DETACHED
09:21:51 DASD 021F DETACHED
09:21:51 DASD 0592 DETACHED
09:21:51 .....
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:51
09:21:51 DVHITI3531W A DISABLE CONTROL already exists. The current setting is
09:21:51 DVHITI3531W being honored. It was not rebuilt using the setting from
09:21:51 DVHITI3531W the config* directory file.
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.04/0.04 09:21:51
09:21:51 DVHWA12140I Waiting for work on 17/05/10 at 09:21:51.
PF01= END= PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= CMS CO PF10= LEFT PF11= RIGHT PF12= RECALL
DIRMAINT-TIVLP3 (Scroll)
MA A 42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

```

A - DEMOADMN TIVLP3 - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
09:21:51 Function Level 630 Service Level 1501.
09:21:51 DMSACC724I 155 replaces A (191)
09:21:51 DMSACP723I F (551) R/O
09:21:51 DMSACC723I X (01DE) R/W - OS
09:21:51 HCPMSG045E MAINT not logged on
09:21:51 HCPMFS057I OPERATOR not receiving; disconnected
09:21:51 DVHPR02008I ROLE = DIRMAINT
09:21:51 DVHPR02010I TESTING USE OF MSGNOH ...
09:21:51 DASD 0192 DETACHED
09:21:51 DASD 021F DETACHED
09:21:51 DASD 0592 DETACHED
09:21:51 .....
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:21:51
09:21:51 DVHITI3531W A DISABLE CONTROL already exists. The current setting is
09:21:51 DVHITI3531W being honored. It was not rebuilt using the setting from
09:21:51 DVHITI3531W the CONFIG* DATADVH file.
09:21:51 DIRMAINT TIVLP3.. - 2017/05/10; T=0.04/0.04 09:21:51
09:21:51 DVHWA12140I Waiting for work on 17/05/10 at 09:21:51.
09:22:48 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
09:22:48 cms q disk
09:22:48 DVHWA12146I Wakeup caused by console attention on 17/05/10 at 09:22:48
09:22:48 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:22:48
09:22:49 DVHREQ2290I Request is: CMS q disk
09:22:49 DVHREQ2288I Your CMS request for DIRMAINT at * has been accepted.
09:22:49 LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT
09:22:49 DIR155 155 A R/W 12 3390 4096 19 406-19 1754
09:22:49 DRM491 191 C R/W 30 3390 4096 293 2021-37 3379
09:22:49 DRM11F 11F D R/W 8 3390 4096 59 728-51 712
09:22:49 DIR1DF 1DF E R/W 12 3390 4096 209 544-25 1616
09:22:49 PMT551 551 F R/O 40 3390 4096 8 133-02 7067
09:22:49 DIR1DB 1DB G R/W 12 3390 4096 14 352-16 1808
09:22:49 DIR1AA 1AA H R/W 100 3390 4096 12 33-01 17967
09:22:49 MNT190 190 S R/O 207 3390 4096 701 23392-63 13868
09:22:49 MNT192 19E Y/S R/O 900 3390 4096 2223 93745-58 68255
09:22:49 DIR1FA 1FA Z R/W 12 3390 4096 1 8-01 2152
09:22:49 DVHREQ2289I Your CMS request for DIRMAINT at * has completed; with RC
09:22:49 DVHREQ2289I = 0.
09:22:49 DIRMAINT TIVLP3.. - 2017/05/10; T=0.01/0.01 09:22:49
09:22:49 DVHWA12140I Waiting for work on 17/05/10 at 09:22:49.
PF01= EXCMD PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= CMS CO PF10= LEFT PF11= RIGHT PF12= RECALL
DIRMAINT-TIVLP3 (Scroll)
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```



The screenshot shows a terminal window titled 'A - DEMOADMN TIVLP3 - [43 x 80]'. The window has a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. Below the toolbar, there are fields for 'Host: 129.33.196.112', 'Port: 22', and 'LU Name:'. A 'Disconnect' button is visible on the right.

The main display area shows a file listing with the following columns: Owner, Filename, Filetype, Fm, Date, Time, and Device or Path. The listing is filtered to show files owned by 'ARCH*'. A red box highlights the filter settings: '18 of 19 shown' and 'Owner: ARCH*'. Another red box highlights a specific row in the listing: 'ARCHLOGS DIRMAINT TL170301 1 17/05/10 09:19:51 192'.

At the bottom of the terminal, there is a command menu:

```

1= Help          3= Quit         4= Return       5= Sort Up
6= Sort Down    7= Backward    8= Forward     10= Recall
11= Details
    
```

The status bar at the bottom shows '256' and 'Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22'. The cursor is positioned at '22/001'.

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

Object: BKRSFS:AMVCATLG.PARCELCAT.00000010.ARCHLOGS.ALLUSERS.DEFAULT.EDF.192

*** Parcel summary:

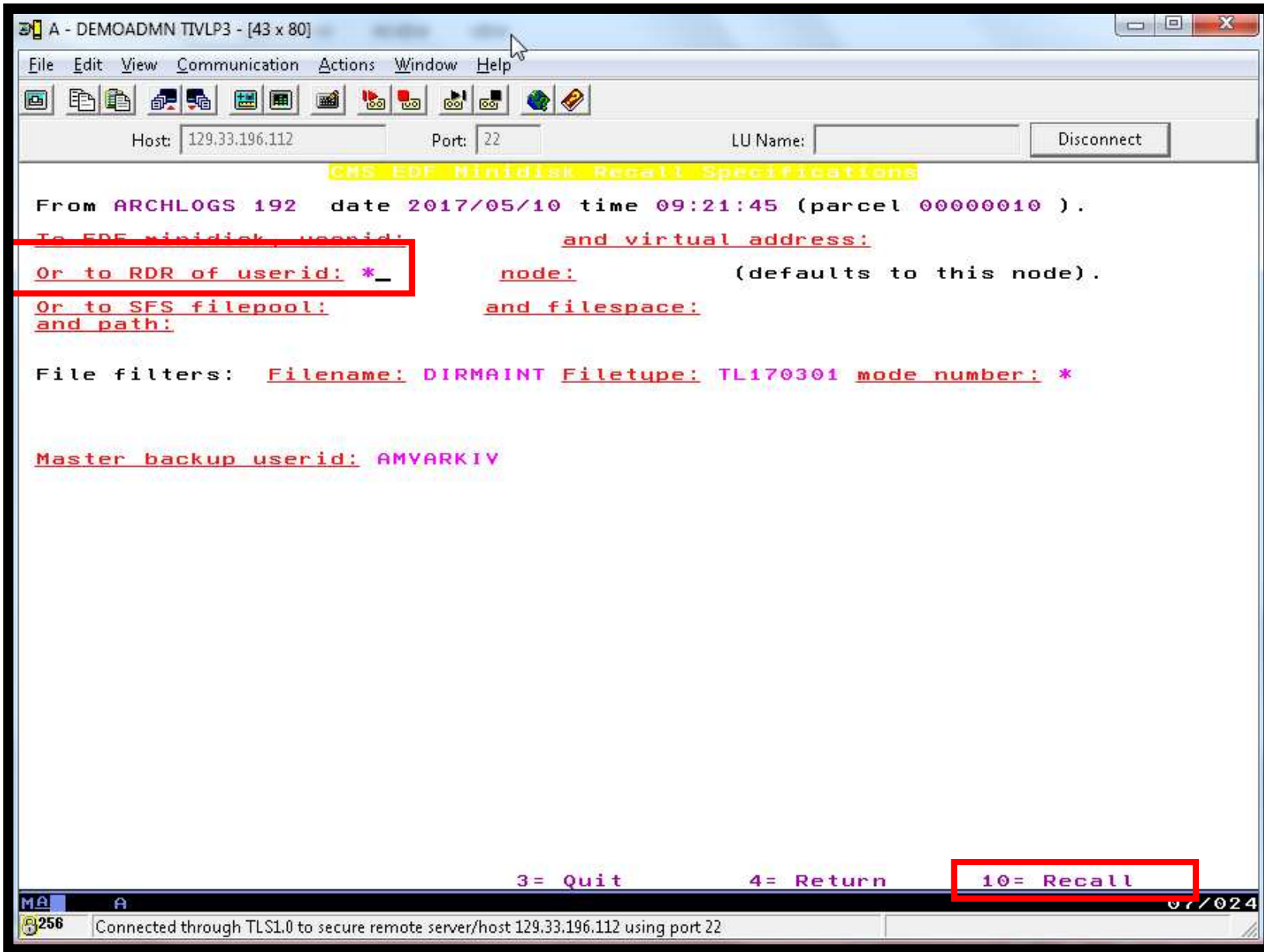
*** Archive Time: 09:21:44.914124 on Wednesday, May 10, 2017 (UTC)
*** Present Loc: CMS File 00000010 PARCEL on BKRSFS:AMVARKIV.USERARK

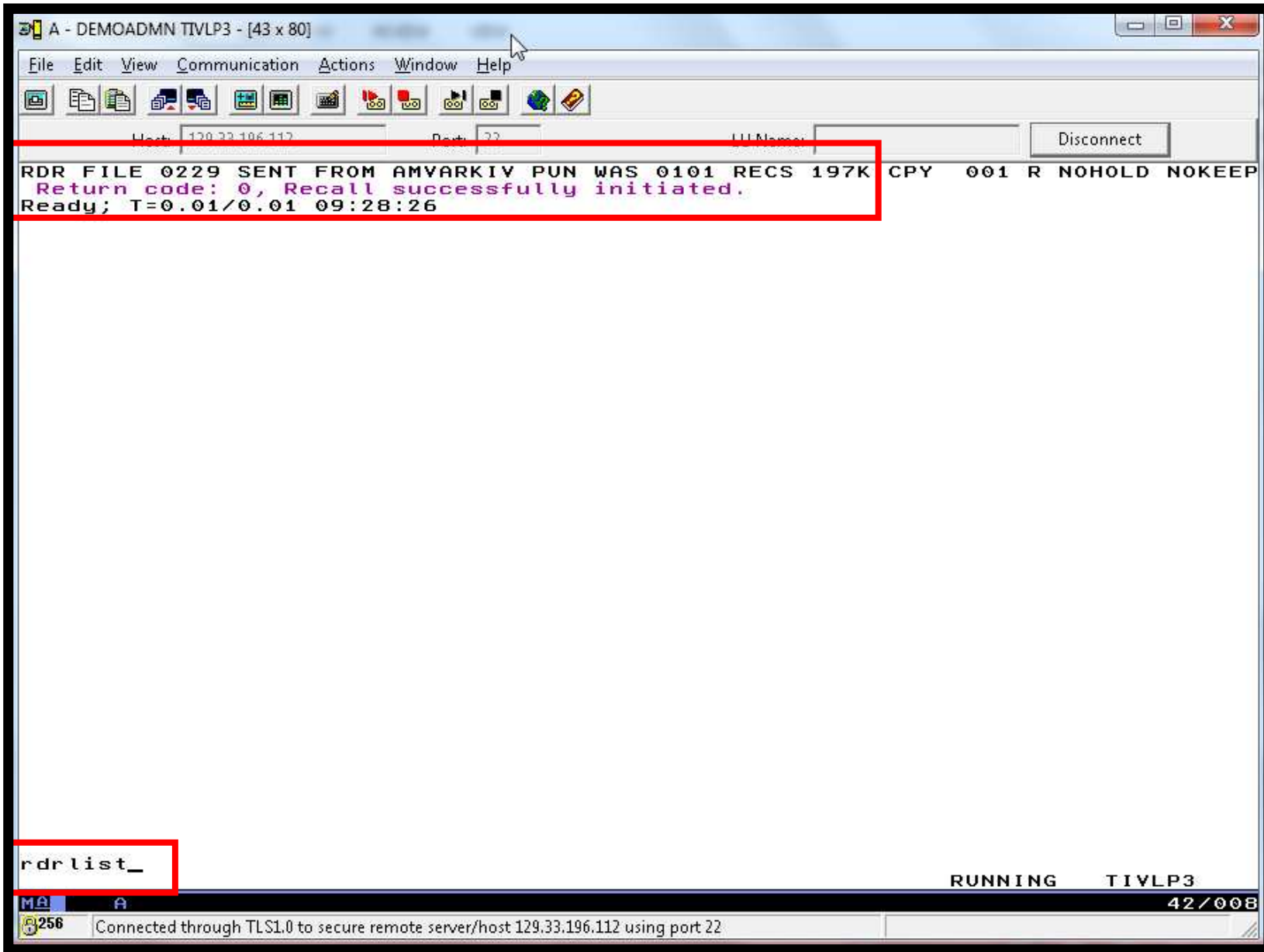
*** Image source was a CMS/EDF minidisk:
*** Owner, ccuu: ARCHLOGS 192
*** EDF blocksize: 4096; 3859 of 5400 blocks in use;
*** Minidisk label: "ARL192"
*** 30 cylinders of 30 formatted: "(RECOMP" is not in effect

Filename	Filetype	yy/mm/dd hh:mm:ss	Format	Records	Blocks
DIRMAINT	TL170301	17/05/10 09:19:51	V/125	161535	3840

3= Quit 4= Return 5= Top 6= Bottom 7= Backward
8= Forward 10= Recall 11= Rgleft

21/001
Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22





A - DEMOADMN TIVLP3 - [43 x 80]

File Edit View Communication Actions Window Help

Host: 129.33.196.112 Port: 22 LU Name: Disconnect

Cmd	Filename	Filetype	Class	User	at	Node	Hold	Records	Date	Time
DEMADMN RDRLIST A0 V 164 Trunc=164 Size=19 Line=1 Col=1 Alt=0										
TDLNXT	JOB	PUN	A	BKRBKUP		TIVLP3	NONE	66	1/04	15:00:50
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	7	1/04	15:10:47
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	7	1/04	15:22:13
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	7	1/04	17:13:49
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	9	1/04	17:47:52
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	9	1/04	18:10:47
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	5	1/04	18:13:19
TDLNXT	JOB	PUN	A	BKRBKUP		TIVLP3	NONE	67	1/04	18:13:37
TDLNXT	JOB	PUN	A	BKRBKUP		TIVLP3	NONE	66	1/04	18:14:22
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	5	1/06	13:21:53
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	9	1/10	14:07:24
(none)	(none)	PRT	A	TCTMM		TIVLP3	NONE	7	1/10	14:20:18
TIVLP3	20170122	PUN	R	BKRWRK04		TIVLP3	NONE	26079	2/27	14:15:04
TIVLP3	20170122	PUN	A	DEMOADMN		TIVLP3	NONE	24836	2/28	10:41:23
TIVLP3	BKRWRK01	PRT	A	OPMGRM1		TIVLP3	NONE	4095	4/21	10:35:42
TESTTAPE	JOB	PUN	A	BKRBKUP		TIVLP3	NONE	95	4/21	13:41:21
TIVLP3	OPERATOR	PRT	A	OPMGRM1		TIVLP3	NONE	4095	5/02	14:53:06
TIVLP3	GOALOG	PRT	A	OPMGRM1		TIVLP3	NONE	16383	5/02	14:53:48
DIRMAINT	TL170301	PUN	R	AMVARKIV		TIVLP3	NONE	196585	5/10	9:28:24

1= Help 2= Refresh 3= Quit 4= Sort(type) 5= Sort(date) 6= Sort(user)
 7= Backward 8= Forward 9= Receive 10= 11= Peek 12= Cursor

====>

X E D I T 1 File

MA A 03/001

256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

Scenario 7: How Do You Do That?

Console rule and action in Operations Manager:

```
DEFRULE NAME DIRMLOG +
  MATCH '*DVHRLY3895*01AA*' +
  USER DIRMAINT +
  ACTION DIRMLOG
*
DEFACTN NAME DIRMLOG +
  INPUT AHI +
  NEXTACTN DIRMLOGB
*
DEFACTN NAME DIRMLOGB +
  COMMAND 'EXEC DIRM1AA &U' +
  ENV LVM
```

Authorize Operations Manager to issue DIRM SHUTDOWN – from MAINT issue

```
DIRM AUTHFOR OPMGRM1 CMDLEVEL 150A CMDSET 0
```

Scenario 7: How Do You Do That?

DIRM1AA EXEC (excerpts):

```
Parse Upper Arg Tuser . ;
/* Try to shut DIRMAINT down. */
Say 'DIRM1AA - Issuing DIRM SHUTDOWN ....';
Address CMS 'DIRM SHUTDOWN';

Address Command 'CP LINK' Tuser '1AA' Dev 'MR';
Address CMS 'ACCESS' Dev Fm;

Address Command 'PIPE CMS LISTFILE DIRMAINT TL*' Fm '( NOHEADER',
'| STEM FILES.';
Do I = 1 to Files.0;
  Parse Upper Var Files.I Fn Ft .;
  Address CMS 'SENDFILE' Fn Ft Fm 'TO ARCHLOGS';
  If Rc = 0 then Do;
    Sent = Sent+1;
    Address CMS 'ERASE' Fn Ft Fm;
  End
Address Command 'CP XAUTOLOG' Tuser;
```

Scenario 8: Process a File of Test Messages as a Console

- Create a file containing lines of test messages
 - Test rules and actions without creating critical conditions
- Use Operations Manager to send the file for processing
 - Treat it as the console of one user
 - Send it again treating it as the console of another user
 - Notice triggered rules and actions are different
- View the “consoles” of these two users

Scenario 8: Detailed Steps

- Create or view a file of test messages

```
xedit test consdata a
```

- Notice the “hello” message in the file

- From a z/VM user ID, send the test file to Operations Manager

- Send it twice, specifying two different “owning” user IDs. One generates a message and one doesn’t:

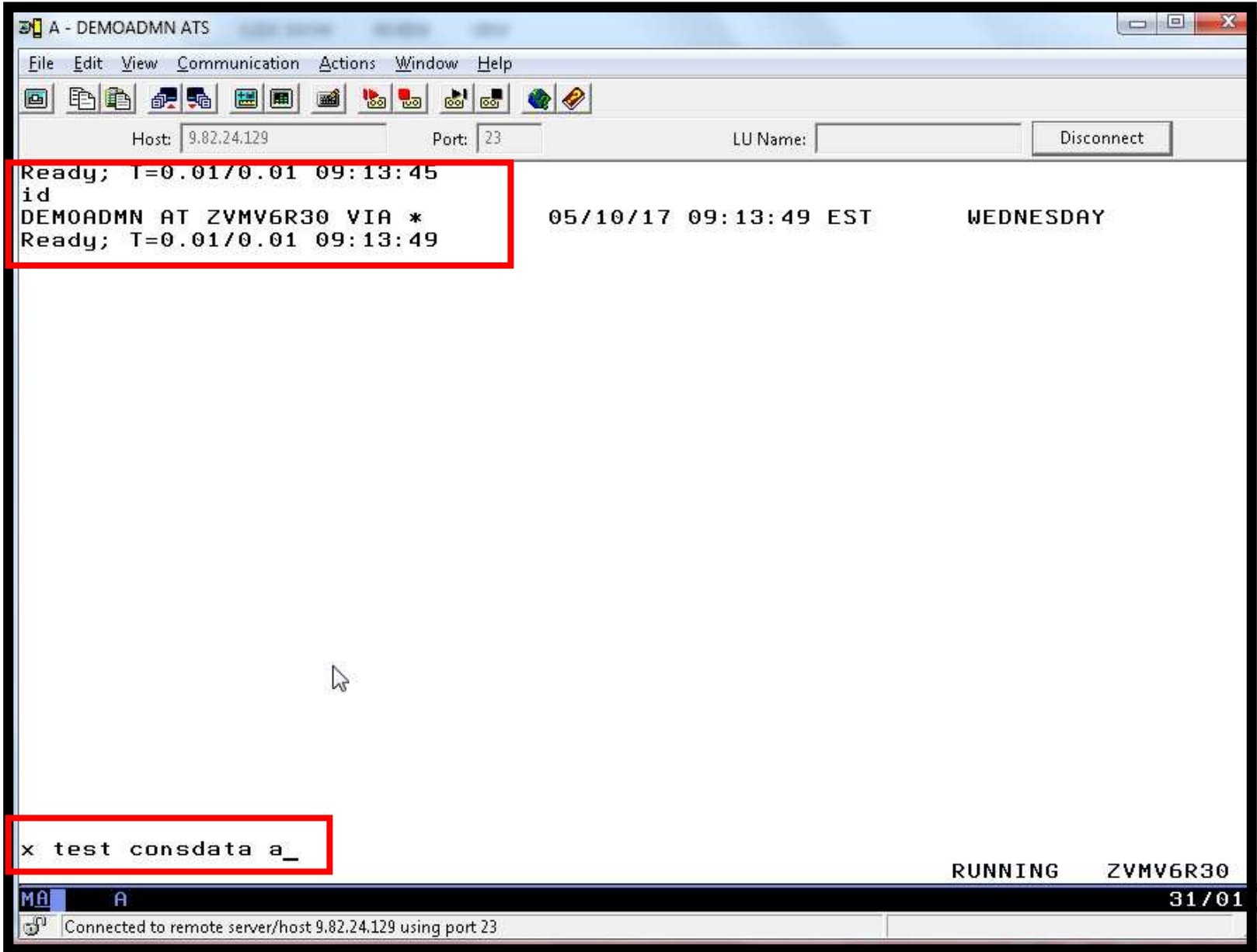
```
gomrsif test consdata a 9.82.24.129 63000 tstadmin8
```

```
gomrsif test consdata a 9.82.24.129 63000 tstuser8
```

- From an authorized z/VM user ID, view the consoles of the owning user IDs:

```
viewcon tstadmin8
```

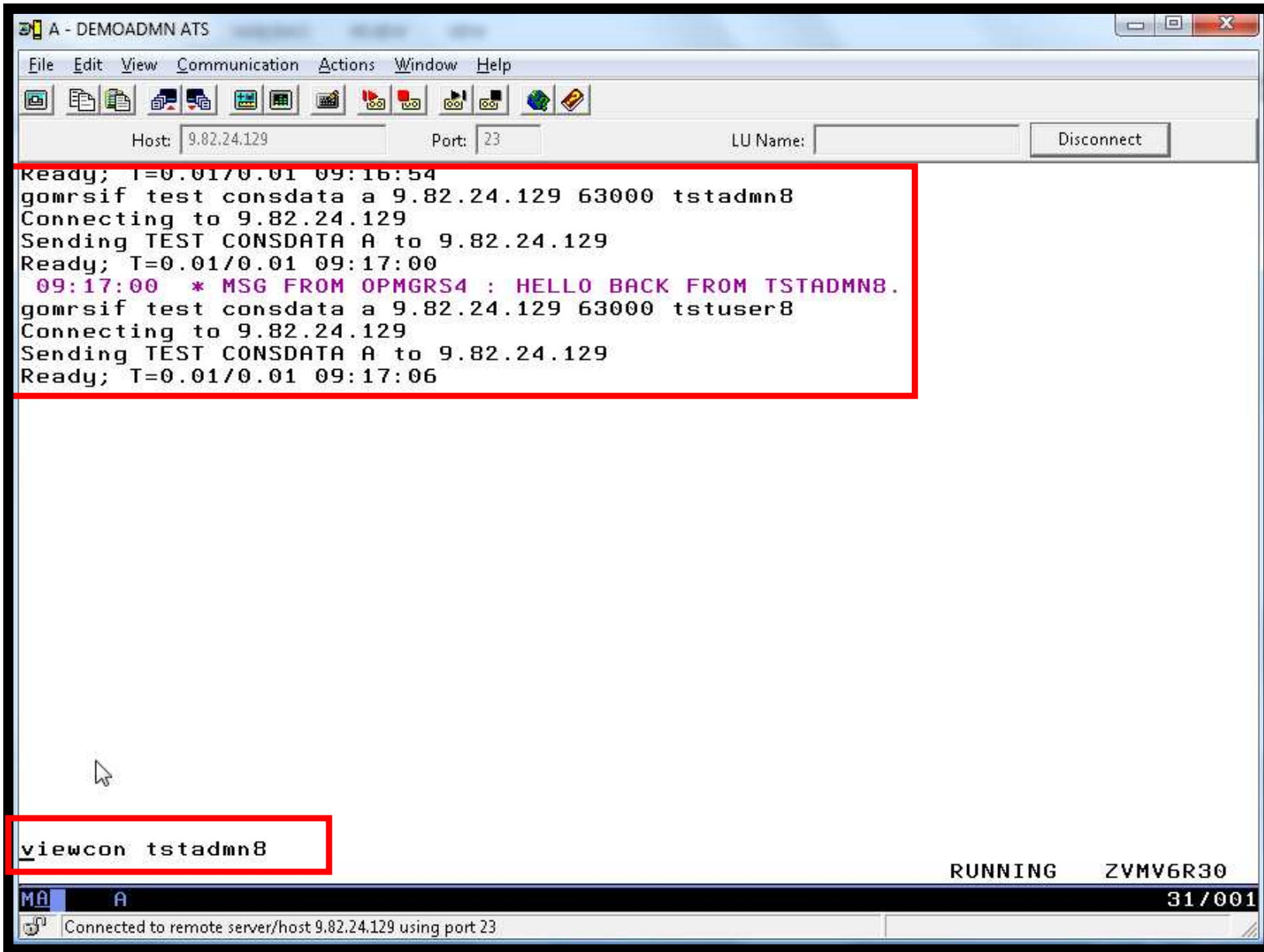
```
viewcon tstuser8
```

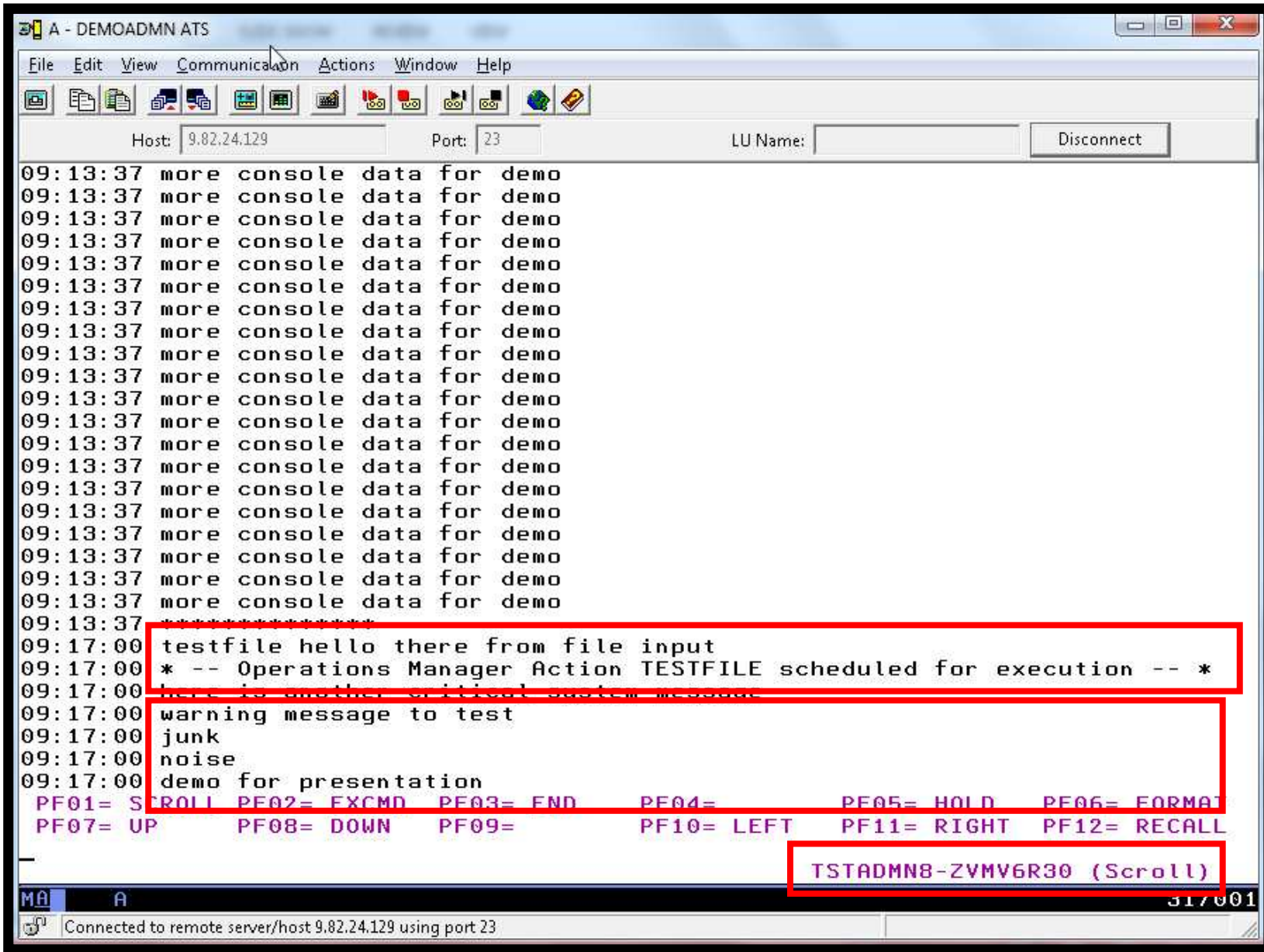


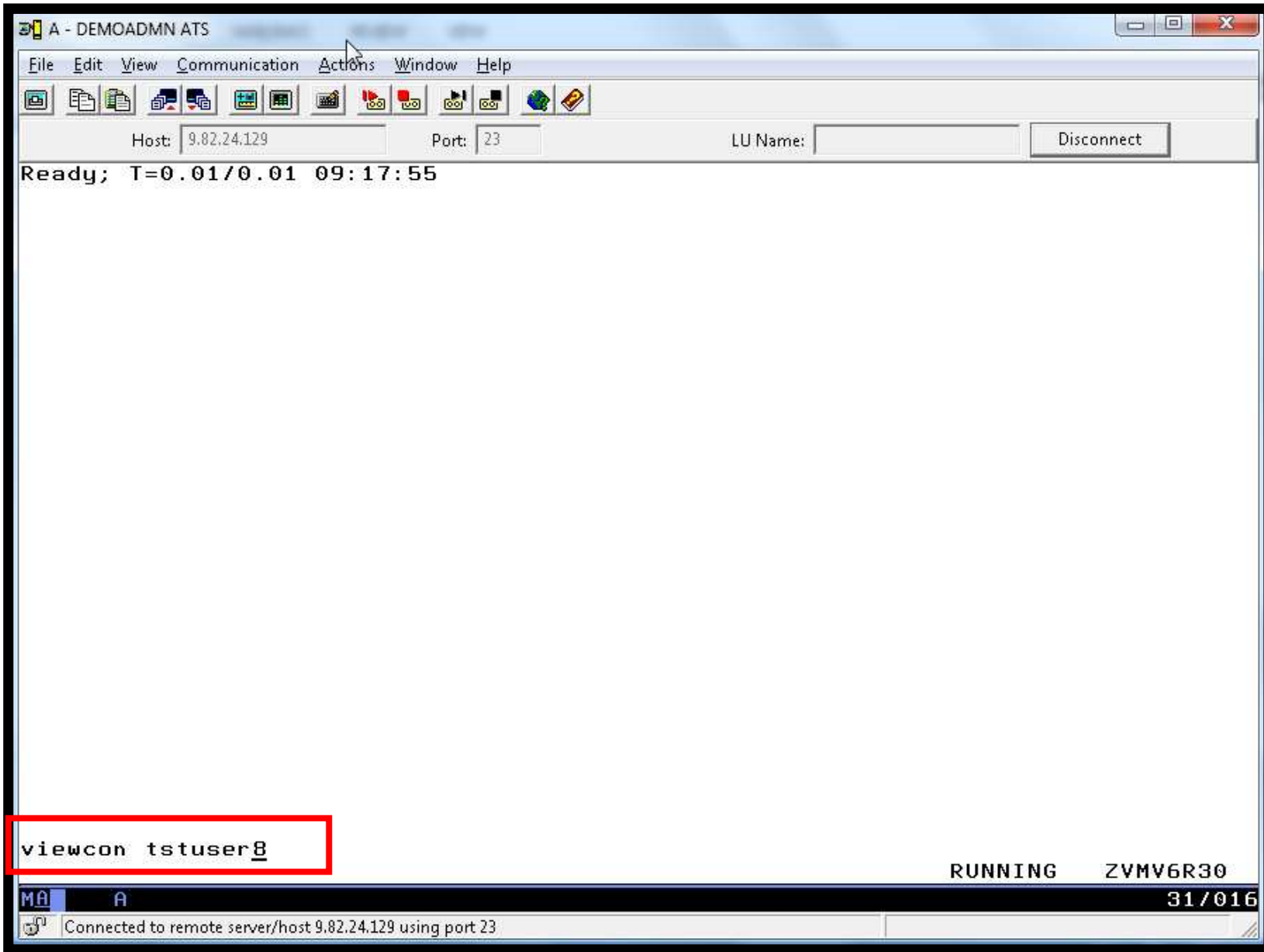
```
A - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: [ ] Disconnect
TEST CONSDATA A1 F 80 Trunc=80 Size=7 Line=0 Col=1 Alt=0
====>
T...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

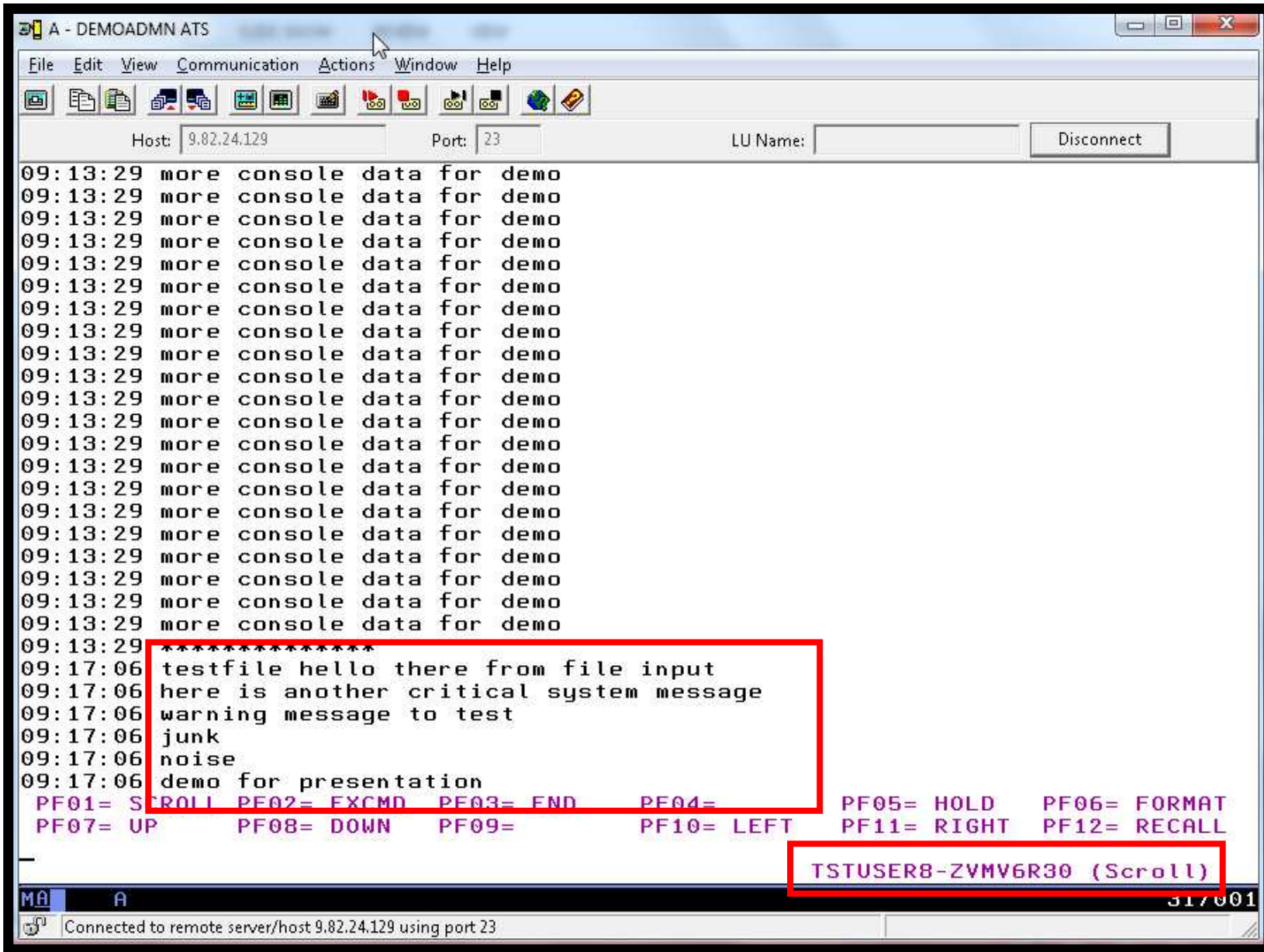
==== * * * Top of File * * *
==== testfile hello there from file input
==== here is another critical system message
==== warning message to test
==== junk
==== noise
==== demo for presentation
====
==== * * * End of File * * *

MA A 02/007
Connected to remote server/host 9.82.24.129 using port 23
```









Scenario 8: How Do You Do That?

Console rule and action in Operations Manager:

*

```
DEFRULE NAME TESTFILE +  
  MATCH '*TESTFILE HELLO*' +  
  MCOL 001:030 +  
  EXGROUP TSTUSERS +  
  ACTION TESTFILE
```

*

```
DEFACTN NAME TESTFILE +  
  COMMAND 'CP MSG DEMOADMN HELLO BACK FROM &U.' +  
  ENV SVM
```


Scenario 8: How Do You Do That?

Set up TCP/IP listener for test data and define group of consoles:

*

```
DEFIPCS NAME TESTDATA +  
  USER TCPIP +  
  APPL GOMRSIF +  
  ADDR 000.000.000.000 +  
  PORT 63000
```

*

```
DEFGROUP NAME TSTUSERS MEMBER TSTUSER*
```

Update TCP/IP configuration to allow Operations Manager to listen on the specified port

Scenario 9: Process Linux Syslog Data as a Console

- Route syslog data from a Linux guest to Operations Manager for z/VM
 - Supports syslogd, syslog-ng, rsyslog
 - syslog-ng and rsyslog include hostname or IP address in message
- Treat it as the console of a “fake” user ID
- Trigger rules and actions based on syslog data
- View the “console” containing syslog data
- Option to create one console per syslog or combine multiple syslogs into one console

Scenario 9: Detailed Steps

- From an authorized z/VM user ID, view any syslog data already received

```
gomcmd opmgrml viewcon user(lxsyslog)
```

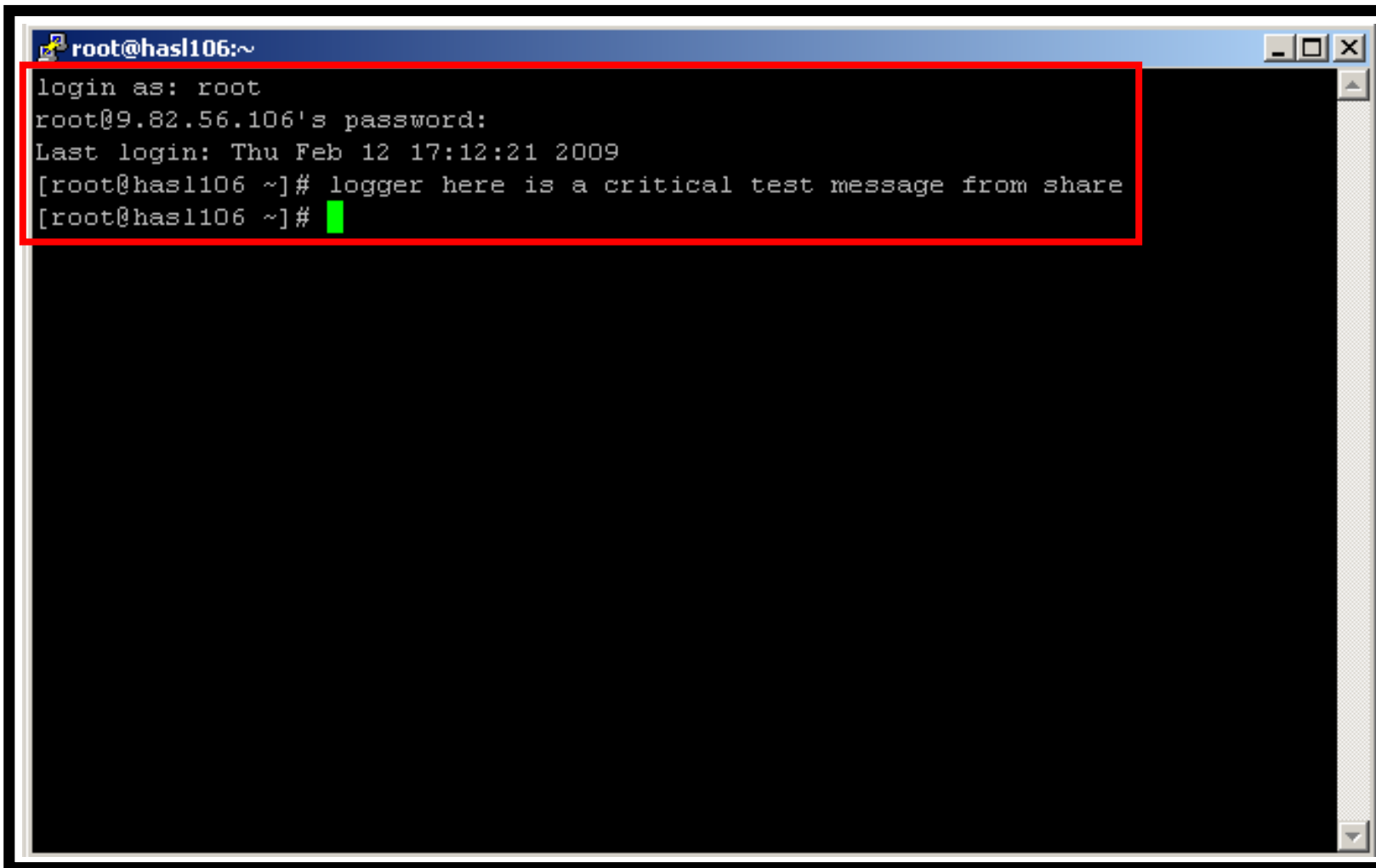
- Use PUTTY to connect to a Linux guest

- Login as root and issue the command

```
logger here is a critical test message from SHARE
```

- Return to the VIEWCON session
 - See the message in the syslog “console”
 - Using syslog, so no hostname or IP address
- Repeat from a different Linux guest that uses syslog-ng

```
Session B - TSTADMIN1 - [32 x 80]
File Edit View Communication Actions Window Help
14:59:47 <78>crond[17539]: (root) CMD (run-parts /etc/cron.hourly).
15:59:46 <78>crond[19771]: (root) CMD (run-parts /etc/cron.hourly).
16:59:46 <78>crond[21997]: (root) CMD (run-parts /etc/cron.hourly).
17:59:46 <78>crond[24224]: (root) CMD (run-parts /etc/cron.hourly).
18:59:47 <78>crond[26456]: (root) CMD (run-parts /etc/cron.hourly).
19:59:46 <78>crond[28682]: (root) CMD (run-parts /etc/cron.hourly).
20:59:46 <78>crond[30908]: (root) CMD (run-parts /etc/cron.hourly).
21:59:47 <78>crond[672]: (root) CMD (run-parts /etc/cron.hourly).
22:59:47 <78>crond[2945]: (root) CMD (run-parts /etc/cron.hourly).
23:59:47 <78>crond[5171]: (root) CMD (run-parts /etc/cron.hourly).
00:59:46 <78>crond[7397]: (root) CMD (run-parts /etc/cron.hourly).
01:59:46 <78>crond[9629]: (root) CMD (run-parts /etc/cron.hourly).
02:59:46 <78>crond[11855]: (root) CMD (run-parts /etc/cron.hourly).
03:00:46 <78>crond[11893]: (root) CMD (run-parts /etc/cron.daily).
03:00:46 <77>anacron[11897]: Updated timestamp for job `cron.daily' to 2009-03-
03:00:47 <22>sendmail[12016]: n239210V012016: from=root, size=1043, class=0, nr
03:00:48 <22>sendmail[12018]: n23921Dx012018: from=<root@hasl106.wsclab.washing
03:00:48 <22>sendmail[12016]: n239210V012016: to=root, ctladdr=root (0/0), dela
03:00:48 <22>sendmail[12019]: n23921Dx012018: to=<root@hasl106.wsclab.washingto
03:59:47 <78>crond[14346]: (root) CMD (run-parts /etc/cron.hourly).
04:59:46 <78>crond[16578]: (root) CMD (run-parts /etc/cron.hourly).
05:59:46 <78>crond[18804]: (root) CMD (run-parts /etc/cron.hourly).
06:59:46 <78>crond[21030]: (root) CMD (run-parts /etc/cron.hourly).
07:59:47 <78>crond[23256]: (root) CMD (run-parts /etc/cron.hourly).
08:59:47 <78>crond[25489]: (root) CMD (run-parts /etc/cron.hourly).
09:59:46 <78>crond[27715]: (root) CMD (run-parts /etc/cron.hourly).
10:59:47 <78>crond[29941]: (root) CMD (run-parts /etc/cron.hourly).
11:59:47 <78>crond[32167]: (root) CMD (run-parts /etc/cron.hourly).
12:59:46 <78>crond[1967]: (root) CMD (run-parts /etc/cron.hourly).
13:59:46 <78>crond[4204]: (root) CMD (run-parts /etc/cron.hourly).
-
LXSYSLOG (Scroll)
317001
Connected to remote server/host 9.39.68.141 using port 23
```

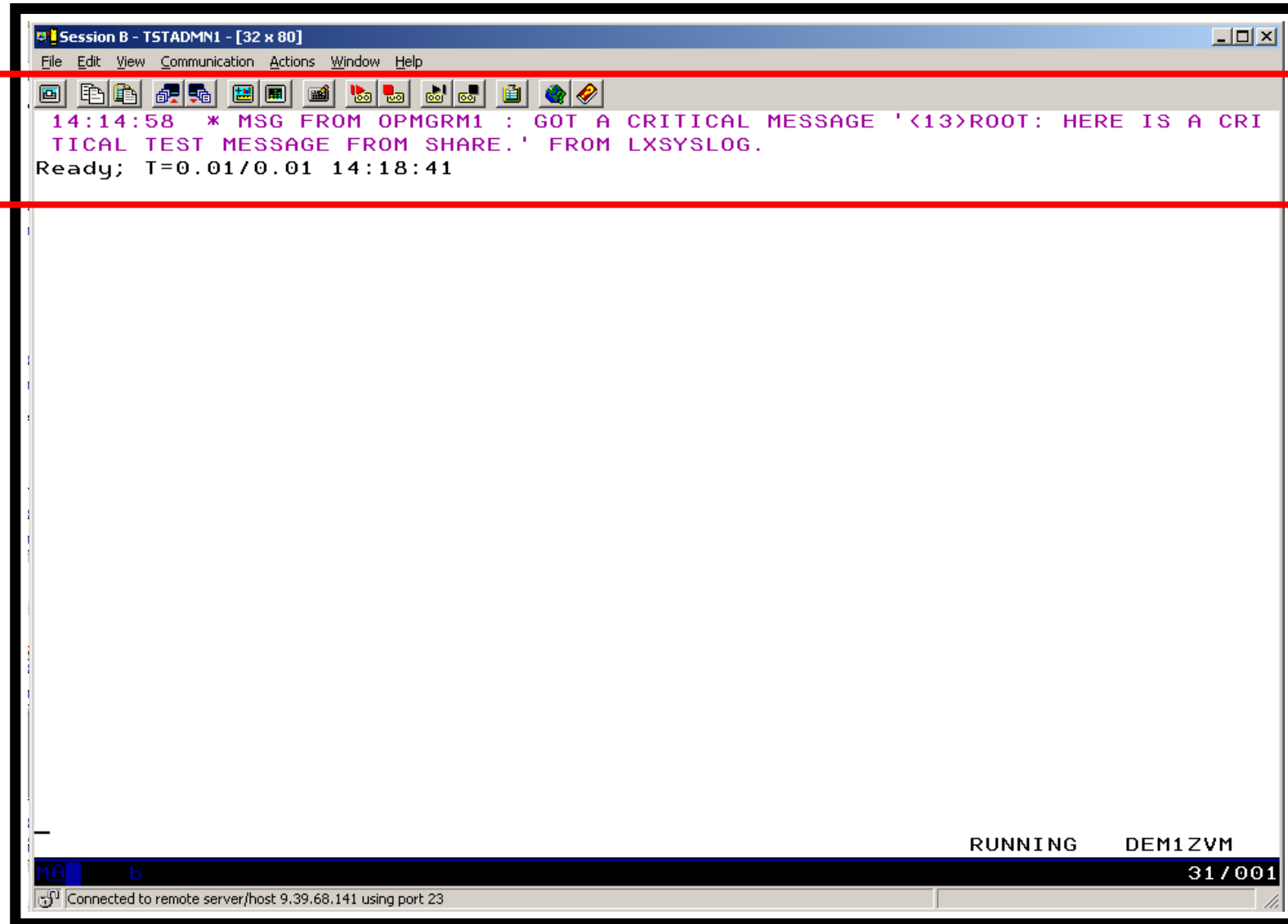


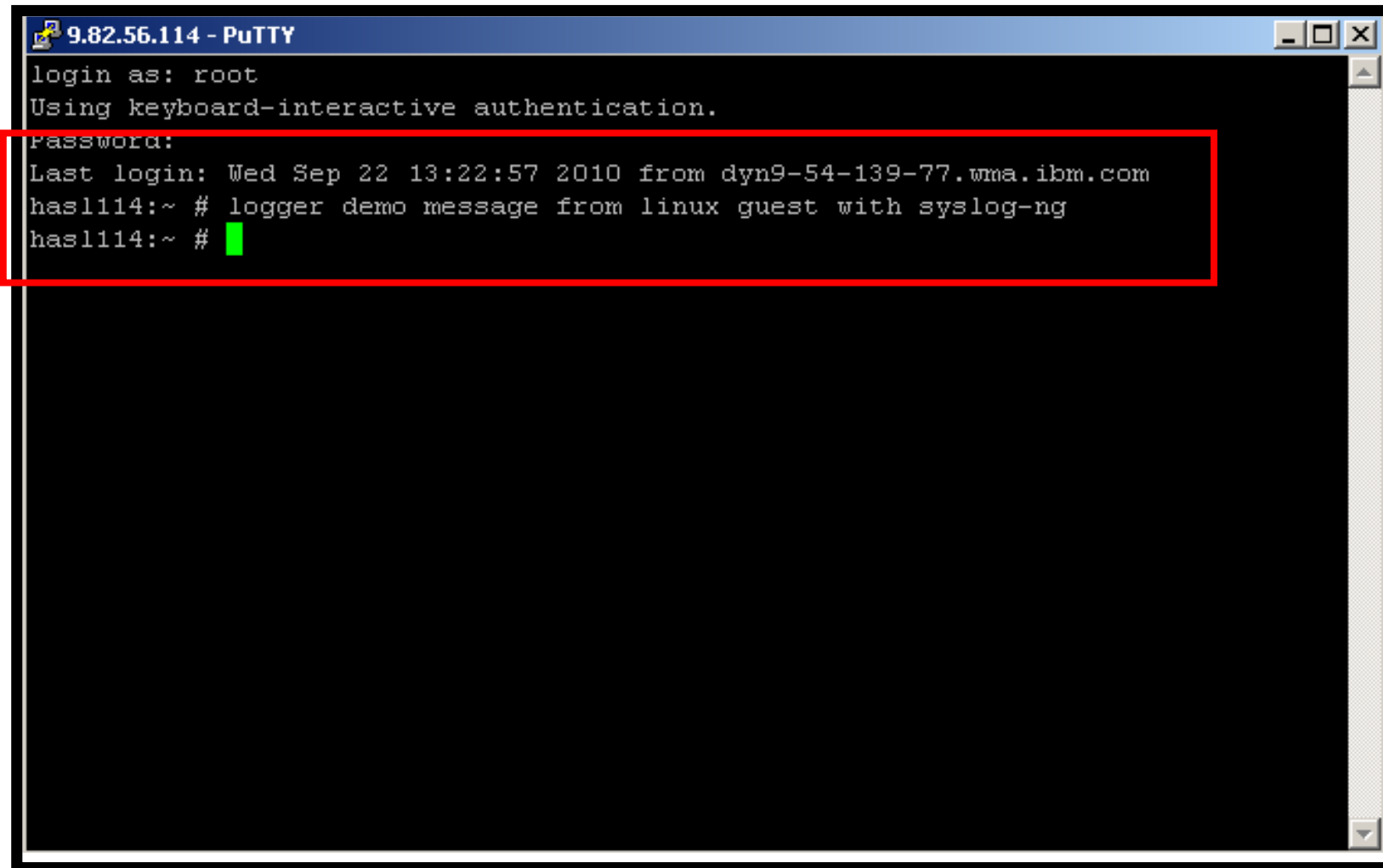
```
root@has1106:~  
login as: root  
root@9.82.56.106's password:  
Last login: Thu Feb 12 17:12:21 2009  
[root@has1106 ~]# logger here is a critical test message from share  
[root@has1106 ~]# █
```

```

Session B - TSTADMIN1 - [32 x 80]
File Edit View Communication Actions Window Help
18:59:47 <78>crond[26456]: (root) CMD (run-parts /etc/cron.hourly).
19:59:46 <78>crond[28682]: (root) CMD (run-parts /etc/cron.hourly).
20:59:46 <78>crond[30908]: (root) CMD (run-parts /etc/cron.hourly).
21:59:47 <78>crond[672]: (root) CMD (run-parts /etc/cron.hourly).
22:59:47 <78>crond[2945]: (root) CMD (run-parts /etc/cron.hourly).
23:59:47 <78>crond[5171]: (root) CMD (run-parts /etc/cron.hourly).
00:59:46 <78>crond[7397]: (root) CMD (run-parts /etc/cron.hourly).
01:59:46 <78>crond[9629]: (root) CMD (run-parts /etc/cron.hourly).
02:59:46 <78>crond[11855]: (root) CMD (run-parts /etc/cron.hourly).
03:00:46 <78>crond[11893]: (root) CMD (run-parts /etc/cron.daily).
03:00:46 <77>anacron[11897]: Updated timestamp for job `cron.daily' to 2009-03-
03:00:47 <22>sendmail[12016]: n239210V012016: from=root, size=1043, class=0, nr
03:00:48 <22>sendmail[12018]: n23921Dx012018: from=<root@hasl106.wsclab.washing
03:00:48 <22>sendmail[12016]: n239210V012016: to=root, ctladdr=root (0/0), dela
03:00:48 <22>sendmail[12019]: n23921Dx012018: to=<root@hasl106.wsclab.washingto
03:59:47 <78>crond[14346]: (root) CMD (run-parts /etc/cron.hourly).
04:59:46 <78>crond[16578]: (root) CMD (run-parts /etc/cron.hourly).
05:59:46 <78>crond[18804]: (root) CMD (run-parts /etc/cron.hourly).
06:59:46 <78>crond[21030]: (root) CMD (run-parts /etc/cron.hourly).
07:59:47 <78>crond[23256]: (root) CMD (run-parts /etc/cron.hourly).
08:59:47 <78>crond[25489]: (root) CMD (run-parts /etc/cron.hourly).
09:59:46 <78>crond[27715]: (root) CMD (run-parts /etc/cron.hourly).
10:59:47 <78>crond[29941]: (root) CMD (run-parts /etc/cron.hourly).
11:59:47 <78>crond[32167]: (root) CMD (run-parts /etc/cron.hourly).
12:59:46 <78>crond[1967]: (root) CMD (run-parts /etc/cron.hourly).
13:59:46 <78>crond[4204]: (root) CMD (run-parts /etc/cron.hourly).
14:14:13 <86>sshd[4731]: Accepted password for root from 9.49.128.169 port 2403
14:14:13 <86>sshd[4731]: pam_unix(sshd:session): session opened for user root b
14:14:58 <13>root: here is a critical test message from share.
14:14:58 * -- Operations Manager Action LXLOG scheduled for execution -- *
-
LXSYSLOG (Scroll)
317001
MA b
Connected to remote server/host 9.39.68.141 using port 23

```





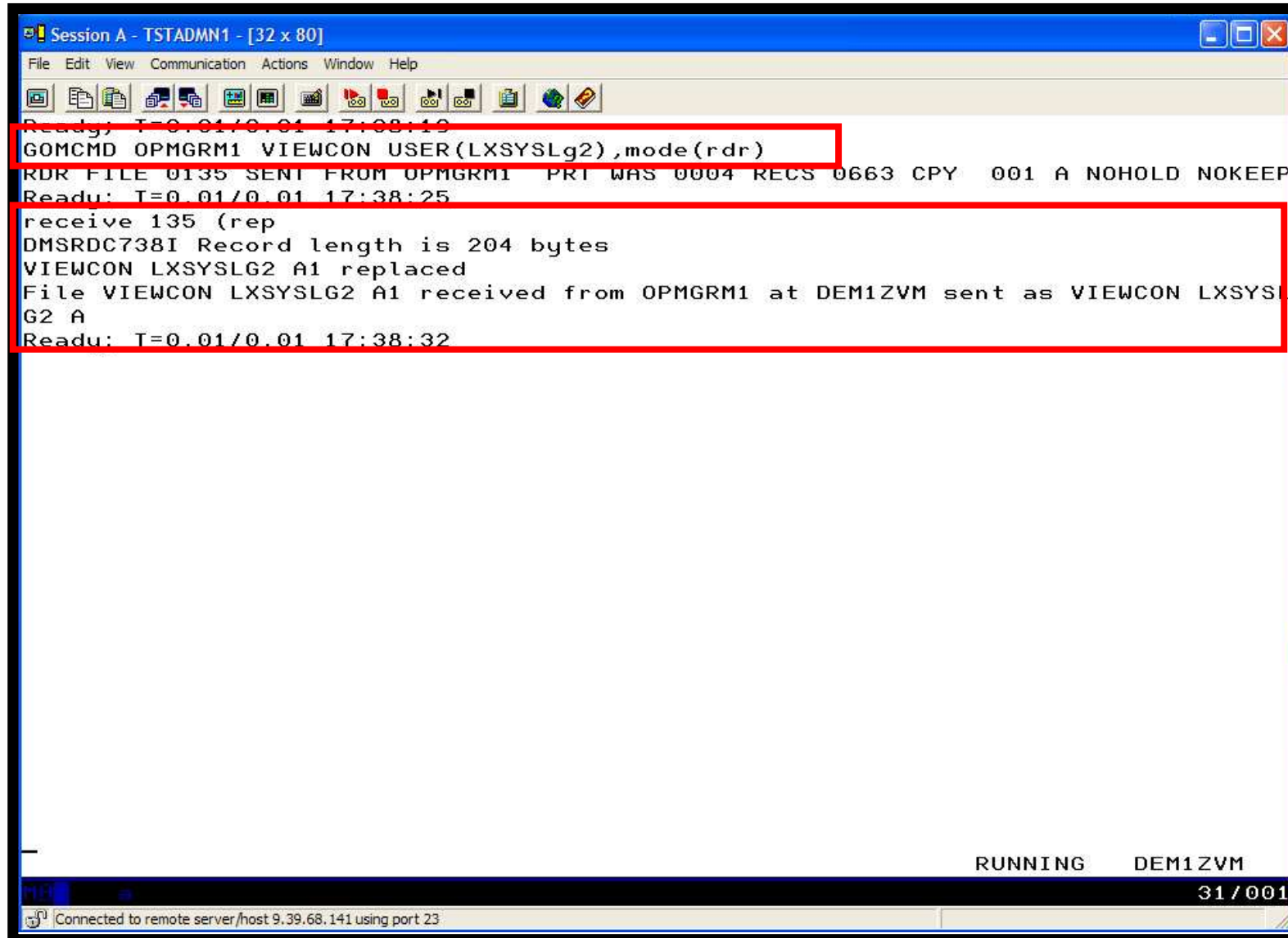
```
9.82.56.114 - PuTTY
login as: root
Using keyboard-interactive authentication.
Password:
Last login: Wed Sep 22 13:22:57 2010 from dyn9-54-139-77.wma.ibm.com
has1114:~ # logger demo message from linux guest with syslog-ng
has1114:~ # █
```



```

Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
<46>Oct 27 13:16:08 omeglnx1 -- MARK --.
<46>Oct 27 13:16:08 omeglnx1 syslog-ng[1301]: Log statistics; dropped='pipe(/de
<46>Oct 27 13:36:08 omeglnx1 -- MARK --.
<45>Oct 27 14:43:49 hasl114 syslog-ng[1433]: STATS: dropped 0.
<46>Oct 27 13:56:08 omeglnx1 -- MARK --.
<46>Oct 27 14:16:08 omeglnx1 -- MARK --.
<46>Oct 27 14:16:08 omeglnx1 syslog-ng[1301]: Log statistics; dropped='pipe(/de
<46>Oct 27 14:36:08 omeglnx1 -- MARK --.
<35>Oct 27 15:42:44 hasl114 sshd[7320]: error: PAM: Authentication failure for
<45>Oct 27 15:43:49 hasl114 syslog-ng[1433]: STATS: dropped 1.
<34>Oct 27 15:44:38 hasl114 sshd[7320]: fatal: Timeout before authentication fo
* -- Operations Manager Action MSGOPER8 scheduled for execution -- *
<83>Oct 27 15:44:38 hasl114 sshd[7323]: pam_unix2(sshd:auth): conversation fail
<35>Oct 27 15:44:38 hasl114 sshd[7323]: error: ssh_msg_send: write.
<46>Oct 27 14:56:08 omeglnx1 -- MARK --.
<46>Oct 27 15:16:08 omeglnx1 -- MARK --.
<46>Oct 27 15:16:08 omeglnx1 syslog-ng[1301]: Log statistics; dropped='pipe(/de
<46>Oct 27 15:36:08 omeglnx1 -- MARK --.
<45>Oct 27 16:43:49 hasl114 syslog-ng[1433]: STATS: dropped 1.
<46>Oct 27 15:56:08 omeglnx1 -- MARK --.
<46>Oct 27 16:16:08 omeglnx1 -- MARK --.
<46>Oct 27 16:16:08 omeglnx1 syslog-ng[1301]: Log statistics; dropped='pipe(/de
<46>Oct 27 16:36:08 omeglnx1 -- MARK --.
<45>Oct 27 17:43:49 hasl114 syslog-ng[1433]: STATS: dropped 0.
<46>Oct 27 16:56:08 omeglnx1 -- MARK --.
<46>Oct 27 17:16:08 omeglnx1 -- MARK --.
<46>Oct 27 17:16:08 omeglnx1 syslog-ng[1301]: Log statistics; dropped='pipe(/de
<46>Oct 27 17:36:08 omeglnx1 -- MARK --.
<38>Oct 27 18:32:17 hasl114 sshd[8168]: Accepted keyboard-interactive/pam for r
<13>Oct 27 18:32:35 hasl114 root: demo message from linux guest with syslog-ng.
-
MA a
317001
Connected to remote server/host 9.39.68.141 using port 23
  
```

LXSYSLG2 (Scroll)



```
Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
Ready: T=0.01/0.01 17:38:19
GOMCMD OPMGRM1 VIEWCON USER(LXSYSLG2),mode(rdr)
RDR FILE 0135 SENT FROM OPMGRM1 PRT WAS 0004 RECS 0663 CPY 001 A NOHOLD NOKEEP
Ready: T=0.01/0.01 17:38:25
receive 135 (rep
DMSRDC738I Record length is 204 bytes
VIEWCON LXSYSLG2 A1 replaced
File VIEWCON LXSYSLG2 A1 received from OPMGRM1 at DEM1ZVM sent as VIEWCON LXSYSLG2 A
Ready: T=0.01/0.01 17:38:32

RUNNING DEM1ZVM
31 / 001
Connected to remote server/host 9.39.68.141 using port 23
```

```

Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
VIEWCON LXSYSLG2 A1 F 204 Trunc=204 Size=663 Line=0 Col=1 Alt=0
====>
T...+...1...+...2...+...3...+...4...+...5...+...6...+...7..

==== * * * Top of File * * *
==== 10/22/2010 11:39:59 <43>Oct 22 12:34:53 hasl114 syslog-ng[1433]: Connect
==== 10/22/2010 11:47:31 <45>Oct 22 12:43:25 hasl114 syslog-ng[1433]: STATS:
==== 10/22/2010 11:57:08 <46>Oct 22 11:56:07 omeglnx1 -- MARK --.
==== 10/22/2010 11:57:08 <43>Oct 22 11:56:07 omeglnx1 syslog-ng[1301]: I/O er
==== 10/22/2010 11:57:08 <43>Oct 22 11:56:07 omeglnx1 syslog-ng[1301]: Connec
==== 10/22/2010 12:05:21 <12>Oct 22 13:01:15 hasl114 zmd: ShutdownManager (WA
==== 10/22/2010 12:05:21 <12>Oct 22 13:01:15 hasl114 zmd: ShutdownManager (WA
==== 10/22/2010 12:16:08 <46>Oct 22 12:16:07 omeglnx1 -- MARK --.
==== 10/22/2010 12:16:08 <46>Oct 22 12:16:07 omeglnx1 syslog-ng[1301]: Log st
==== 10/22/2010 12:36:08 <46>Oct 22 12:36:07 omeglnx1 -- MARK --.
==== 10/22/2010 12:47:31 <45>Oct 22 13:43:25 hasl114 syslog-ng[1433]: STATS:
==== 10/22/2010 12:56:08 <46>Oct 22 12:56:07 omeglnx1 -- MARK --.
==== 10/22/2010 13:16:08 <46>Oct 22 13:16:07 omeglnx1 -- MARK --.
==== 10/22/2010 13:16:08 <46>Oct 22 13:16:07 omeglnx1 syslog-ng[1301]: Log st
==== 10/22/2010 13:36:08 <46>Oct 22 13:36:07 omeglnx1 -- MARK --.
==== 10/22/2010 13:47:31 <45>Oct 22 14:43:25 hasl114 syslog-ng[1433]: STATS:
==== 10/22/2010 13:56:08 <46>Oct 22 13:56:07 omeglnx1 -- MARK --.
==== 10/22/2010 14:16:08 <46>Oct 22 14:16:07 omeglnx1 -- MARK --.
==== 10/22/2010 14:16:08 <46>Oct 22 14:16:07 omeglnx1 syslog-ng[1301]: Log st
==== 10/22/2010 14:36:08 <46>Oct 22 14:36:07 omeglnx1 -- MARK --.
==== 10/22/2010 14:47:31 <45>Oct 22 15:43:25 hasl114 syslog-ng[1433]: STATS:
==== 10/22/2010 14:56:08 <46>Oct 22 14:56:07 omeglnx1 -- MARK --.
==== 10/22/2010 15:16:08 <46>Oct 22 15:16:07 omeglnx1 -- MARK --.
==== 10/22/2010 15:16:08 <46>Oct 22 15:16:07 omeglnx1 syslog-ng[1301]: Log st
==== 10/22/2010 15:36:08 <46>Oct 22 15:36:07 omeglnx1 -- MARK --.
==== 10/22/2010 15:47:31 <45>Oct 22 16:43:26 hasl114 syslog-ng[1433]: STATS:
MA a 02/007
Connected to remote server/host 9.39.68.141 using port 23

```

Scenario 9: How Do You Do That?

Console rule and action in Operations Manager:

*

```
DEFRULE NAME(LXLOG),+  
  MATCH(*critical test message*),+  
  ACTION(LXLOG),+  
  USER(LXSYSLOG)
```

*

```
DEFACTN NAME(LXLOG),+  
  COMMAND(CP MSG TSTADMN1 Got a critical message '&T' from &U.),+  
  OUTPUT(LOG),+  
  ENV(LVM)
```

Scenario 9: How Do You Do That?

- Set up TCP/IP listener for syslog data

*

```
DEFTCPA NAME(LNXSYSLG),+  
  TCPUSER(TCPIP),+  
  TCPAPPL(GOMRSYL),+  
  TCPADDR(000.000.000.000),+  
  TCPPORT(00514),+  
  PARM(LXSYSLOG03330417UTF8)
```

*

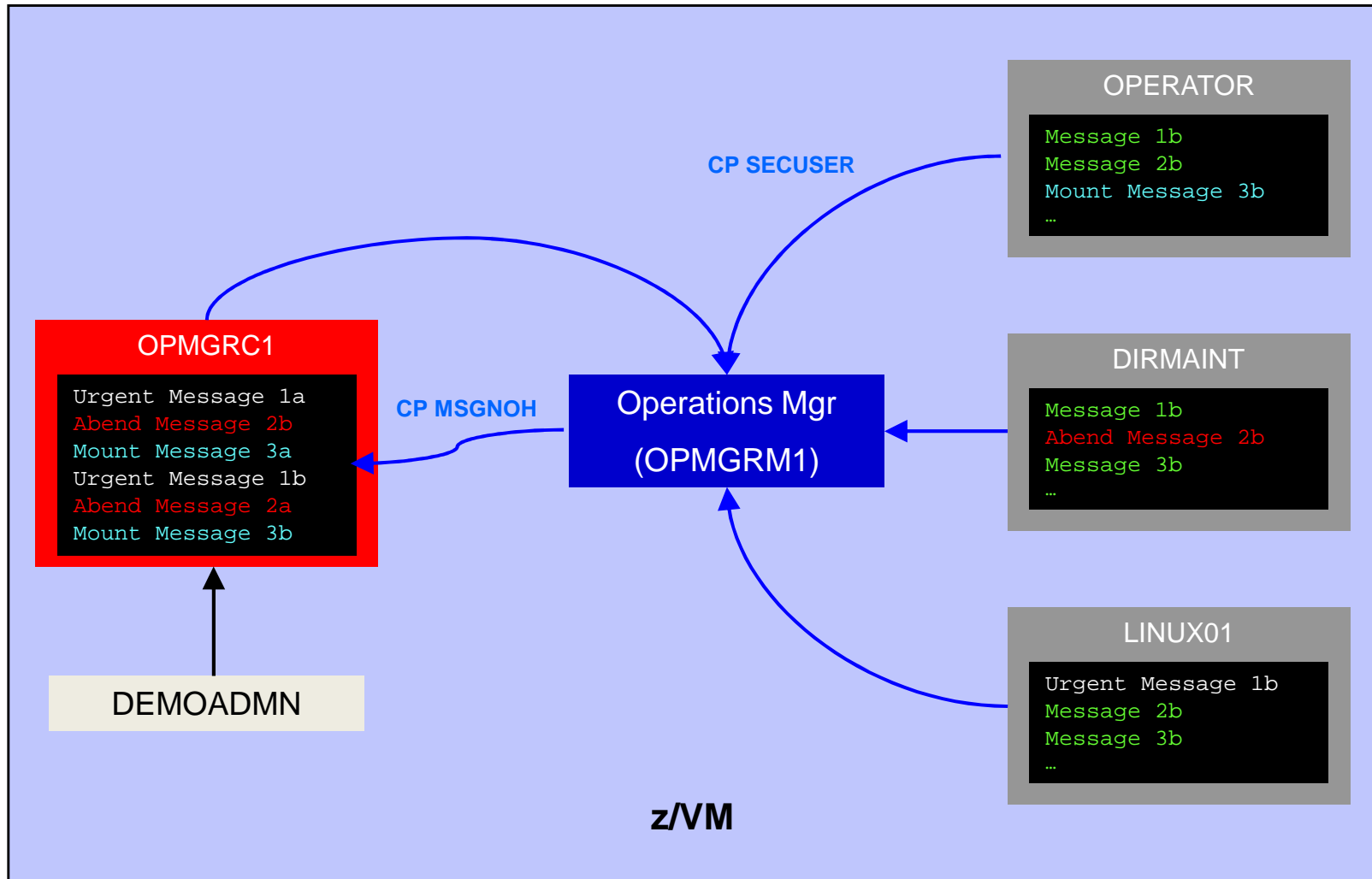
```
DEFTCPA NAME(LNXSYSL2),+  
  TCPUSER(TCPIP),+  
  TCPAPPL(GOMRSYL),+  
  TCPADDR(000.000.000.000),+  
  TCPPORT(00515),+  
  PARM(LXSYSLG203330417UTF8)
```

- Update TCP/IP configuration to allow Operations Manager to listen for UDP traffic on the specified port(s)
 - Ports 514 and 515 used here
- Update the Linux guest to send its syslog data to the IP address and port of your z/VM system

Scenario 10: Create a Central Operations Console on One z/VM System

- Use Operations Manager to watch for error, warning, fatal messages on service machine consoles
 - DIRMAINT, TCP/IP, RACF, etc.
 - Linux guests
 - Linux syslog
- Route these messages to a central operations console
- Operations staff watches operations console for signs of trouble
 - View individual service machine consoles for more details when needed

Creating a Central Console on One z/VM System



Scenario 10: Detailed Steps

- From an authorized z/VM user ID, put “abend”, “fatal”, and error messages on DIRMAINT console

```
msgnoh dirmaint this is a test abend message
```

```
msgnoh dirmaint this is a fake fatal message
```

```
msgnoh dirmaint DMSxxxxxxxE here is a made-up CMS error msg
```

- View the “Operations Console” to see the messages

```
gomcmd opmgrml viewcon user(oper8)
```

- Note the fatal message is red and abend message is highlighted and will be held when other messages come in

Scenario 10: Detailed Steps

- From another user ID, run an EXEC to send multiple messages to the Operations Console

`lotsmsgs`

- View the “Operations Console” to see the messages

`gomcmd opmgrm1 viewcon user(oper8)`

- Watch the scrolling, held messages, etc.

```
Session A - TSTADMIN1 - [32 x 80]
File Edit View Communication Actions Window Help
msgnoh dirmaint this is a test abend message
Ready; T=0.01/0.01 10:36:23
msgnoh dirmaint this is a fake fatal message
Ready; T=0.01/0.01 10:36:29
msgnoh dirmaint DMSxxxxxxxE here is a made-up CMS error msg
Ready; T=0.01/0.01 10:36:39

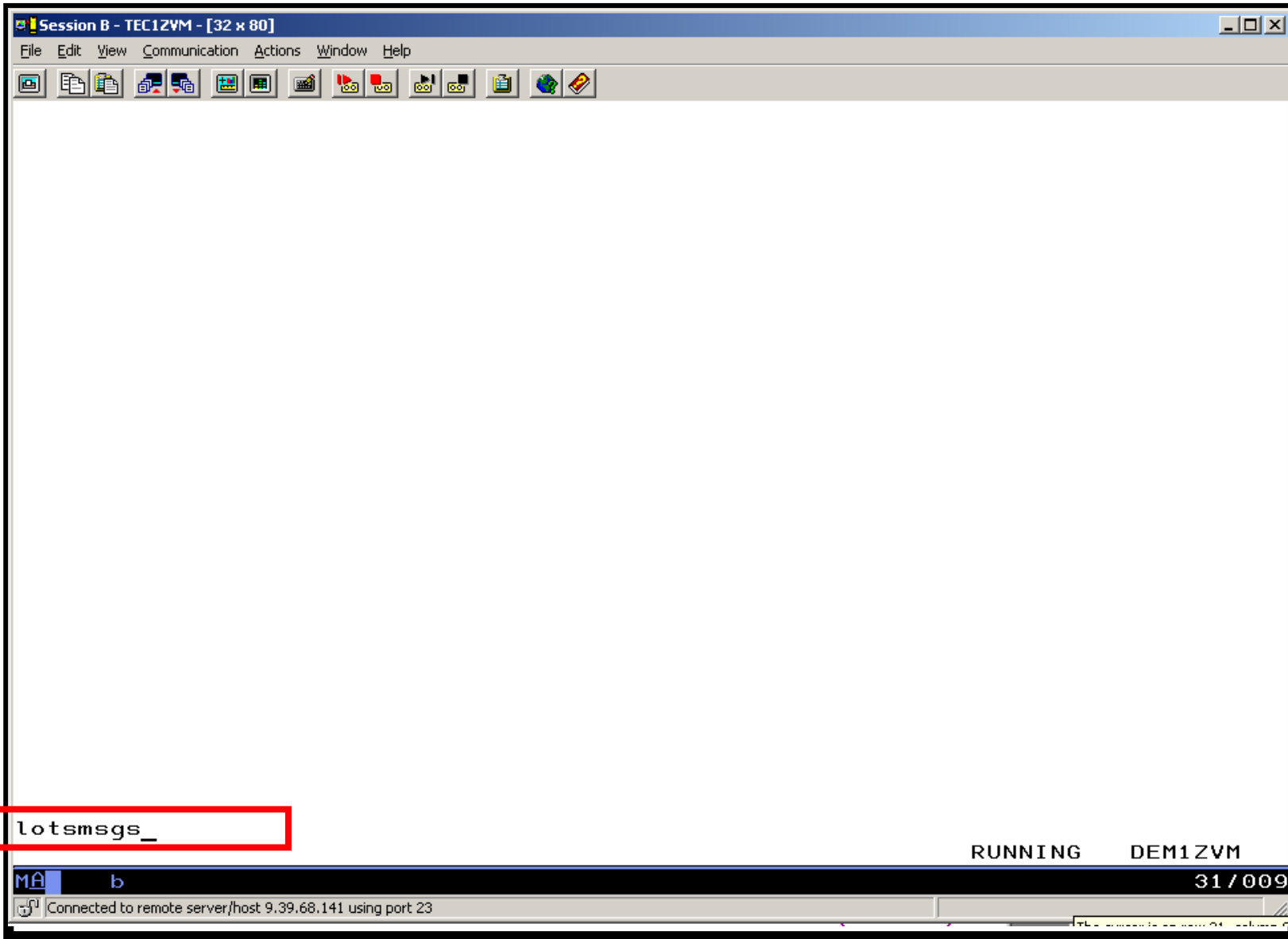
gomcmd opmgrm1 viewcon user(oper8)

RUNNING DEM1ZVM
31/001
Connected to remote server/host 9.39.68.141 using port 23
```

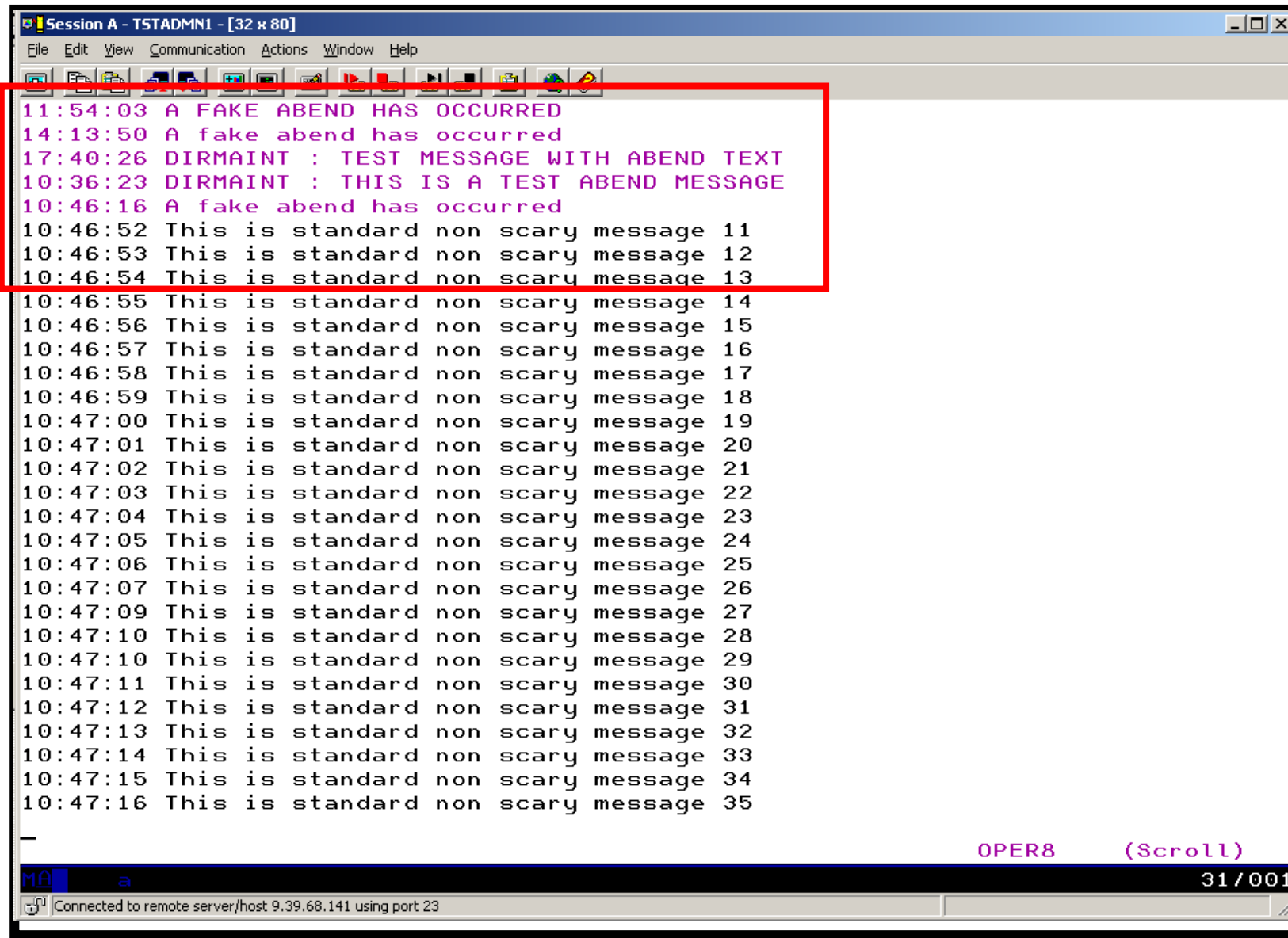
```

Session A - TSTADMIN1 - [32 x 80]
File Edit View Communication Actions Window Help
11:54:03 A FAKE ABEND HAS OCCURRED
14:13:50 A fake abend has occurred
14:14:32 This is standard non scary message 17
14:14:33 This is standard non scary message 18
14:14:34 This is standard non scary message 19
14:14:35 This is standard non scary message 20
14:14:36 This is standard non scary message 21
14:14:37 This is standard non scary message 22
14:14:38 This is standard non scary message 23
14:14:39 This is standard non scary message 24
14:14:39 This is standard non scary message 25
14:14:41 This is standard non scary message 26
14:14:42 This is standard non scary message 27
14:14:42 This is standard non scary message 28
14:14:43 This is standard non scary message 29
14:14:44 This is standard non scary message 30
14:14:46 This is standard non scary message 31
14:14:47 This is standard non scary message 32
14:14:48 This is standard non scary message 33
14:14:49 This is standard non scary message 34
14:14:50 This is standard non scary message 35
17:39:47 DIRMAINT : TEST MESSAGE WITH FATAL TEXT
17:40:26 DIRMAINT : TEST MESSAGE WITH ABEND TEXT
00:00:00 HCPMID6001I  TIME IS 00:00:00 CDT FRIDAY 10/02/09
00:00:00
23:59:59 HCPMID6001I  TIME IS 00:00:00 CDT SATURDAY 10/03/09
23:59:59
10:36:23 DIRMAINT : THIS IS A TEST ABEND MESSAGE
10:36:28 DIRMAINT : THIS IS A FAKE FATAL MESSAGE
10:36:39 DIRMAINT : DMSXXXXXXXXE HERE IS A MADE-UP CMS ERROR MSG
-
OPER8 (Scroll)
MA a 31/001
Connected to remote server/host 9.39.68.141 using port 23

```



```
Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
11:54:03 A FAKE ABEND HAS OCCURRED
14:13:50 A fake abend has occurred
17:40:26 DIRMAINT : TEST MESSAGE WITH ABEND TEXT
10:36:23 DIRMAINT : THIS IS A TEST ABEND MESSAGE
10:46:16 A fake abend has occurred
10:46:23 This is standard non scary message 8
10:46:25 This is standard non scary message 9
10:46:26 This is standard non scary message 10
10:46:26 This is standard non scary message 11
10:46:27 This is standard non scary message 12
10:46:28 This is standard non scary message 13
10:46:29 This is standard non scary message 14
10:46:30 This is standard non scary message 15
10:46:31 This is standard non scary message 16
10:46:32 This is standard non scary message 17
10:46:33 This is standard non scary message 18
10:46:34 This is standard non scary message 19
10:46:35 This is standard non scary message 20
10:46:36 This is standard non scary message 21
10:46:37 This is standard non scary message 22
10:46:38 This is standard non scary message 23
10:46:39 This is standard non scary message 24
10:46:40 This is standard non scary message 25
10:46:41 A fake fatal message
10:46:42 This is standard non scary message 1
10:46:43 This is standard non scary message 2
10:46:44 This is standard non scary message 3
10:46:45 This is standard non scary message 4
10:46:47 This is standard non scary message 5
10:46:48 This is standard non scary message 6
-
OPER8 (Scroll)
31 / 001
Connected to remote server/host 9.39.68.141 using port 23
```



```
Session A - TSTADMIN1 - [32 x 80]
File Edit View Communication Actions Window Help
11:54:03 A FAKE ABEND HAS OCCURRED
14:13:50 A fake abend has occurred
17:40:26 DIRMAINT : TEST MESSAGE WITH ABEND TEXT
10:36:23 DIRMAINT : THIS IS A TEST ABEND MESSAGE
10:46:16 A fake abend has occurred
10:46:52 This is standard non scary message 11
10:46:53 This is standard non scary message 12
10:46:54 This is standard non scary message 13
10:46:55 This is standard non scary message 14
10:46:56 This is standard non scary message 15
10:46:57 This is standard non scary message 16
10:46:58 This is standard non scary message 17
10:46:59 This is standard non scary message 18
10:47:00 This is standard non scary message 19
10:47:01 This is standard non scary message 20
10:47:02 This is standard non scary message 21
10:47:03 This is standard non scary message 22
10:47:04 This is standard non scary message 23
10:47:05 This is standard non scary message 24
10:47:06 This is standard non scary message 25
10:47:07 This is standard non scary message 26
10:47:09 This is standard non scary message 27
10:47:10 This is standard non scary message 28
10:47:10 This is standard non scary message 29
10:47:11 This is standard non scary message 30
10:47:12 This is standard non scary message 31
10:47:13 This is standard non scary message 32
10:47:14 This is standard non scary message 33
10:47:15 This is standard non scary message 34
10:47:16 This is standard non scary message 35
-
OPER8 (Scroll)
MA a 31/001
Connected to remote server/host 9.39.68.141 using port 23
```

Scenario 10: How Do You Do That?

Console rules in Operations Manager:

```

*
DEFRULE NAME(ABEND),+
  MATCH(*abend*),+
  EXUSER(OPER8),+
  ACTION(MSGOPER8)
*
DEFRULE NAME(FATAL),+
  MATCH(*fatal*),+
  EXUSER(OPER8),+
  ACTION(MSGOPER8)
*
DEFRULE NAME(EMSGS),+
  MATCH(DMS*E),+
  MCOL(001:011),+
  EXUSER(OPER8),+
  ACTION(MSGOPER8)

```

Action in Operations Manager:

```

*
DEFACTN NAME(MSGOPER8),+
  COMMAND(CP MSGNOH OPER8 &U : &T),+
  OUTPUT(LOG),+
  ENV(LVM)

```

Scenario 10: How Do You Do That?

Console rules in Operations Manager:

*

```
DEFRULE NAME(ABENDHLT) , +  
  MATCH(*abend*) , +  
  USER(OPER8) , +  
  ACTION(HLTHOLD)
```

*

```
DEFRULE NAME(FATALRED) , +  
  MATCH(*fatal*) , +  
  USER(OPER8) , +  
  ACTION(RED)
```

Actions in Operations Manager:

*

```
DEFACTN NAME(HLTHOLD) , +  
  INPUT(AHI , HLD)
```

*

```
DEFACTN NAME(HILITE) , +  
  INPUT(AHI)
```

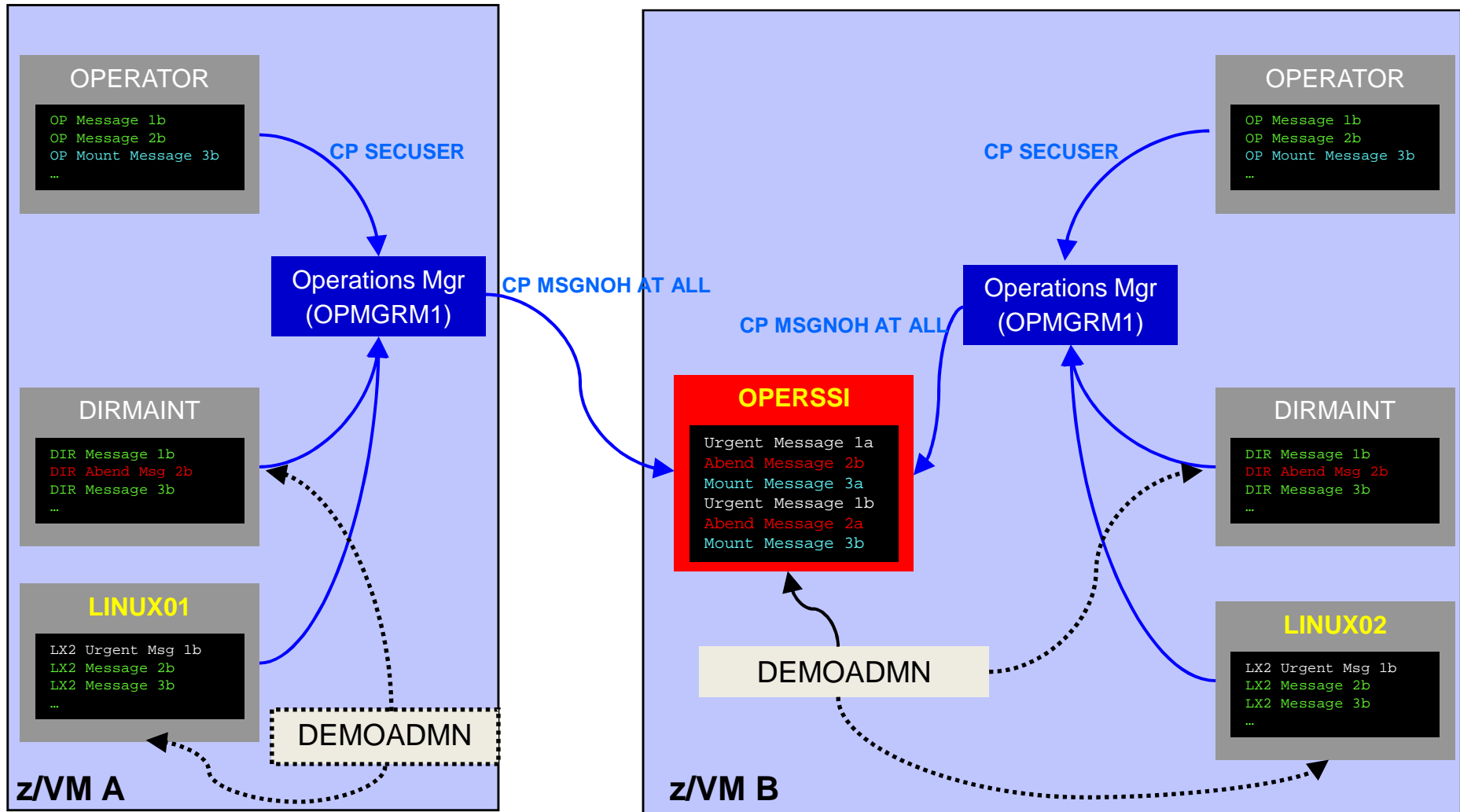
*

```
DEFACTN NAME(RED) , +  
  INPUT(CRE)
```


Scenario 11a: Create a Central Operations Console across multiple z/VM systems in an SSI cluster – Includes relocation of Linux and CMS guests

- Use Operations Manager to watch for error, warning, fatal messages on service machine consoles on one or more systems in an SSI cluster
 - OPERATOR, DIRMAINT, TCPIP, RACF, etc.
 - Linux guests
 - Linux syslog
- Route these messages to a central operations console on one of the z/VM systems
- Operations staff watches one operations console for signs of trouble across multiple z/VM systems
 - View individual service machine consoles for more details when needed

Creating a Central Console Across Multiple Members of SSI Cluster



Single Configuration Users: LINUX01, LINUX02, OPERSSI, DEMOADMN
Multiconfiguration (IDENTITY) Users: OPERATOR, DIRMAINT, OPMGRM1

Scenario 11a: Detailed Steps

- On System B (TEST7SSI), view the “Operations Console” (user ID OPERSSI)

```
gomcmd opmgrml viewcon user(operssi)
```

- On System A (TEST7SSI), find a Linux guest running disconnected locally and relocate it

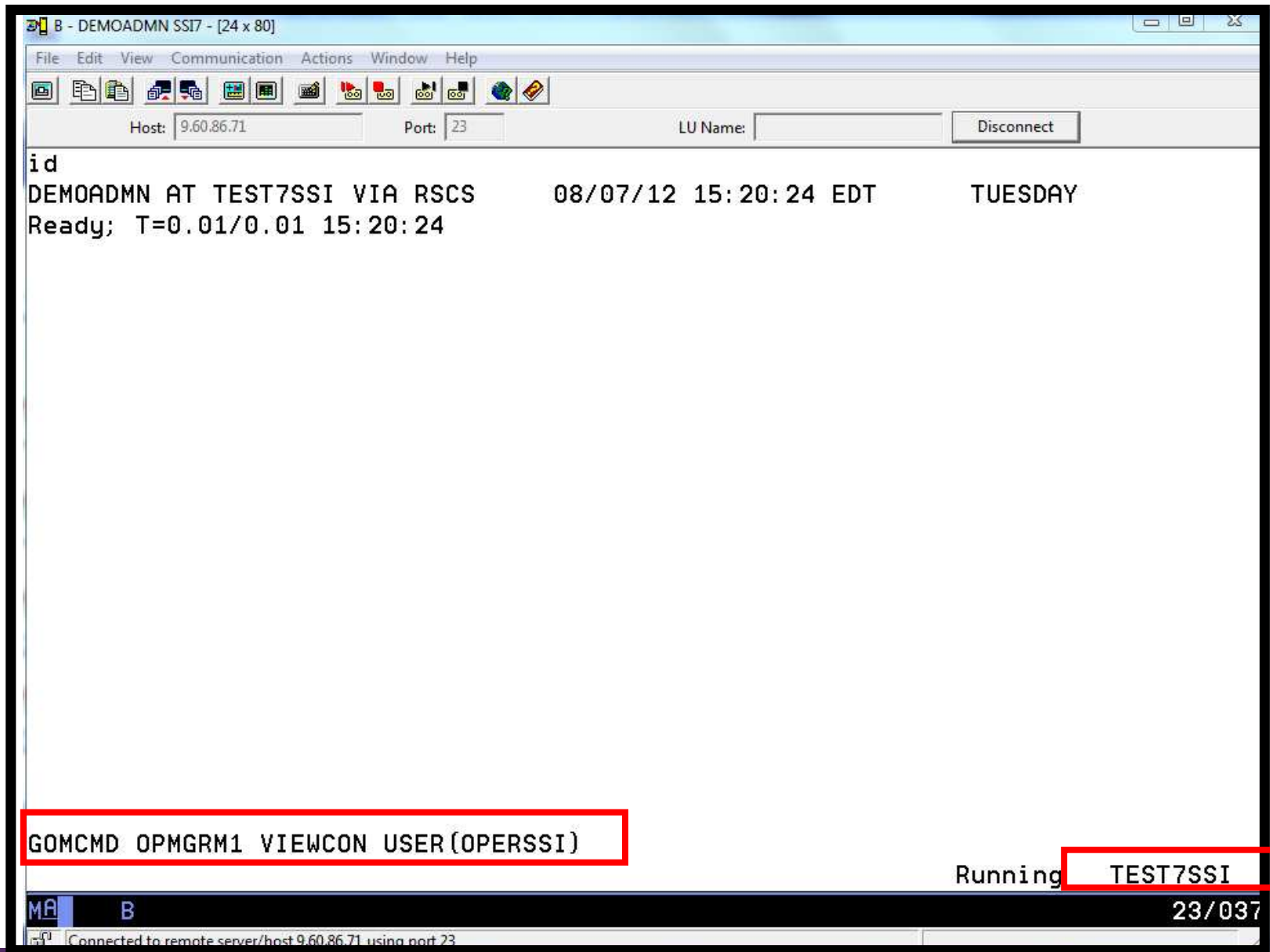
```
q names
```

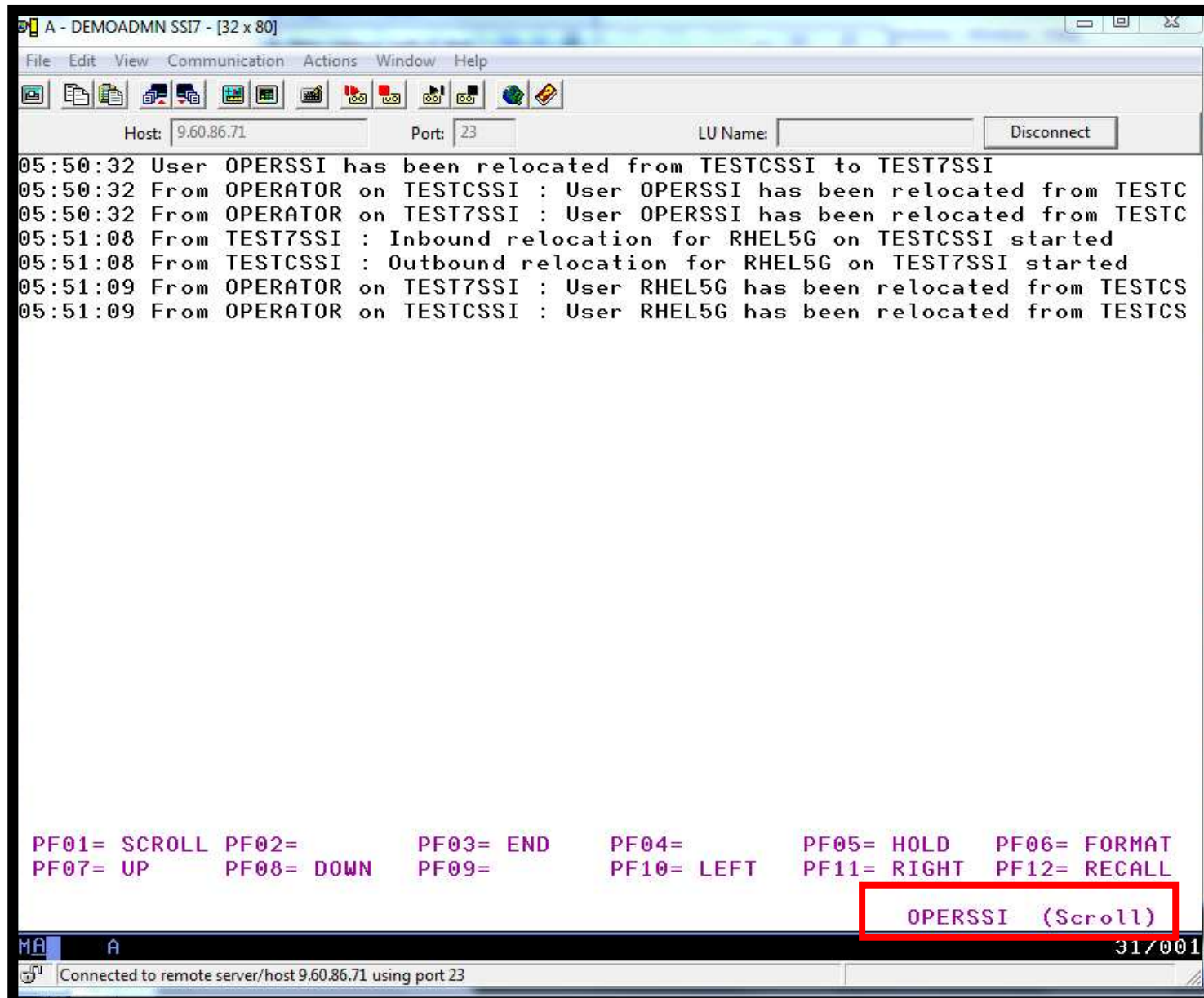
```
VMRELOCATE MOVE USER RHEL5G TO TESTCSSI
```

- On System B (TEST7SSI), prepare for planned shutdown by relocating the central operations console (OPERSSI)

```
VMRELOCATE MOVE USER OPERSSI TO TESTCSSI
```

- Note the messages received on OPERSSI on TEST7SSI from OPERATOR on both TESTCSSI and TEST7SSI indicating RHEL5G was relocated
- Note the message received on OPERSSI on TESTCSSI indicating OPERSSI has been relocated





The screenshot shows a terminal window titled "B - MAINT SSI7 - [24 x 80]". The window has a menu bar with "File", "Edit", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main area of the terminal displays a list of user names and their associated systems, followed by a command and its output. The text is as follows:

```
q names
DIRMSAT2 SSI , DATAMOV2 - SSI
RHEL5G - DSC , OPERSSI - DSC , DEMOADMN -L0004, MAINT -L0005
OPMGRS4 - DSC , OPMGRS3 - DSC , OPMGRS2 - DSC , OPMGRS1 - DSC
OPMGRM1 - DSC , RHEL6D - DSC , BKRBKUP - DSC , BKRCATLG - DSC
BKRSVSFS - DSC , SLES11C - DSC , SLES11D - DSC , DATAMOVE - DSC
DIRMAINT - DSC , TOOLS - DSC , MONGRID - DSC , LOGS - DSC
RSCS - DSC , LINUXSRV - DSC , PVM - DSC , IPGATE - DSC
PERFSVM - DSC , GCS - DSC , FTPSERVE - DSC , SMTP - DSC
TCPIP - DSC , DTCVSW2 - DSC , DTCVSW1 - DSC , OPERATNS - DSC
ATSSERV - DSC , VMSERV - DSC , VMSERVU - DSC , VMSERVP - DSC
VMSERVS - DSC , RACFVM - DSC , OPERSYMP - DSC , DISKACNT - DSC
EREP - DSC , OPERATOR - DSC , MAINT620 -L0007
VSM - TCPIP
Ready; T=0.01/0.01 05:55:05
VMRELOCATE MOVE USER RHEL5G TO TESTCSSI
Relocation of RHEL5G from TEST7SSI to TESTCSSI started
User RHEL5G has been relocated from TEST7SSI to TESTCSSI
Ready; T=0.01/0.01 05:57:32
```

At the bottom right of the terminal window, the text "Running TEST7SSI" is displayed. The status bar at the bottom of the window shows "MA B" on the left and "23/001" on the right. A status bar at the very bottom of the window indicates "Connected to remote server/host 9.60.86.71 using port 23".

```

B - MAINT SSI7 - [24 x 80]
File Edit View Communication Actions Window Help
Host: 9.60.86.71 Port: 23 LU Name: Disconnect
q names
DIRMSAT2 - SSI , DATAMOV2 - SSI
RHEL5G - DSC , OPERSSI - DSC , DEMOADMN -L0004 , MAINT -L0005
OPMGRS4 - DSC , OPMGRS3 - DSC , OPMGRS2 - DSC , OPMGRS1 - DSC
OPMGRM1 - DSC , RHEL6D - DSC , BKRBKUP - DSC , BKRCATLG - DSC
BKRSVSFS - DSC , SLES11C - DSC , SLES11D - DSC , DATAMOVE - DSC
DIRMAINT - DSC , TOOLS - DSC , MONGRID - DSC , LOGS - DSC
RSCS - DSC , LINUXSRV - DSC , PVM - DSC , IPGATE - DSC
PERFSVM - DSC , GCS - DSC , FTPSERVE - DSC , SMTP - DSC
TCPIP - DSC , DTCVSW2 - DSC , DTCVSW1 - DSC , OPERATNS - DSC
ATSSERV - DSC , VMSERV - DSC , VMSERVU - DSC , VMSERVP - DSC
VMSERVS - DSC , RACFVM - DSC , OPERSYMP - DSC , DISKACNT - DSC
EREP - DSC , OPERATOR - DSC , MAINT620 -L0007
VSM - TCPIP
Ready; T=0.01/0.01 05:55:05
VMRELOCATE MOVE USER RHEL5G TO TESTCSSI
Relocation of RHEL5G from TEST7SSI to TESTCSSI started
User RHEL5G has been relocated from TEST7SSI to TESTCSSI
Ready; T=0.01/0.01 05:57:32
VMRELOCATE MOVE USER operssi TO TESTCSSI
Relocation of OPERSSI from TEST7SSI to TESTCSSI started
User OPERSSI has been relocated from TEST7SSI to TESTCSSI
Holding TEST7SSI
MA B 23/001
Connected to remote server/host 9.60.86.71 using port 23
  
```

A screenshot of a terminal window titled "A - DEMOADMN SSI7 - [32 x 80]". The window has a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. Below the toolbar, there are fields for "Host: 9.60.86.71", "Port: 23", and "LU Name:", along with a "Disconnect" button. The main area contains a log of system events:

```
05:50:32 User OPERSSI has been relocated from TESTCSSI to TEST7SSI
05:50:32 From OPERATOR on TESTCSSI : User OPERSSI has been relocated from TESTC
05:50:32 From OPERATOR on TEST7SSI : User OPERSSI has been relocated from TESTC
05:51:08 From TEST7SSI : Inbound relocation for RHEL5G on TESTCSSI started
05:51:08 From TESTCSSI : Outbound relocation for RHEL5G on TEST7SSI started
05:51:09 From OPERATOR on TEST7SSI : User RHEL5G has been relocated from TESTCS
05:51:09 From OPERATOR on TESTCSSI : User RHEL5G has been relocated from TESTCS
05:57:31 From TEST7SSI : Outbound relocation for RHEL5G on TESTCSSI started
05:57:31 From TESTCSSI : Inbound relocation for RHEL5G on TEST7SSI started
05:57:32 From OPERATOR on TEST7SSI : User RHEL5G has been relocated from TEST7S
05:57:32 From OPERATOR on TESTCSSI : User RHEL5G has been relocated from TEST7S
05:59:34 From TEST7SSI : Outbound relocation for OPERSSI on TESTCSSI started
05:59:34 From TESTCSSI : Inbound relocation for OPERSSI on TEST7SSI started
```

At the bottom of the terminal, there are function key definitions:

```
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
```

Below the function key definitions, the text "OPERSSI (Scroll)" is displayed and highlighted with a red box. At the bottom left, there is a status bar showing "MA A" and "31/001". At the bottom right, there is a status bar showing "Connected to remote server/host 9.60.86.71 using port 23".


```

C - DEMOADM2 SSIC - [24 x 80]
File Edit View Communication Actions Window Help
Host: 9.60.86.170 Port: 23 LU Name: Disconnect
14:09:12 OPMGRS2 - DSC , OPMGRS1 - DSC , OPMGRM1 - DSC , BKRCATLG - DSC
14:09:12 BKRBKUP - DSC , DIRMSAT2 - DSC , RHEL5G - DSC , VMSEVR - DSC
14:09:12 DATAMOV2 - DSC , RSCS - DSC , PVM - DSC , PERFSVM - DSC
14:09:12 GCS - DSC , FTPSERVE - DSC , SMTP - DSC , TCPIP - DSC
14:09:12 DTCVSW2 - DSC , DTCVSW1 - DSC , OPERATNS - DSC , VMSEVRU - DSC
14:09:12 VMSEVR - DSC , RACFVM - DSC , OPERSYMP - DSC , DISKACNT - DSC
14:09:12 EREP - DSC , OPERATOR - DSC , OPERSSI - DSC
14:09:12 VSM - TCPIP
14:09:12 Ready; T=0.01/0.01 14:09:12
14:09:15 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
14:09:15 id
14:09:15 OPERSSI AT TESTCSSI VIA RSCS 10/13/12 14:09:15 EDT SATURDAY
14:09:15 Ready; T=0.01/0.01 14:09:15
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT SUNDAY 10/14/12
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT MONDAY 10/15/12
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT TUESDAY 10/16/12
00:00:00
05:59:34 User OPERSSI has been relocated from TEST7SSI to TESTCSSI
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPERSSI (Scroll)
MA C 23/001
Connected to remote server/host 9.60.86.170 using port 23
  
```

Scenario 11a: How Do You Do That?

Event monitor in Operations Manager:

```
*  
*** Notify OPERSSI console when relocations started  
DEFEMON NAME(RELOC),+  
    TYPE(9,10),+  
    ACTION(RELOC)
```

Action in Operations Manager:

```
*  
DEFACTN NAME(RELOC),+  
    COMMAND(EXEC MSG2OPER &u &3 &4 &5 junk),+  
    ENV(LVM)
```

Scenario 11a: How Do You Do That?

MSG2OPER EXEC (excerpts):

```
/* Send a message to a central console OPERSSI for SSI cluster */
/*                                                                    */
trace r
Address Command
Parse arg userid euser event sourcesys msgtext

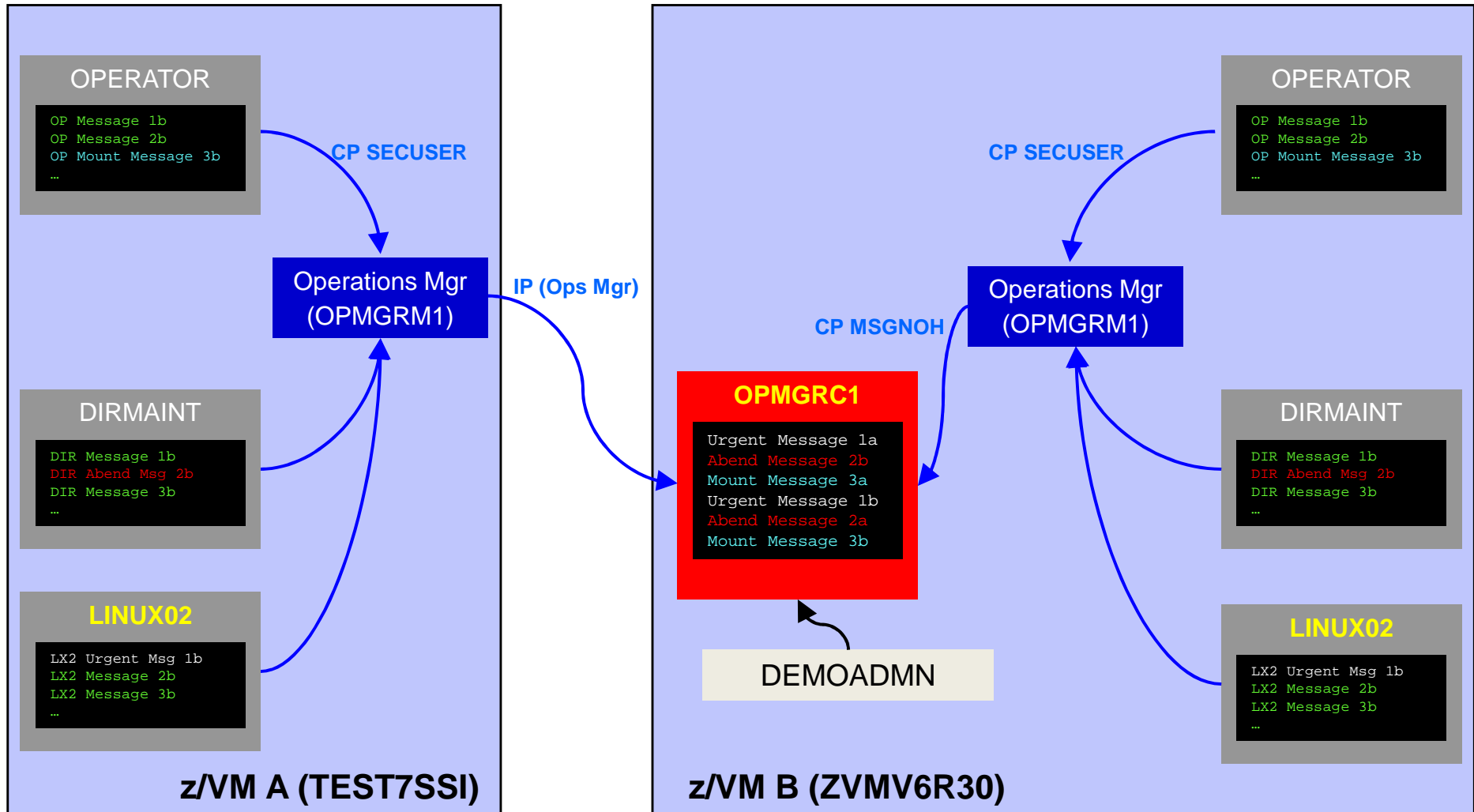
/* Get local TCP/IP hostname */
parse value Search_TCPIP_Data("hostname") with getrc tcphostname .
if getrc > 4 then tcphostname = "unknown_host_name"

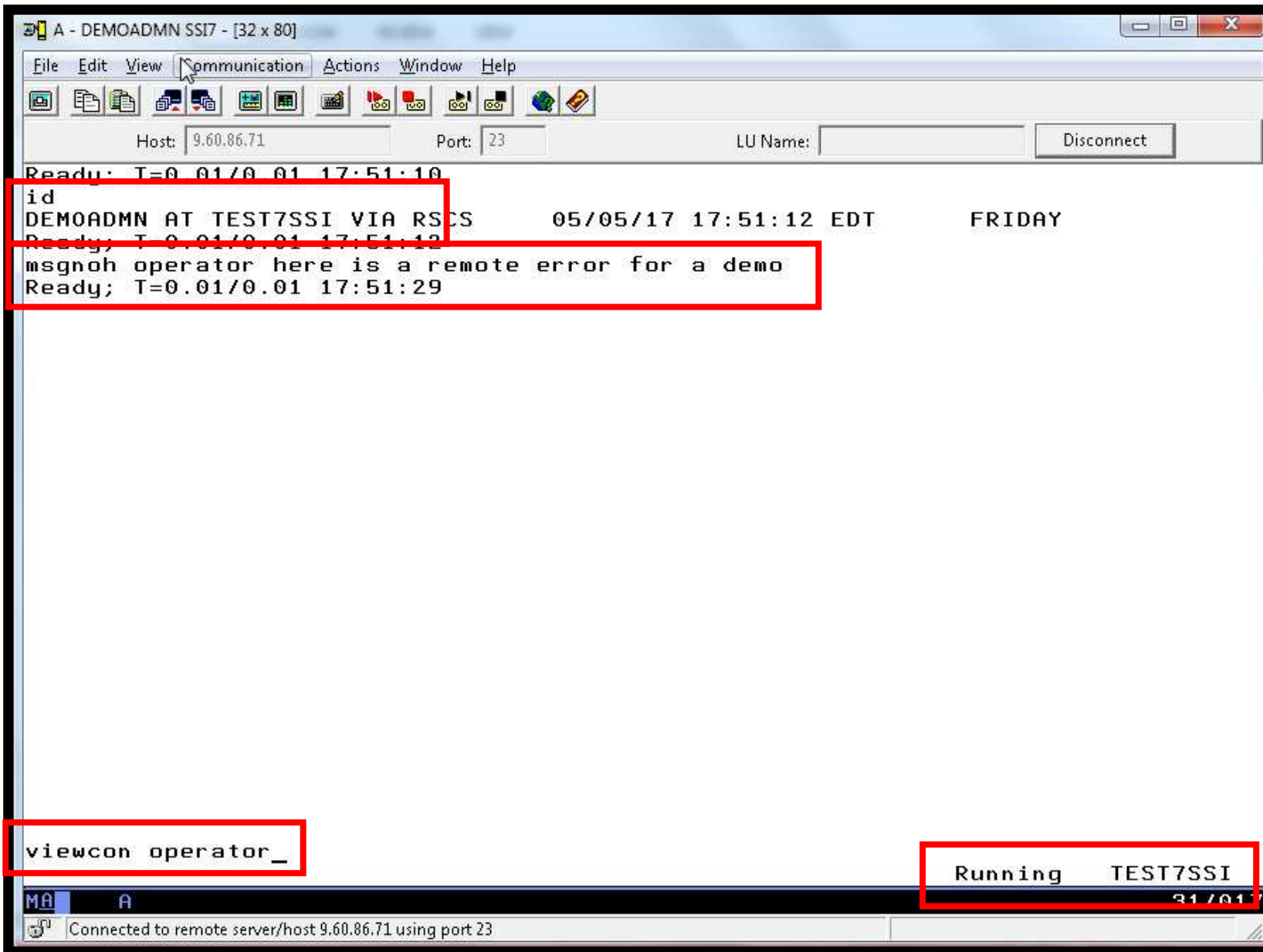
if userid = '_GOMEMON' then
do
  if event = 9 then
    msgtext = 'Outbound relocation for' euser 'on' sourcesys 'started'
  else
    msgtext = 'Inbound relocation for' euser 'on' sourcesys 'started'
  'CP MSGNOH OPERSSI AT TEST7SSI From' tcphostname ':' msgtext
end
```

**Scenario 11b:
Create a Central Operations Console across multiple z/VM
systems that are not in an SSI cluster**

- Use Operations Manager to watch for error, warning, fatal messages on service machine consoles on one or more systems
 - OPERATOR, DIRMAINT, TCP/IP, RACF, etc.
 - Linux guests
 - Linux syslog
- Route these messages to a central operations console on one of the z/VM systems
- Operations staff watches one operations console for signs of trouble across multiple z/VM systems
 - View individual service machine consoles on their natives systems for more details when needed
- SSI not required

Creating a Central Console Across Multiple LPARS

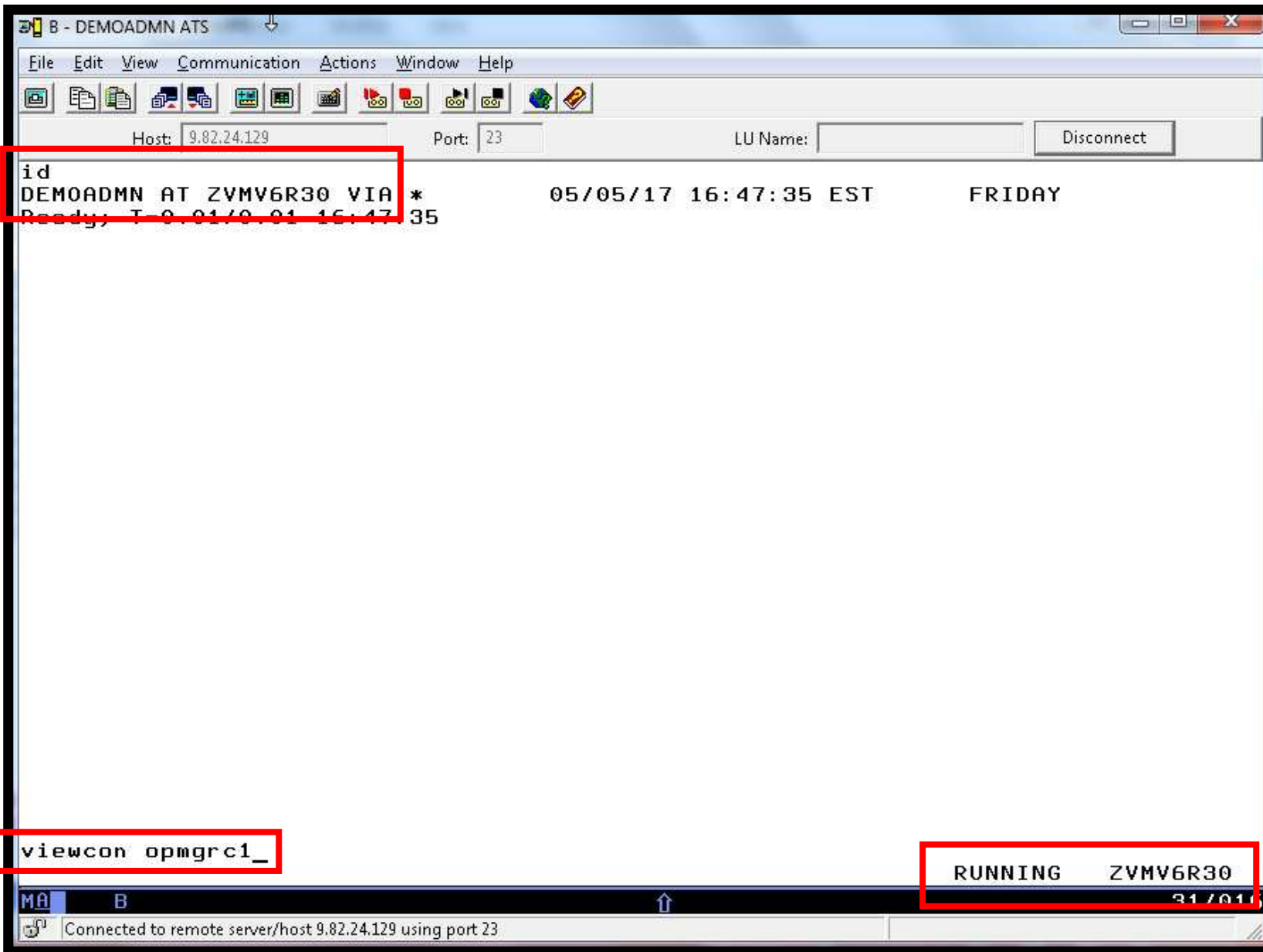




```
A - DEMOADMN SSI7 - [32 x 80]
File Edit View Communication Actions Window Help
Host: 9.60.86.71 Port: 23 LU Name: Disconnect
17:34:24 AUTO LOGON *** OPMGRS1 USERS = 38 BY OPMGRM1
17:34:24 AUTO LOGON *** OPMGRS2 USERS = 39 BY OPMGRM1
17:34:24 AUTO LOGON *** OPMGRS3 USERS = 40 BY OPMGRM1
17:34:24 AUTO LOGON *** OPMGRS4 USERS = 41 BY OPMGRM1
17:41:08 GRAF L0003 LOGOFF AS MAINT620 USERS = 40
17:41:16 GRAF L0004 LOGOFF AS DEMOADMN USERS = 39
17:41:25 ICH408I USER(DEMOADMN) GROUP(SYS1 ) NAME(#####)
17:41:25 LOGON/JOB INITIATION - INVALID PASSWORD ENTERED AT TERMINAL 09318D62
17:41:31 GRAF L0005 LOGON AS DEMOADMN USERS = 40 FROM 9.49.141.98
17:51:00 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
17:51:00 id
17:51:00 OPERATOR AT TEST7SSI VIA RSCS 05/05/17 17:51:00 EDT FRIDAY
17:51:00 Ready; T=0.01/0.01 17:51:00
17:51:29 HERE IS A REMOTE ERROR FOR A DEMO
17:51:29 HERE IS A REMOTE ERROR FOR A DEMO
17:51:29 * -- Operations Manager Action MSG2GBRG scheduled for execution -- *
17:51:29 * -- Operations Manager Action MSG2SSI scheduled for execution -- *

PF01= SCROLL PF02= TOP PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL

OPERATOR-TEST7SSI (Scroll)
MA A 31/001
Connected to remote server/host 9.60.86.71 using port 23
```




```

B - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
15:56:15 OPMGRM1 - DSC , HARRISJO - DSC , ATSZOS2 - DSC , ATSZOS1 - DSC
15:56:15 SLESB110 - DSC , SLESB113 - DSC , SLESB120 - DSC , R63H116 - DSC
15:56:15 SLESB103 - DSC , SLESB100 - DSC , SLESB119 - DSC , SLESB115 - DSC
15:56:15 SLESB109 - DSC , SLESB99 - DSC , R54H98 - DSC , SLESB102 - DSC
15:56:15 SLESA114 - DSC , SLESB101 - DSC , SLESB107 - DSC , R64H118 - DSC
15:56:15 SLESB104 - DSC , SLESB117 - L0003 , SLESB111 - DSC , SLESB106 - DSC
15:56:15 RH71D0CK - DSC , RH67TEST - DSC , SLESC073 - DSC , ICM4308E - DSC
15:56:15 UB16080 - DSC , ZHCP - DSC , XCAT - DSC , LOHCOST - DSC
15:56:15 VSMEVSRV - DSC , VSMREQIU - DSC , VSMREQI6 - DSC , VSMREQIN - DSC
15:56:15 DTCSMAPI - DSC , PERSMAPI - DSC , VSMWORK3 - DSC , VSMWORK2 - DSC
15:56:15 VSMWORK1 - DSC , WAVEWRKL - DSC , WAVEWRKC - DSC , WAVEWRKS - DSC
15:56:15 PERFSVM - DSC , VSMGUARD - DSC , DATAMOVE - DSC , DIRMAINT - DSC
15:56:15 BKRBKUP - DSC , BKRCATLG - DSC , SMTP - DSC , FTPSERVE - DSC
15:56:15 SNMPQE - DSC , SNMPD - DSC , BKRSVSFS - DSC , HSL02 - DSC
15:56:15 HSL01 - DSC , ISPVM - DSC , TCPIP - DSC , DTCVSW2 - DSC
15:56:15 DTCVSW1 - DSC , VMSERVP - DSC , VMSERVR - DSC , VMSERVU - DSC
15:56:15 VMSERVS - DSC , OPERSYMP - DSC , DISKACNT - DSC , EREP - DSC
15:56:15 OPERATOR - SYSC , DEMOADMN - L0004 , LISTGEN - DSC , RH67108 - DSC
15:56:15 OMEGACMD - DSC , OPMGRM1 - DSC
15:56:15 VSM - TCPIP
15:56:15 Ready; T=0.01/0.01 15:56:15
15:56:19 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
15:56:19 id
15:56:19 OPMGRM1 AT ZVMV6R30 VIA * 05/05/17 15:56:19 EST FRIDAY
15:56:19 Ready; T=0.01/0.01 15:56:19
15:57:26 FROM SLES11C ON TEST7SSI: echo here's a remote error
16:51:29 FROM OPERATOR ON TEST7SSI: HERE IS A REMOTE ERROR FOR A DEMO
16:51:29 FROM OPERSSI ON TEST7SSI: From OPERATOR on TEST7SSI : HERE IS A REMOT
PF01= SCROLL PF02= EXCMD PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPMGRM1-ZVMV6R30 (Scroll)
MA B 31/001
Connected to remote server/host 9.82.24.129 using port 23

```

Scenario 11b: Detailed Steps

- On System A (TEST7SSI), put an “error” message on the OPERATOR console
 - Must contain the text “remote error”
 - TEST7SSI is part of an SSI cluster, but System B is not in this cluster

`msgnoh operator here is a remote error for a demo`

- On System B (ZVMV6R30), view the “Operations Console” (user ID OPMGRC1)

`viewcon opmgrcl`

- Note the message received on OPMGRC1 on ZVMV6R30 from OPERATOR on TEST7SSI

Scenario 11b: How Do You Do That?

Console rule in Operations Manager on System A (TEST7SSI):

*

```
DEFRULE NAME OPERMSGS +  
  MATCH '*remote error*' +  
  ACTION MSG2GBRG
```

Action in Operations Manager on System A (TEST7SSI):

*

```
DEFACTN NAME MSG2GBRG +  
  COMMAND 'EXEC MSG2OPS OPMGRC1 From &u on &sysname: &t' +  
  ENV SVM
```

Scenario 11b: How Do You Do That?

MSG2OPS EXEC on System A (TEST7SSI):

```
/* Send a message to a console in Operations Manager on another */  
/* system, without SSI nor RSCS */
```

```
Trace 0
```

```
Address Command
```

```
Parse Arg cons_user msgtext
```

```
'PIPE var msgtext | > TEMP NOTE A'
```

```
'EXEC GOMRSIF TEMP NOTE A 9.82.24.129 63000' cons_user
```

```
Exit
```

Central Console (OPMGRC1)



IP address of System B



To run the Operations Manager command **GOMRSIF**, action processing servers on System A (TEST7SSI) must have **TCPMAINT 592** disk linked and accessed

Scenario 11b: How Do You Do That?

TCP/IP listener definition in Operations Manager on System B (ZVMV6R30):

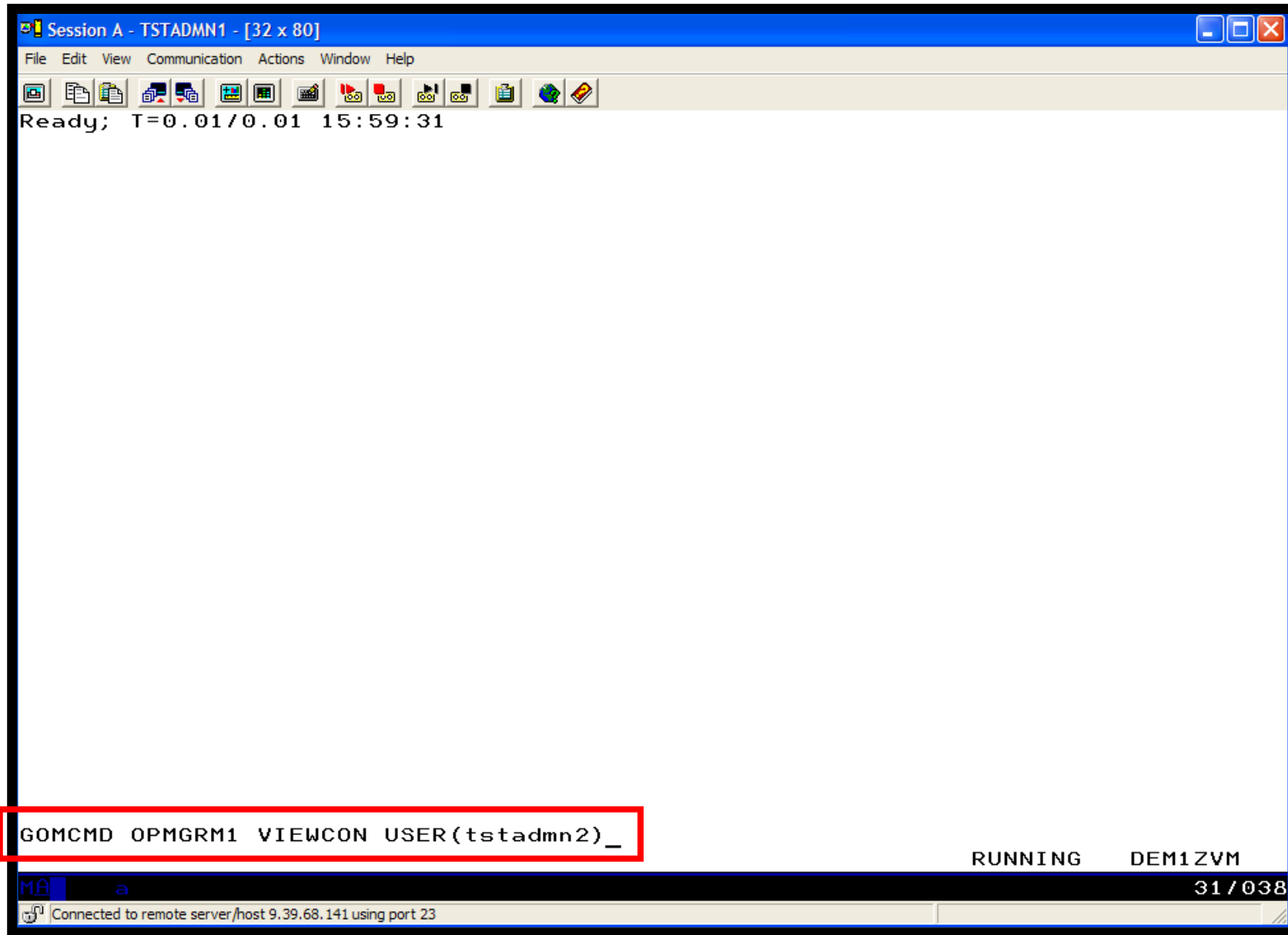
*

```
DEFIPCS NAME TESTDATA +  
  USER TCPIP +  
  APPL GOMRSIF +  
  ADDR 000.000.000.000 +  
  PORT 63000
```

- May also need to update TCP/IP on System B to allow Operations Manager to listen on port 63000
- Can alternatively use TELL (instead of GOMRSIF) to send messages from System A to System B, but requires RSCS

Scenario 12: Monitor Service Machines for LOGOFF Status – and AUTOLOG them

- Monitor specific service machines to make sure they stay logged on
 - Demo will monitor TSTADMN2 user ID
 - Could monitor a group of user IDs
 - If it changes from logged on to logged off status, then restart it
- Dynamically pass the user ID to the action
 - Re-use action for multiple monitors or user IDs



```
Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
11:57:57 z/VM V5.4.0      2009-09-23 15:29
11:57:57 DMSACP723I C (198) R/O
11:57:57 Ready; T=0.01/0.01 11:57:57
11:58:08 CONNECT= 00:00:10 VIRTCPU= 000:00.00 TOTCPU= 000:00.00
11:58:08 LOGOFF AT 11:58:08 CST TUESDAY 03/01/11 BY MAINT
11:58:12 z/VM V5.4.0      2009-09-23 15:29
11:58:12 DMSACP723I C (198) R/O
11:58:12 Ready; T=0.01/0.01 11:58:12
11:59:35 * -- Operations Manager VIEWCON session from TSTADMN1 entered the foll
11:59:35 id
11:59:35 TSTADMN2 AT DEM1ZVM  VIA RSCS      03/01/11 11:59:35 CST      TUESDAY
11:59:35 Ready; T=0.01/0.01 11:59:35
00:00:00 HCPMID6001I  TIME IS 00:00:00 CST WEDNESDAY 03/02/11
00:00:00
00:00:00 HCPMID6001I  TIME IS 00:00:00 CST THURSDAY 03/03/11
00:00:00
TSTADMN2 (Scroll)
31 / 001
Connected to remote server/host 9.39.68.141 using port 23
```



```
id
MAINT AT DEM1ZVM VIA RSCS 03/03/11 16:02:56 CST THURSDAY
Ready; T=0.01/0.01 16:02:56
q tstadmn2
TSTADMN2 - DSC
Ready; T=0.01/0.01 16:04:05
force tstadmn2
USER DSC LOGOFF AS TSTADMN2 USERS = 32 FORCED BY MAINT
Ready; T=0.01/0.01 16:04:10
q tstadmn2
TSTADMN2 - DSC
Ready; T=0.01/0.01 16:04:18
```

RUNNING DEM1ZVM

MA b 31 / 001

Connected to remote server/host 9.39.68.141 using port 23

```
Session A - TSTADMN1 - [32 x 80]
File Edit View Communication Actions Window Help
11:57:57 z/VM V5.4.0      2009-09-23 15:29
11:57:57 DMSACP723I C (198) R/0
11:57:57 Ready; T=0.01/0.01 11:57:57
11:58:08 CONNECT= 00:00:10 VIRTCPU= 000:00.00 TOTCPU= 000:00.00
11:58:08 LOGOFF AT 11:58:08 CST TUESDAY 03/01/11 BY MAINT
11:58:12 z/VM V5.4.0      2009-09-23 15:29
11:58:12 DMSACP723I C (198) R/0
11:58:12 Ready; T=0.01/0.01 11:58:12
11:59:35 * -- Operations Manager VIEWCON session from TSTADMN1 entered the foll
11:59:35 id
11:59:35 TSTADMN2 AT DEM1ZVM  VIA RSCS      03/01/11 11:59:35 CST      TUESDAY
11:59:35 Ready; T=0.01/0.01 11:59:35
00:00:00 HCPMID6001I  TIME IS 00:00:00 CST WEDNESDAY 03/02/11
00:00:00
00:00:00 HCPMID6001I  TIME IS 00:00:00 CST THURSDAY 03/03/11
00:00:00
16:04:10 CONNECT= 52:05:57 VIRTCPU= 000:00.00 TOTCPU= 000:00.00
16:04:10 LOGOFF AT 16:04:10 CST THURSDAY 03/03/11 BY MAINT
16:04:13 z/VM V5.4.0      2009-09-23 15:29
16:04:13 DMSACP723I C (198) R/0
16:04:13 Ready; T=0.01/0.01 16:04:13

MA a
31 / 001
Connected to remote server/host 9.39.68.141 using port 23
```

Scenario 12: How Do You Do That?

Console rule and action in Operations Manager:

*

```
DEFEMON NAME(ADMIN2),+  
  TYPE(1),+  
  USER(TSTADMN2),+  
  ACTION(AUTOLOG1)
```

*

```
DEFACTN NAME(AUTOLOG1),+  
  COMMAND(CP SLEEP 3 SEC),+  
  NEXTACTN(AUTOLOG2),+  
  OUTPUT(LOG),+  
  ENV(OPMGRS1)
```

*

```
DEFACTN NAME(AUTOLOG2),+  
  COMMAND(CP XAUTOLOG &3),+  
  OUTPUT(LOG),+  
  ENV(OPMGRS1)
```

Scenario 13: Monitor Page Space – Send Email if Full

- Operations Manager monitors the page space usage (percent full)
 - For demo purposes, page space monitor is currently defined but suspended (not active)
 - We'll dynamically resume (re-activate) the page space monitor
 - Demo monitor requires the page space be only 0% full
- Usage exceeds the specified limit
- Automatically send an e-mail to someone who can evaluate and take action
- For demo purposes, suspend (de-activate) the page space monitor when complete

Scenario 13: Detailed Steps

- From an authorized VM user ID, see the page space usage:

```
q alloc page
```

- From a user ID with Operations Manager privileges:

```
gomcmd opmgrml resume page(pgfull)
```

- Check the Operations Manager log to see the spool monitor triggered:

```
gomcmd opmgrml viewlog
```

- Check the inbox of the appropriate person to see the email

- From a user ID with Operations Manager privileges:

```
gomcmd opmgrml suspend page(pgfull)
```

```

id
DEMOADMN AT ZVMV5R40 VIA RSCS      08/07/12 15:10:02 EST      TUESDAY
Ready; T=0.017/0.01 15:10:02
q alloc page

```

VOLID	RDEV	EXTENT START	EXTENT END	TOTAL PAGES	PAGES IN USE	HIGH PAGE	% USED
540PAG	6B04	1	3338	600840	106231	141895	17%
ZVMPG1	6B05	1	3338	600840	107778	145533	17%
ZVMPG2	6B06	1	3338	600840	107866	142859	17%
ZVMPG3	6B07	1	3338	600840	105872	143574	17%
ZVMPG4	6B10	0	3338	601020	109341	146486	18%
ZVMPG5	6B0B	0	3338	601020	100116	135962	16%
ZVMPG6	6B0C	0	3338	601020	107786	147454	17%
PG6B0A	6B0A	0	10016	1761K	111151	149402	6%
SUMMARY				5869K	856141		14%
USABLE				5869K	856141		14%

```

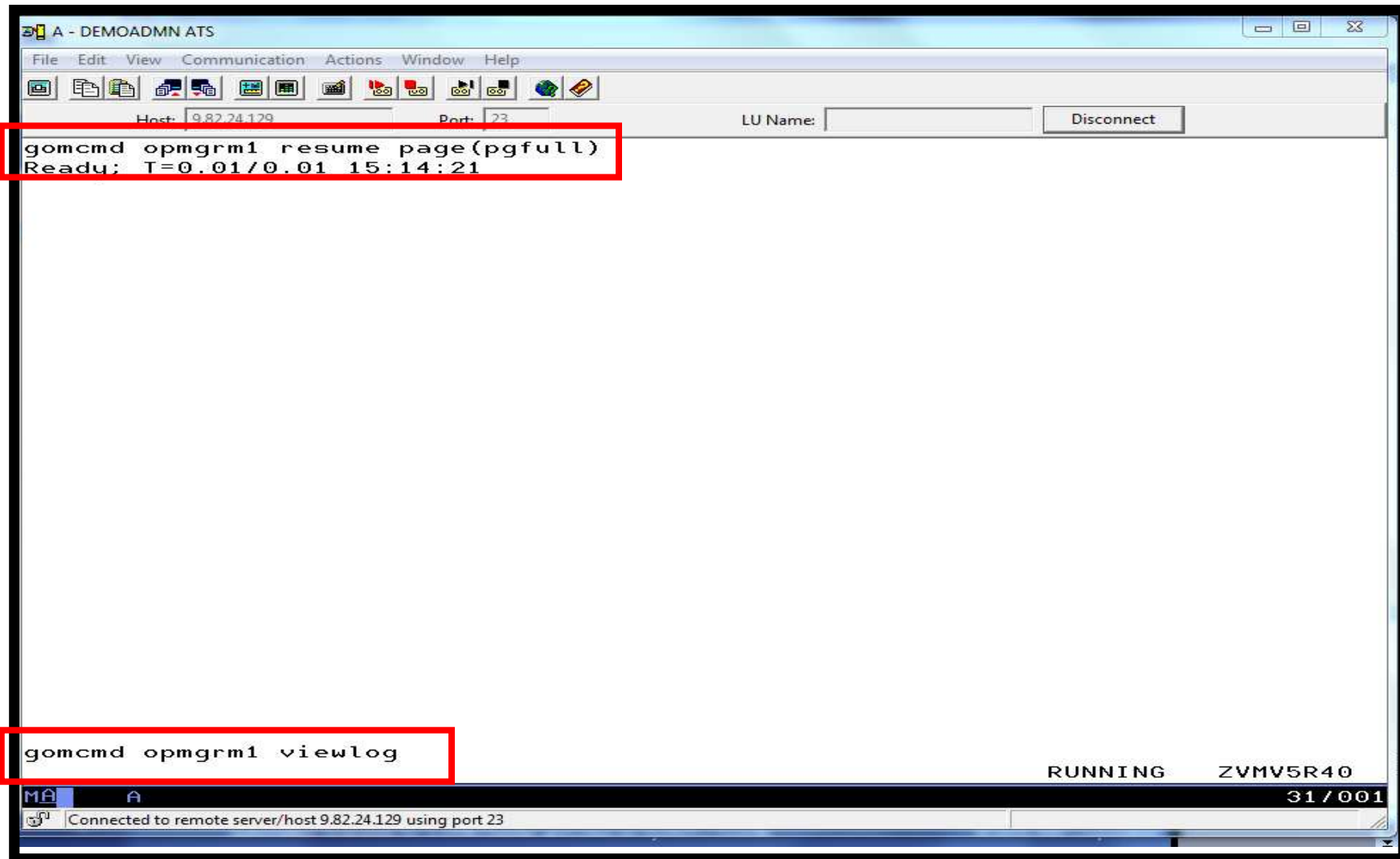
Ready; T=0.017/0.01 15:10:06

```

RUNNING ZVMV5R40

MA A 31 / 001

Connected to remote server/host 9.82.24.129 using port 23



```

A - DEMOADMIN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
08/07/2012 15:15:27 GOMPM00451I PAGE USE: MONITOR PGFULL SPACE 14 PERCENT
08/07/2012 15:15:27 GOMPM00452I PAGE CHG: MONITOR PGFULL SPACE 0 PERCENT
08/07/2012 15:15:27 GOMACT0260I PAGE PGFULL ACTION PAGEMAIL TRIGGERED BY _GO
08/07/2012 15:15:27 GOMACT0262I ACTION PAGEMAIL BEGIN FOR _GOMPMON SERVER OPMG
08/07/2012 15:15:27 GOMACT0269L COMMAND "EXEC SMTPPG TLD1 AT US.IBM.COM 14"
08/07/2012 15:15:27 GOMACT0270L DMSXSU587I XEDIT:
08/07/2012 15:15:27 GOMACT0270L NOTE OPMGRM1 NOTE A1 sent to TLD1 at US.IBM.CO
08/07/2012 15:15:27 GOMACT0267I ACTION PAGEMAIL END RC=0 SERVER OPMGRM1
08/07/2012 15:15:27 GOMCMD0216L SMTP "* From SMTP: Received Spool File 005
08/07/2012 15:15:28 GOMCMD0216L SMTP "* From SMTP: Mail delivered to: <TLD
08/07/2012 15:16:20 GOMCMD0216L USSYSLOG "<30>snmpdY1425": Connection from UDP
08/07/2012 15:16:20 GOMCMD0216L LXXSYSLOG "<30>snmpdY1425": Connection from UDP
08/07/2012 15:16:27 GOMPM00453I PAGE ALERT: MONITOR PGFULL USAGE CONDITIO
08/07/2012 15:16:27 GOMPM00451I PAGE USE: MONITOR PGFULL SPACE 14 PERCENT
08/07/2012 15:16:27 GOMPM00452I PAGE CHG: MONITOR PGFULL SPACE 0 PERCENT
08/07/2012 15:16:27 GOMACT0260I PAGE PGFULL ACTION PAGEMAIL TRIGGERED BY _GO
08/07/2012 15:16:27 GOMACT0262I ACTION PAGEMAIL BEGIN FOR _GOMPMON SERVER OPMG
08/07/2012 15:16:27 GOMACT0269L COMMAND "EXEC SMTPPG TLD1 AT US.IBM.COM 14"
08/07/2012 15:16:27 GOMACT0270L DMSXSU587I XEDIT:
08/07/2012 15:16:27 GOMACT0270L NOTE OPMGRM1 NOTE A1 sent to TLD1 at US.IBM.CO
08/07/2012 15:16:27 GOMACT0267I ACTION PAGEMAIL END RC=0 SERVER OPMGRM1
08/07/2012 15:16:27 GOMCMD0216L SMTP "* From SMTP: Received Spool File 005
08/07/2012 15:16:33 GOMCMD0216L SMTP "* From SMTP: Mail delivered to: <TLD
08/07/2012 15:17:13 GOMCMD0201L DEMOADMIN VIEWLOG VID=DEMOADMIN SRC=HAS10CV C
08/07/2012 15:17:27 GOMPM00453I PAGE ALERT: MONITOR PGFULL USAGE CONDITIO
08/07/2012 15:17:27 GOMPM00451I PAGE USE: MONITOR PGFULL SPACE 14 PERCENT
08/07/2012 15:17:27 GOMPM00452I PAGE CHG: MONITOR PGFULL SPACE 0 PERCENT
08/07/2012 15:17:27 GOMPM00455I PAGE MONITOR "PGFULL " EXECUTION LIMIT EXCEED
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06=
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
_GOMALOG (Scroll)
31/001
Connected to remote server/host 9.82.24.129 using port 23

```


Scenario 13: How Do You Do That?

➤ Console rule and action in Operations Manager:

*

```
DEFPMON NAME(PGFULL),+  
  USAGE(010-100),+  
  INTERVAL(1),+  
  LIMIT(3,3600),+  
  ACTION(PAGEMAIL)
```

*

```
SUSPEND PAGE(PGFULL)
```

*

```
DEFACTN NAME(PAGEMAIL),+  
  COMMAND(EXEC SMTPPG tld1 at us.ibm.com &4),+  
  OUTPUT(LOG),+  
  ENV(LVM)
```

Scenario 13: How Do You Do That?

SMTPPG EXEC (excerpts)

```
/* */
Parse arg mail_user dummyat mail_node pgpct

errtext = 'Page space is' pgpct'% full on z/VM system'

/* Get local TCP/IP hostname */
parse value Search_TCPIP_Data("hostname") with getrc tcphostname .
if getrc > 4 then tcphostname = "unknown_host_name"
parse value Search_TCPIP_Data("domainorigin") with getrc tcpdomain .
if getrc > 4 then tcpdomain = "unknown_domain_name"

fqdomain_name = tcphostname.'tcpdomain

/* Construct the e-mail */
line.1 = 'OPTIONS: NOACK LOG SHORT NONOTEBOOK ALL CLASS A'
line.2 = 'Date: ' Date() ',' Time()
line.3 = 'From: Operations Manager for z/VM'
line.4 = 'To: ' mail_user 'at' mail_node
line.5 = 'Subject: ' errtext 'on' fqdomain_name
line.6 = 'DO NOT REPLY - This e-mail was generated by an automated service machine'
line.7 = ' '
line.8 = msgtext
line.0 = 8

'PIPE stem line. | > TEMP NOTE A'

'EXEC SENDFILE TEMP NOTE A (NOTE SMTP'
```

Scenario 14: Monitor SSI Connectivity between Two Members of a Cluster

- Create a schedule to query ISLINKs between two members of a cluster
- If less than 4 links up, send message to consolidated SSI console (OPERDEMO)
 - For demo purposes, we'll dynamically deactivate a link then reactivate it when done

Scenario 14: Detailed Steps

- From an authorized VM user ID, see the currently available ISLINKs:

```
q islink node tivlp32
```

- Deactivate one of the links:

```
deactivate islink 4110
```

- Using Operations Manager, view the central operations console to see the alert:

```
viewcon operdemo
```

- Schedule is triggered every 1 minute, so wait 1 minute and see the messages again
- Reactivate the link:

```
activate islink 4110
```

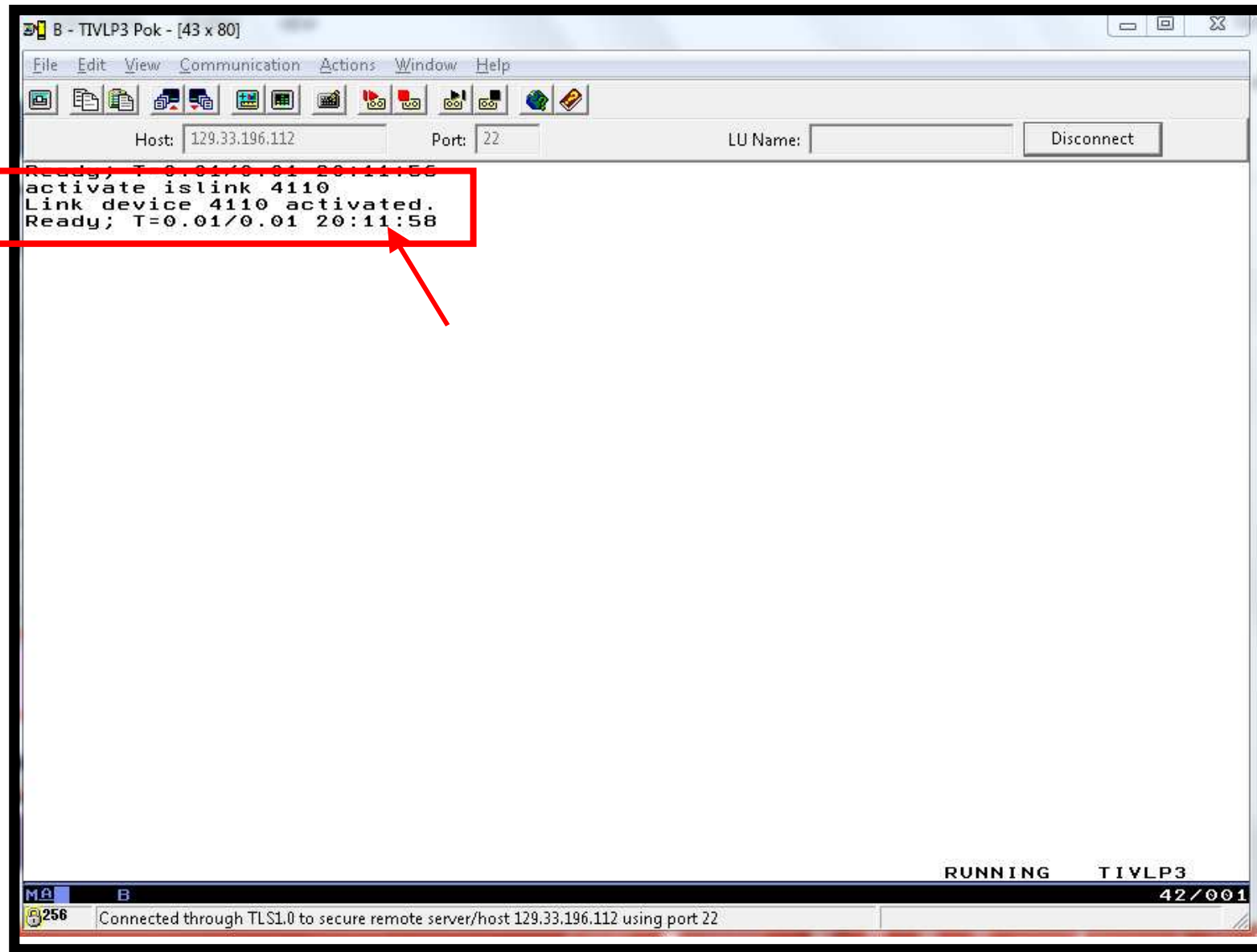
```
B - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
Ready; T=0.02/0.02 20:02:30
q islink node tivlp32
Node: TIVLP32
Link device: 4110 Type: FCTC Bytes Sent: 6398
State: Up Bytes Received: 0
Status: Idle
Remote link device: 5110
Link device: 4111 Type: FCTC Bytes Sent: 1807500
State: Up Bytes Received: 401344310
Status: Idle
Remote link device: 5111
Ready; T=0.01/0.01 20:02:32
deactivate islink 4110
Link device 4110 deactivated.
Ready; T=0.01/0.01 20:02:33

viewcon operdemo

RUNNING TIVLP3
MA B 42/017
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22
```

```

B - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
20:01:59 q disk
20:01:59 LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT
20:01:59 DEM191 191 A R/W 1 3390 4096 1 8-04 172
20:01:59 MNT190 190 S R/O 207 3390 4096 698 19782-53 17478
20:01:59 MNT19E 19E Y/S R/O 500 3390 4096 2219 87113-97 2887
20:01:59 Ready; T=0.01/0.01 20:01:59
20:02:06 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
20:02:06 q names
20:02:06 DIRMSAT2 - SSI , DATAMOV2 - SSI
20:02:06 WAVET - DSC , DOCKER1 - DSC , TSM1 - DSC , WAVE - DSC
20:02:06 DASH - DSC , RHEL3 - DSC , RHEL2 - DSC , RHEL1 - DSC
20:02:06 LOHCOST - DSC , VSMEVSRV - DSC , VSMREQIU - DSC , VSMREQI6 - DSC
20:02:06 VSMREQIN - DSC , DTCSMAPI - DSC , BKRSVSFS - DSC , FTPSERVE - DSC
20:02:06 VSMWORK3 - DSC , VSMWORK2 - DSC , VSMWORK1 - DSC , SSL00005 - DSC
20:02:06 SSL00004 - DSC , SSL00003 - DSC , SSL00002 - DSC , SSL00001 - DSC
20:02:06 SSLDCSSM - DSC , ISPYM - DSC , DATAMOYE - DSC , TCPIP - DSC
20:02:06 GCS - DSC , VSMGUARD - DSC , DIRMAINT - DSC , DTCVSW2 - DSC
20:02:06 DTCVSW1 - DSC , VMSERV - DSC , VMSERV - DSC , VMSERVU - DSC
20:02:06 VMSERVS - DSC , OPERSYMP - DSC , DISKACNT - DSC , EREP - DSC
20:02:06 OPERATOR - DSC , DEMOADMN -L0004, OPMGRS3 - DSC , OPMGRS2 - DSC
20:02:06 OPMGRS1 - DSC , OPMGRM1 - DSC , OPSSVSFS - DSC , RMSMASTR - DSC
20:02:06 BKRBKUP - DSC , BKRCATLG - DSC , TCLM1 - DSC , TCDMM - DSC
20:02:06 TCTMM - DSC , TMLM1CAT - DSC , TMDMMLCAT - DSC , PATCLONE - DSC
20:02:06 RHEL5 - DSC , IC02L01 - DSC , IC03L01 - DSC , IC05L01 - DSC
20:02:06 IC04L01 - DSC , IC01L01 - DSC , IC20L01 - DSC , IC11L01 - DSC
20:02:06 IC19L01 - DSC , IC15L01 - DSC , IC08L01 - DSC , IC16L01 - DSC
20:02:06 IC13L01 - DSC , IC12L01 - DSC , IC14L01 - DSC , IC17L01 - DSC
20:02:06 PATRICIA - DSC , IC06L01 - DSC , IC09L01 - DSC , IC07L01 - DSC
20:02:06 IC10L01 - DSC , IC18L01 - DSC , WAVEWRKL - DSC , WAVEWRKC - DSC
20:02:06 WAVEWRKS - DSC , RHEL4 - DSC , SMTP - DSC , RACFDEMO - DSC
20:02:06 PERFSYM - DSC , LNXTEST - DSC , TCPDEMO - DSC , DIRMDEMO - DSC
20:02:06 Ready; T=0.01/0.01 20:02:06
20:07:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:07:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:08:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:08:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:09:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:09:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPERDEMO-TIVLP3 (Scroll)
MA B 42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22
  
```



```

B - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
20:01:59 MNT19E 19E Y/S R/O 500 3390 4096 2219 87113-97 2887
20:01:59 Ready; T=0.01/0.01 20:01:59
20:02:06 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
20:02:06 q names
20:02:06 DIRMSAT2 - SSI , DATAMOV2 - SSI
20:02:06 WAVET - DSC , DOCKER1 - DSC , TSM1 - DSC , WAVE - DSC
20:02:06 DASH - DSC , RHEL3 - DSC , RHEL2 - DSC , RHEL1 - DSC
20:02:06 LOHCOST - DSC , VSMEVSRV - DSC , VSMREQIU - DSC , VSMREQI6 - DSC
20:02:06 VSMREQIN - DSC , DTCSMAPI - DSC , BKRSYSFS - DSC , FTPSERVE - DSC
20:02:06 VSMWORK3 - DSC , VSMWORK2 - DSC , VSMWORK1 - DSC , SSL00005 - DSC
20:02:06 SSL00004 - DSC , SSL00003 - DSC , SSL00002 - DSC , SSL00001 - DSC
20:02:06 SSLDCSSM - DSC , ISPYM - DSC , DATAMOVE - DSC , TCPIP - DSC
20:02:06 GCS - DSC , VSMGUARD - DSC , DIRMAINT - DSC , DTCVSW2 - DSC
20:02:06 DTCVSW1 - DSC , VMSERV - DSC , VMSERV - DSC , VMSERVU - DSC
20:02:06 VMSERVS - DSC , OPERSYMP - DSC , DISKACNT - DSC , EREP - DSC
20:02:06 OPERATOR - DSC , DEMOADMN - L0004 , OPMGRS3 - DSC , OPMGRS2 - DSC
20:02:06 OPMGRS1 - DSC , OPMGRM1 - DSC , OPSSVSFS - DSC , RMSMASTR - DSC
20:02:06 BKRBKUP - DSC , BKRCATLG - DSC , TCLM1 - DSC , TCDMM - DSC
20:02:06 TCTMM - DSC , TMLM1CAT - DSC , TMDMMCAT - DSC , PATCLONE - DSC
20:02:06 RHEL5 - DSC , IC02L01 - DSC , IC03L01 - DSC , IC05L01 - DSC
20:02:06 IC04L01 - DSC , IC01L01 - DSC , IC20L01 - DSC , IC11L01 - DSC
20:02:06 IC19L01 - DSC , IC15L01 - DSC , IC08L01 - DSC , IC16L01 - DSC
20:02:06 IC13L01 - DSC , IC12L01 - DSC , IC14L01 - DSC , IC17L01 - DSC
20:02:06 PATRICIA - DSC , IC06L01 - DSC , IC09L01 - DSC , IC07L01 - DSC
20:02:06 IC10L01 - DSC , IC18L01 - DSC , WAVEWRKL - DSC , WAVEWRKC - DSC
20:02:06 WAVEWRKS - DSC , RHEL4 - DSC , SMTP - DSC , RACFDEMO - DSC
20:02:06 PERFSVM - DSC , LNXTEST - DSC , TCPDEMO - DSC , DIRMDEMO - DSC
20:02:06 OPERDEMO - DSC
20:02:06 Ready; T=0.01/0.01 20:02:06
20:07:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:07:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:08:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:08:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:09:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:09:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:10:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:10:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
20:11:00 From TIVLP3: Number of ISLINKs to TIVLP32 is 1
20:11:00 From TIVLP32: Number of ISLINKs to TIVLP3 is 1
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPERDEMO-TIVLP3 (Scroll)
MA B 42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```


Scenario 14: How Do You Do That?

➤ Schedule and action in Operations Manager:

*** Check every 1 minute for any IS Links being down

```
DEFSCHD NAME ISLINK1 +
```

```
    EVERY 00:01 +
```

```
    ACTION QISLINK +
```

```
    PARM TIVLP32
```

```
*
```

```
DEFACTN NAME QISLINK +
```

```
    COMMAND 'EXEC QISLINK &sysname &p' +
```

```
    ENV SVM
```

Scenario 14: How Do You Do That?

➤ Rule and action in Operations Manager:

*** Make ISLINK errors pink on OPERDEMO console

```
DEFRULE NAME LINKPINK +  
  MATCH '*number of islinks*' +  
  USER OPERDEMO +  
  ACTION PINK  
*  
DEFACTN NAME PINK +  
  INPUT CPI
```

Scenario 14: How Do You Do That?

- QISLINK EXEC:

```
/* Find the number of ISLINKs available to another member */
/* If less than 2, then send message to OPERDEMO          */
Trace 0
Address Command
Parse Upper Arg thisnode othernode
'PIPE CP QUERY ISLINK NODE' othernode '| find ____State:____Up| COUNT LINES | VAR numlinks'
If numlinks < 2
  Then 'CP MSGNOH OPERDEMO AT ALL From' thisnode': Number of ISLINKs to' othernode 'is' numlinks
Exit 0
```

Scenario 15: Suppress Passwords on Linux Consoles

- TN3270 login to Linux guest displays password
 - Password on separate line from password prompt
 - Password captured in console and viewable in Operations Manager VIEWCON
- Use a rule in Operations Manager to suppress the password
 - I.e. the line following the “password:” prompt
- Can be expanded to suppress multiple lines following matching text

Scenario 15: Detailed Steps

- Use Operations Manager to view the console of a Linux guest:

```
gomcmd opmgrm1 viewcon user(omeglnx1)
```

- Enter the login command:

```
login root
```

- Enter the password
 - Note that it's not displayed

Scenario 15: How Do You Do That?

➤ Rule and action in Operations Manager:

*

* Change password prompt to red.

* Suppress the password when logging onto OMEGLNX1.

* Have to suppress next 2 lines to include the line Ops Mgr adds

* indicating the user entered a "command"

*

```
DEFRULE NAME(OMEGPW),+
```

```
  MATCH(Password:*) ,+
```

```
  USER(OMEGLNX1) ,+
```

```
  ACTION(SUPPW) ,+
```

```
  SUPNEXT(2)
```

*

```
DEFACTN NAME(SUPPW) ,+
```

```
  INPUT(CRE)
```

Scenario 16: Autolog a Linux Guest and Send Message if Doesn't Start Successfully

- Define a schedule and action to start a Linux guest
- Define a rule looking for the application specific message indicating up and ready for work
- Define an idle monitor for the above rule
 - If “up and ready” message is not found within 1 minute, then send message to central console
- Idle monitor is suspended until schedule is triggered
 - Before autologging the Linux guest, automatically resume idle monitor
- Idle monitor is automatically suspended again once it is triggered

Scenario 16: Detailed Steps

- View the configuration file to see the action that will be “scheduled”, plus the rules and monitors

```
x tracy config
```

- Run the action that starts the guest (and monitors)

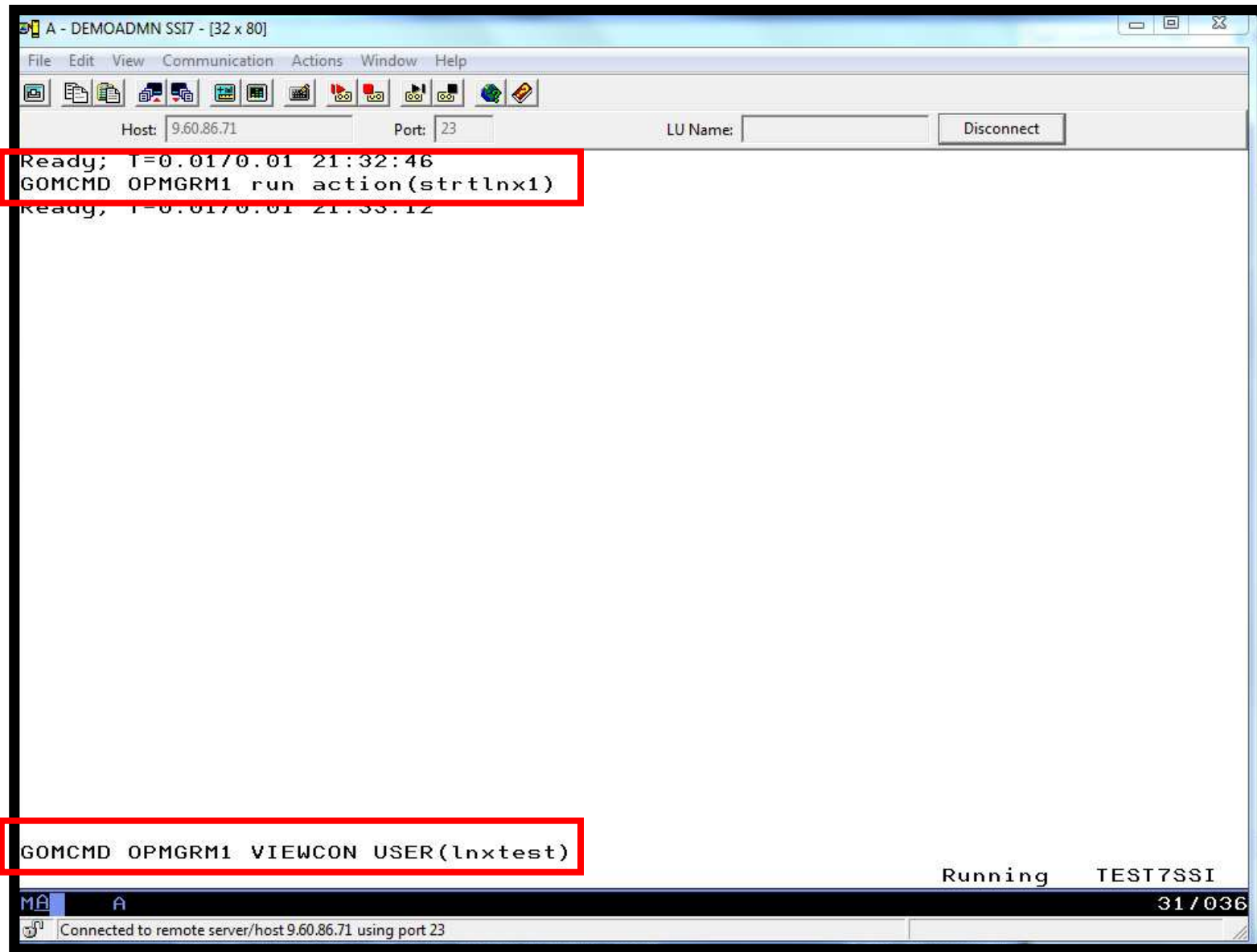
```
gomcmd opmgrml run action(strtlnx1)
```

- View the console of LNXTEST to see that it gets autologged

```
viewcon lnxtest
```

- View the central console of OPERSSI to see the message that the guest did not start successfully

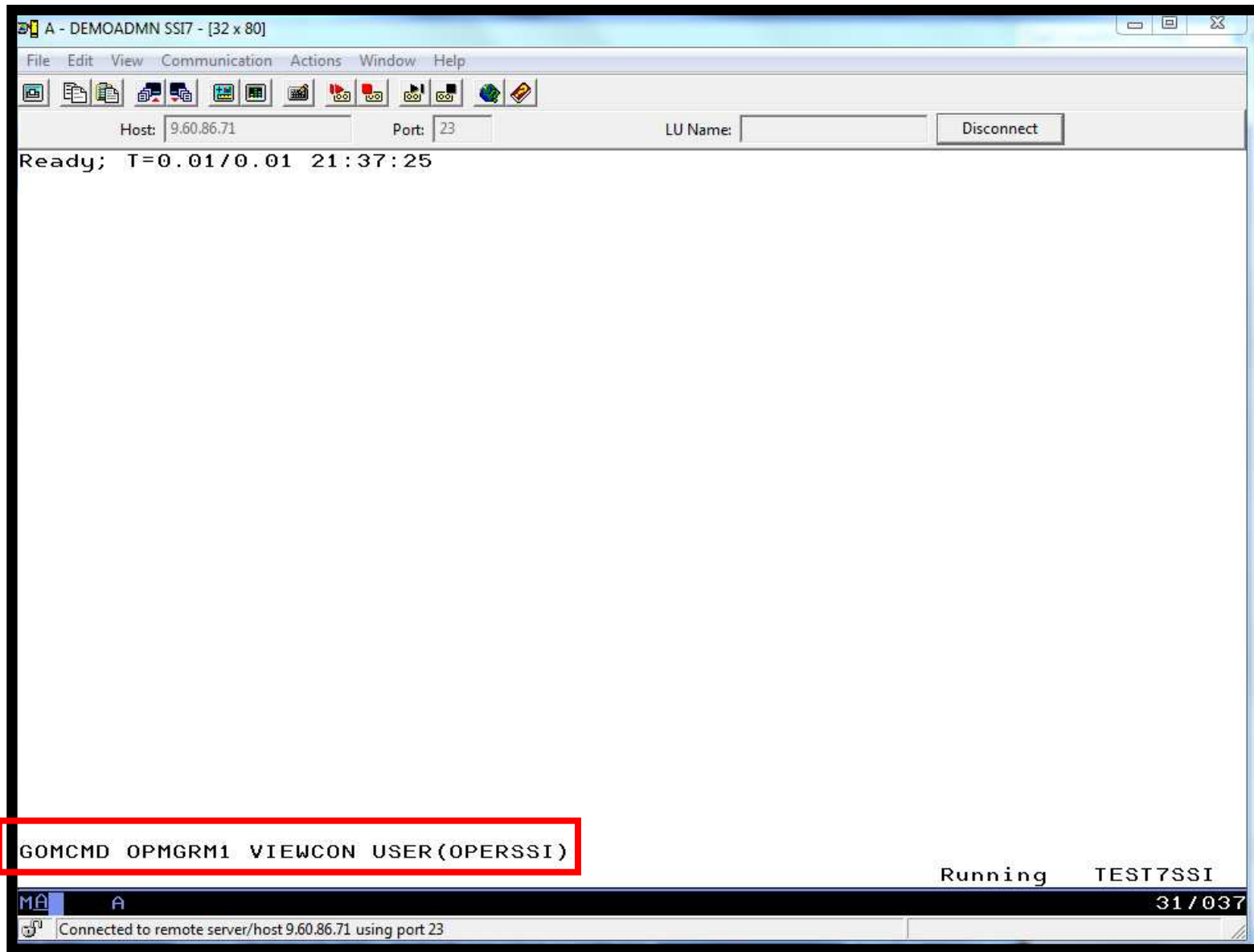
```
viewcon operssi
```

```

A - DEMOADMN SSI7 - [32 x 80]
File Edit View Communication Actions Window Help
Host: 9.60.86.71 Port: 23 LU Name: Disconnect
21:24:45 DMSDCT104S Error 3 reading file SYSTEM SEGID S2
21:24:45 DMSINS327I The installation saved segment CMSINST could not be loaded
21:24:45 DMSINS313W SYSPROF EXEC not found; notify system administrator
21:24:45 DMSOPN002E File SCOMDIR NAMES * not found
21:24:45 DMSSEC1286E Error loading SYSTEM Communications Directory, fileid = SC
21:24:45 DMSSEC639E Error in NAMEFIND routine; return code was 28
21:24:45 z/VM V6.2.0 2012-12-11 15:49
21:24:45 DMSINS100W Shared Y-STAT not available
21:24:45 * MSG FROM LNXTEST : DMSINS2563T RTNLOAD failed for VMMLIB
21:24:45 HCPGIR450W CP entered; disabled wait PSW 000A0000 800214EE
21:32:40 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
21:32:40 logoff
21:32:40 CONNECT= 00:07:53 VIRTCPUR= 000:00.00 TOTCPU= 000:00.00
21:32:40 LOGOFF AT 21:32:40 EDT TUESDAY 07/16/13
21:32:42 * -- Operations Manager VIEWCON session from DEMOADMN entered the foll
21:32:42 cp logoff
21:33:15 DMSIND2015W Unable to access system disk. Filemode S (190) not accesse
21:33:15 DMSIND2015W Unable to access the Y-disk. Filemode Y (19E) not accessed
21:33:15 DMSDCT104S Error 3 reading file SYSTEM SEGID S2
21:33:15 DMSINS327I The installation saved segment CMSINST could not be loaded
21:33:15 DMSINS313W SYSPROF EXEC not found; notify system administrator
21:33:15 DMSOPN002E File SCOMDIR NAMES * not found
21:33:15 DMSSEC1286E Error loading SYSTEM Communications Directory, fileid = SC
21:33:15 DMSSEC639E Error in NAMEFIND routine; return code was 28
21:33:15 z/VM V6.2.0 2012-12-11 15:49
21:33:15 DMSINS100W Shared Y-STAT not available
21:33:15 * MSG FROM LNXTEST : DMSINS2563T RTNLOAD failed for VMMLIB
21:33:15 HCPGIR450W CP entered; disabled wait PSW 000A0000 800214EE
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
LNXTST (Scroll)
MA A 317001
Connected to remote server/host 9.60.86.71 using port 23

```



```
A - DEMOADMN SSI7 - [32 x 80]
File Edit View Communication Actions Window Help
Host: 9.60.86.71 Port: 23 LU Name: Disconnect
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT TUESDAY 07/09/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT WEDNESDAY 07/10/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT THURSDAY 07/11/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT FRIDAY 07/12/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT SATURDAY 07/13/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT SUNDAY 07/14/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT MONDAY 07/15/13
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 EDT TUESDAY 07/16/13
00:00:00
20:58:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
20:59:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:00:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:01:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:02:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:03:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:04:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:05:15 From DEMOADM2 on TEST7SSI : COMPLETE STARTUP
21:07:15 DEMOADM2 DID NOT SUCCESSFULLY COMPLETE STARTUP
21:23:15 LNXTST DID NOT SUCCESSFULLY COMPLETE STARTUP
21:29:15 LNXTST DID NOT SUCCESSFULLY COMPLETE STARTUP
21:33:15 LNXTST DID NOT SUCCESSFULLY COMPLETE STARTUP
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
OPERSSI (Scroll)
MA A 317001
Connected to remote server/host 9.60.86.71 using port 23
```

Scenario 16: How Do You Do That?

Schedule and action in Operations Manager:

```
*DEFSCHD NAME(STARTLNX),+
*  WHEN(00:01),+
*  ACTION(STRTLNX1)
*
DEFACTN NAME(STRTLNX1),+
  COMMAND('RESUME IDLE(NOLOGON)'),+
  NEXTACTN(STRTLNX2),+
  ENV(GOM)
*
DEFACTN NAME(STRTLNX2),+
  COMMAND(CP XAUTOLOG LNXTEST),+
  ENV(SVM)
```

Scenario 16: How Do You Do That?

- Watch for successful startup of Linux guest
- If successful take no action

```
DEFRULE NAME(LNXLOGON),+  
    MATCH(*LNXTEST successfully started*),+  
    USER(LNXTEST),+  
    ACTION(NOACT)  
*  
DEFACTN NAME(NOACT)
```

Scenario 16: How Do You Do That?

- If Linux doesn't start successfully send message to central console and suspend monitor:

```
DEFIMON NAME(NOLOGON) , +
  RULE(LNXLOGON) , +
  OCCUR(1,1) , +
  ACTION(MSG2SSI2) , +
  PARM(LNXTEST)
*
SUSPEND IDLE(NOLOGON)
DEFACTN NAME(MSG2SSI2) , +
  COMMAND(CP MSGNOH OPERSSI &p did not successfully complete startup) , +
  NEXTACTN(SUSPIDLE) , +
  ENV(SVM)
*
DEFACTN NAME(SUSPIDLE) , +
  COMMAND('SUSPEND IDLE(NOLOGON)') , +
  ENV(GOM)
```

Scenario 17: Monitor Linux File System and Email When Approaching Full

- Define a situation in OMEGAMON XE on z/VM and Linux
 - Watch for file system to reach percent full threshold (85%)
 - Display a message on Linux console when threshold reached
- Define a rule in Operations Manager looking for the message
- Define an action in Operations Manager to email someone when message appears on Linux console
 - Include guest name, file system, and percent full in the message and email
- For the demo, run a script to fill up the file system and thus trigger the situation in OMEGAMON

Scenario 17: Detailed Steps

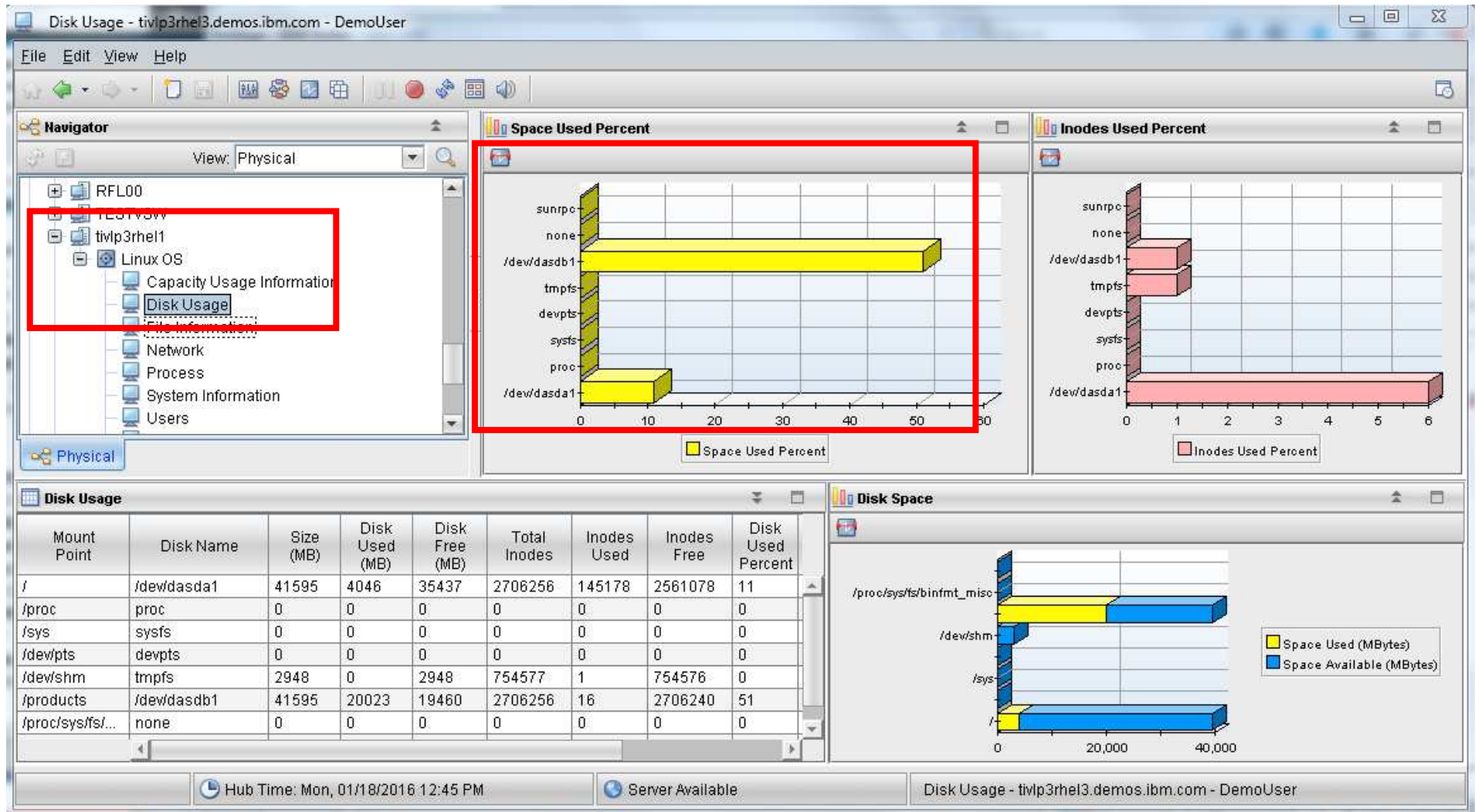
- Start the script (via OMEGAMON) that begins to write data to the file system, filling it up
- Refresh (automatically or manually) the TEPS workspace to see the file system becoming full
- From z/VM, view the console of the Linux guest to see the message displayed by the OMEGAMON situation, and the action triggered by Operations Manager

```
gomcmd opmgrml viewcon user(RHEL1)
```

or

```
viewcon RHEL1
```

- Check the user's inbox to see the resulting email



The screenshot shows the IBM z Systems Disk Usage tool interface. A 'Take Action' dialog box is open, allowing the user to execute a script on a specific system. The 'Action' section shows 'Sample Disk Full script' selected in the Name dropdown, with the command '/root/dfsfull.sh' entered in the Command field. The 'Destination Systems' list contains three entries: 'TIVLP3.RHEL3:LZ', 'TIVLP33.OMEGA.KVL:LZ', and 'tivlp3rhe1:LZ', with the last one selected. The background interface includes a Navigator pane with 'Disk Usage' selected, a 'Space Used Percent' chart, and a table of disk usage data.

Mount Point	Disk Name	Used	Free	Total	Used %	Free %	Total %	Used %	Free %	Total %
/	/dev/dasda1	0	0	0	0	0	0	0	0	0
/proc	proc	0	0	0	0	0	0	0	0	0
/sys	sysfs	0	0	0	0	0	0	0	0	0
/dev/pts	devpts	2948	0	2948	754577	1	754576	0		
/dev/shm	tmpfs									

Disk Usage - tivlp3rhe13.demos.ibm.com - DemoUser

File Edit View Help

Navigator View: Physical

- RFL00
- TESTVSW
- tivlp3rhe1
 - Linux OS
 - Capacity Usage Information
 - Disk Usage**
 - File Information
 - Network
 - Process
 - System Information
 - Users

Physical

Space Used Percent

Mount Point	Space Used Percent
tmpfs	85
none	0
/dev/dasdb1	51
devpts	0
sysfs	0
proc	0
/dev/dasda1	10

Disk Usage

Mount Point	Disk Name	Size (MB)	Disk Used (MB)	Disk Free (MB)	Total Inodes	Inodes Used	Inodes Free	Disk Use Perce
/sys	sysfs	0	0	0	0	0	0	0
/dev/pts	devpts	0	0	0	0	0	0	0
/dev/shm	tmpfs	2948	0	2948	754577	1	754576	0
/products	/dev/dasdb1	41595	20023	19460	2706256	16	2706240	51
/proc/sys/fs/...	none	0	0	0	0	0	0	0
/var/lib/nfs/rp...	sunrpc	0	0	0	0	0	0	0
/mnt/fullstmp	tmpfs	10	9	2	754577	2	754575	85

Disk Space

Hub Time: Mon, 01/18/2016 12:54 PM Server Available Disk Usage - tivlp3rhe13.demos.ibm.com

Session A - [43 x 80]

File Edit View Communication Actions Window Help

Host: 192.84.47.32 Port: 22 LU Name: Disconnect

```
id
DEMOADMN AT TIVLP3 VIA *          01/18/16 12:48:12 CST      MONDAY
Ready; T=0.01/0.01 12:48:12
```

viewcon rhel1

RUNNING TIVLP3

MA A 42/014

256 Connected through TLS1.0 to secure remote server/host 192.84.47.32 using port 22

```

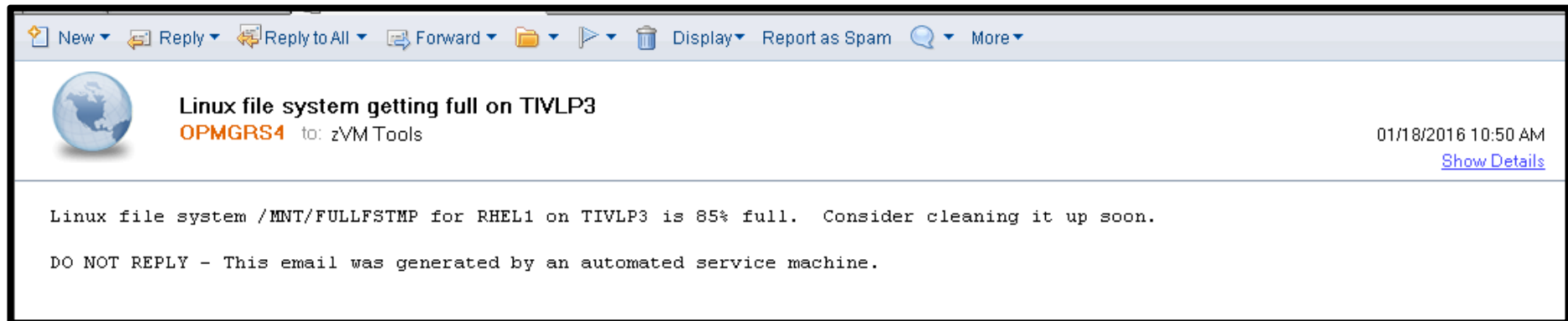
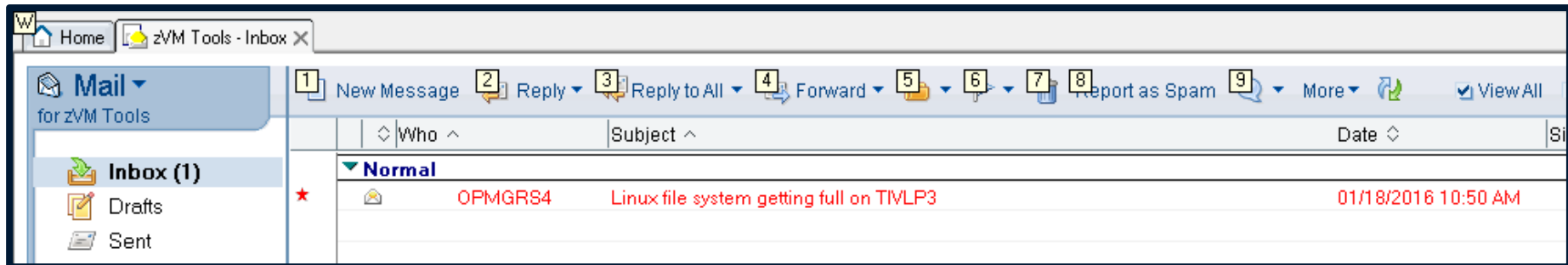
Session A - [43 x 80]
File Edit View Communication Actions Window Help
Host: 192.84.47.32 Port: 22 LU Name: Disconnect

07:26:26 Starting abrt daemon: [ OK ]
07:26:26 Starting crond: [ OK ]
07:26:26 Starting atd: [ OK ]
07:26:26 Starting Red Hat Network Daemon: [ OK ]
07:26:26 Starting rhsmcertd...[ OK ]
07:26:26 Starting up CIM server:
07:26:26 [ OK ]
07:26:26 Starting certmonger: [ OK ]
07:27:01 ***WAVE*** -> zVM User Name is: RHEL1 OS version: RHEL6
07:27:01 Wave:
07:27:01 Wave: Same machine (RHEL1), all OK
07:27:01 Wave:
07:27:01 c
07:27:01 Red Hat Enterprise Linux Server release 6.4 (Santiago)
07:27:01 Kernel 2.6.32-358.el6.s390x on an s390x
07:27:01 tivlp3rhel1 login:
07:35:11 FILESYSTEM /MNT/FULLFSTMP HAS REACHED 85 PERCENT FULL ON TIVLP3RHEL1:L
07:35:11 * -- Operations Manager Action MAILLNX scheduled for execution -- *
10:04:30 FILESYSTEM /MNT/FULLFSTMP HAS REACHED 85 PERCENT FULL ON TIVLP3RHEL1:L
10:04:30 * -- Operations Manager Action MAILLNX scheduled for execution -- *
15:53:40 sclp_config: cpu capability changed.
00:00:00 HCPMID6001I TIME IS 00:00:00 CST WEDNESDAY 01/13/16
00:00:00
12:47:18 sclp_config: cpu capability changed.
13:20:12 sclp_config: cpu capability changed.
00:00:00 HCPMID6001I TIME IS 00:00:00 CST THURSDAY 01/14/16
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 CST FRIDAY 01/15/16
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 CST SATURDAY 01/16/16
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 CST SUNDAY 01/17/16
00:00:00
00:00:00 HCPMID6001I TIME IS 00:00:00 CST MONDAY 01/18/16
00:00:00
11:36:49 sclp_config: cpu capability changed.
12:27:12 sclp_config: cpu capability changed.
12:49:32 FILESYSTEM /MNT/FULLFSTMP HAS REACHED 85 PERCENT FULL ON TIVLP3RHEL1:L
12:49:32 * -- Operations Manager Action MAILLNX scheduled for execution -- *
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL

RHEL1 (Scroll)

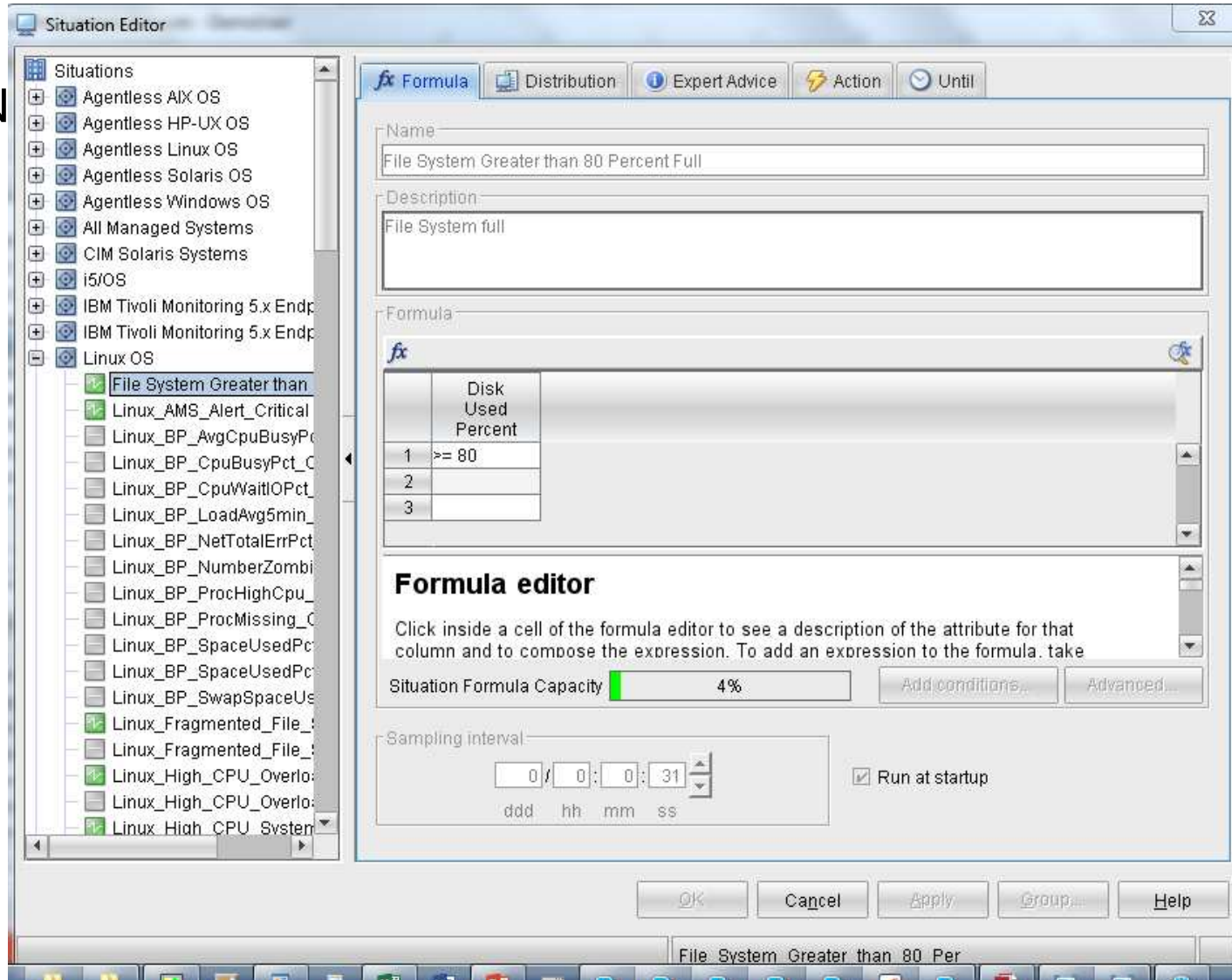
```

MA A 256 Connected through TLS1.0 to secure remote server/host 192.84.47.32 using port 22 42/001



Scenario 17: How Do You Do That?

Situation in OMEGAMON XE on z/VM and Linux



Scenario 17: How Do You Do That?

Situation in OMEGAMON XE on z/VM and Linux

The screenshot displays the 'Situation Editor' window. On the left, a tree view under 'Situations:' lists various OS types and specific monitoring situations. The 'Linux OS' category is expanded, showing several situations, with 'File System Greater than' selected. The right pane shows the configuration for this situation. It has tabs for 'Formula', 'Distribution', 'Expert Advice', 'Action', and 'Until'. The 'Action' tab is active, showing 'System Command' selected. The 'System Command' field contains the text: `{Mount_Point} has reached &{KLZ_Disk.Disk_Used_Percent} percent full on &{KLZ_Disk.System_Name}`. Below this, there are options for 'If the condition is true for more than one monitored item:' (radio buttons for 'Only take action on first item' and 'Take action on each item') and 'Where should the Action be executed (performed):' (radio buttons for 'Execute the Action at the Managed System (Agent)' and 'Execute the Action at the Managing System (TEMS)'). At the bottom, there are options for 'If the condition stays true over multiple intervals:' (radio buttons for 'Don't take action twice in a row (wait until situation goes false then true again)' and 'Take action in each interval').

Scenario 17: How Do You Do That?

Rule and action in Operations Manager:

*

* Demo scenario of Linux file system filling up and OMEGAMON

* Notifying Operations Manager

```
DEFRULE NAME(LNXFULL),+
  USER(RHEL1),+
  MATCH(*FILESYSTEM /MNT/FULLFSTMP*PERCENT FULL ON TIVLP3*),+
  ACTION(MAILLNX),+
  PARM(LNXFULL),+
  LIMIT(3,001-00:00:00)
*
```

```
DEFACTN NAME(MAILLNX),+
  COMMAND(EXEC SMTPMSG zvmtools at us.ibm.com &p &s &u &1 &4),+
  ENV(SVM)
```

Scenario 18: Send Alerts to Other Tools via Syslog

- Monitor the console of a Linux guest for an error message
 - For demo purposes it must contain the word “syslog”
- When message is received, send it to a central syslog processor
 - Could be on or off-platform

Scenario 18: Detailed Steps

- Send an “error” message to a Linux guest

```
tell slesb109 this is an error message to send to demo syslog processor
```

- View the console of the Linux guest

```
viewcon slesb109
```

- Notice the message added by Operations Manager indicating the action SENDSYSL was triggered

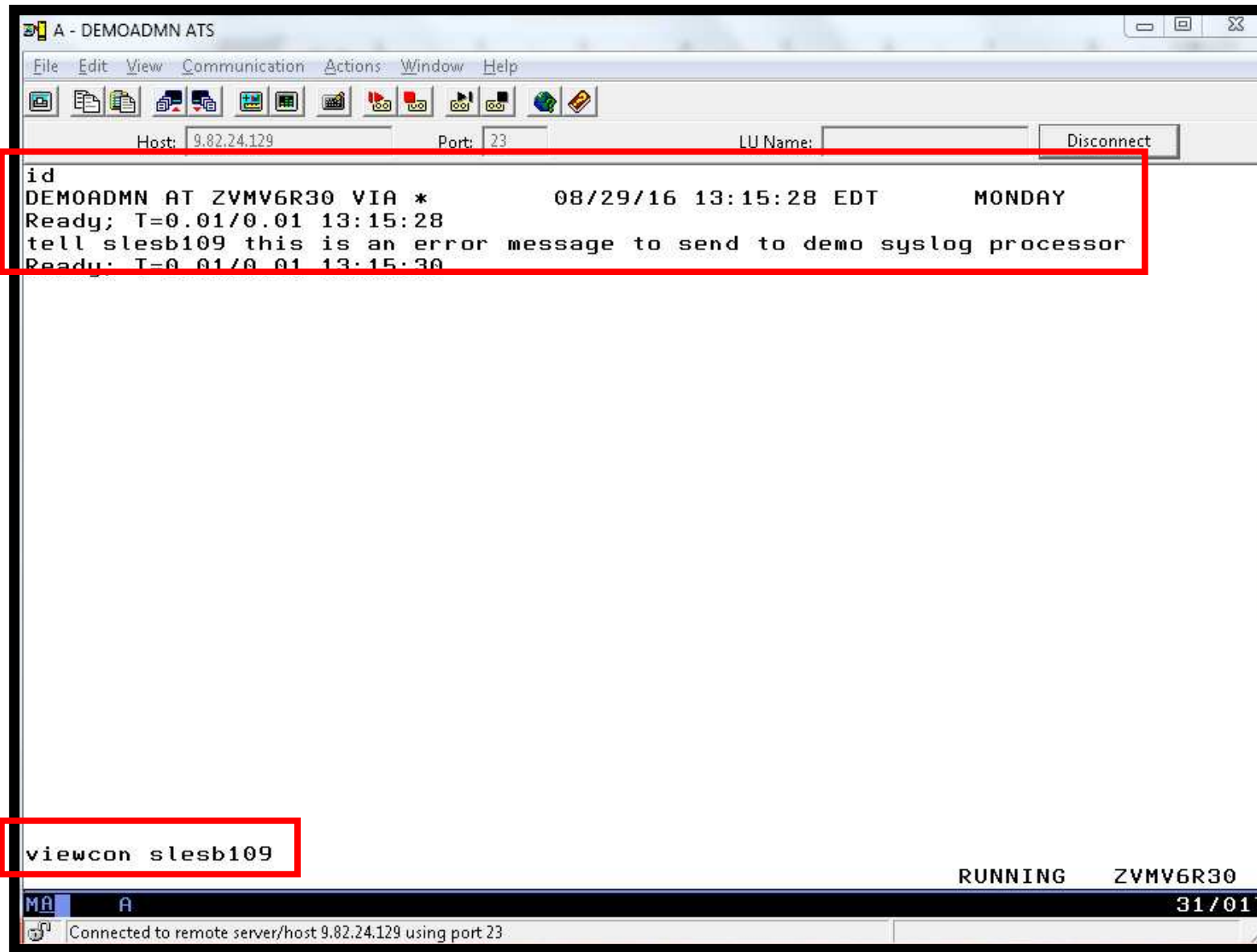
- Using WinSCP login to the Linux guest that is being used as central syslog processor

- Navigate to the location of the log file

```
/ <root>/var/log
```

- Open the following log file and notice the message you sent has been added

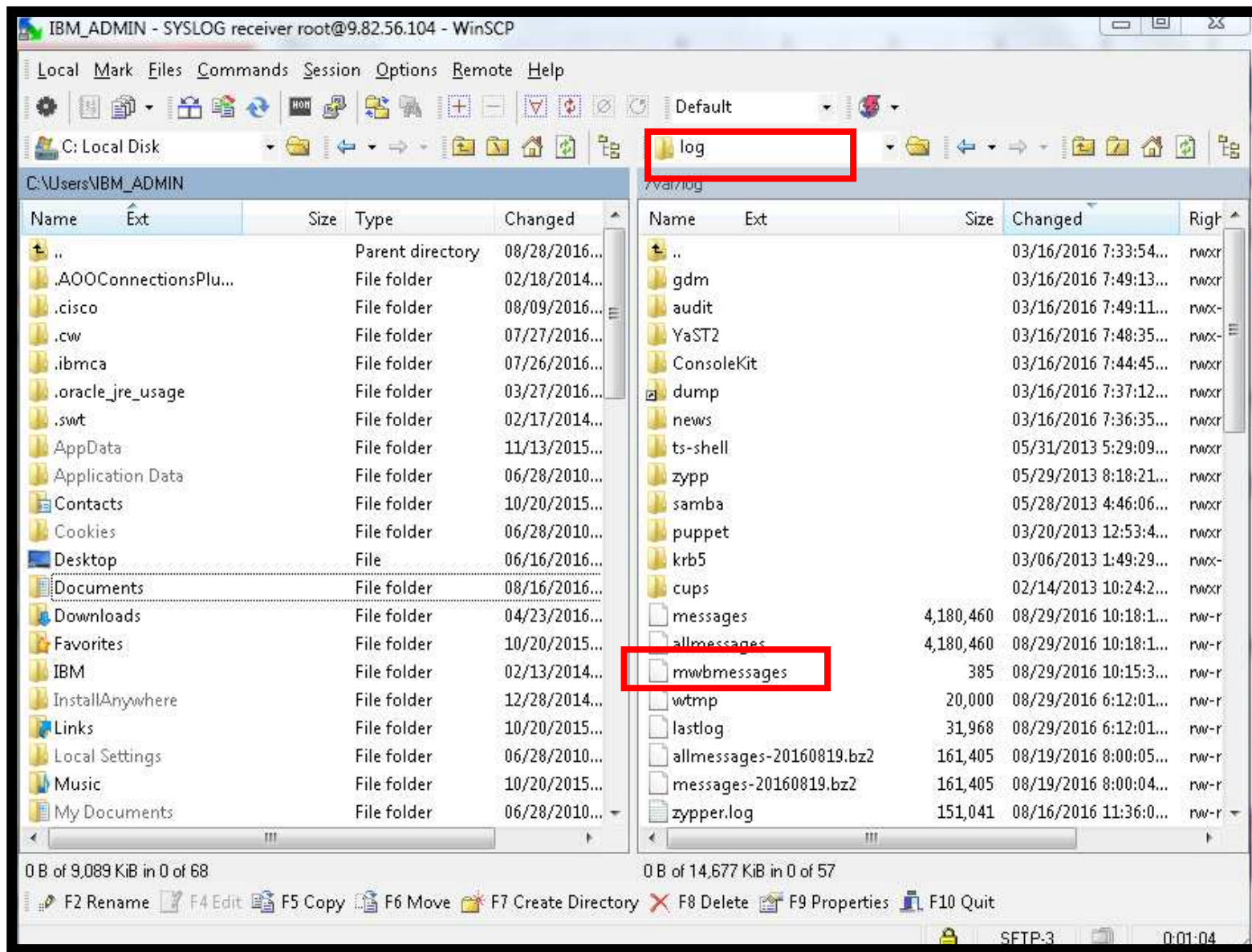
```
mwbmessages
```

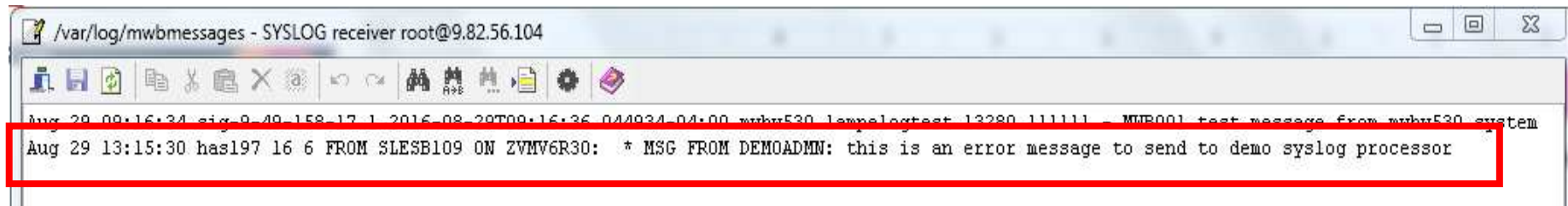


```

A - DEMOADMN ATS
File Edit View Communication Actions Window Help
Host: 9.82.24.129 Port: 23 LU Name: Disconnect
13:15:04 -rw----- 1 root root 17815 Apr 22 14:18 .bash_history
13:15:04 drwxr-xr-x 3 root root 4096 Oct 24 2014 .cache
13:15:04 drwxr-xr-x 14 root root 12288 Sep 20 2013 .coi
13:15:04 drwxr-xr-x 2 root root 4096 Jan 25 2012 .config
13:15:04 drwx----- 3 root root 4096 Aug 16 2012 .dbus
13:15:04 -rw-r--r-- 1 root root 1332 Nov 23 2005 .exrc
13:15:04 drwx----- 3 root root 4096 Oct 26 2014 .gconf
13:15:04 drwx----- 2 root root 4096 Oct 26 2014 .gconfd
13:15:04 drwx----- 4 root root 4096 Oct 24 2014 .gnome2
13:15:04 drwx----- 2 root root 4096 Aug 16 2012 .gnome2_private
13:15:04 drwx----- 2 root root 4096 Oct 6 2014 .gnupg
13:15:04 drwxr-xr-x 3 root root 4096 Jul 26 2012 .java
13:15:04 -rw----- 1 root root 1403 Oct 26 2014 .recently-used.xbel
13:15:04 drwx----- 2 root root 4096 Apr 22 14:16 .ssh
13:15:04 -rw----- 1 root root 410768 Aug 25 17:06 .suse_register.log
13:15:04 drwxr-xr-x 5 root root 4096 Jul 31 2012 .swdis
13:15:04 -rw----- 1 root root 8444 Dec 13 2013 .viminfo
13:15:04 drwxr-xr-x 2 root root 4096 Oct 6 2014 .vnc
13:15:04 drwxr-xr-x 2 root root 4096 Oct 6 2014 .zypp
13:15:04 drwxr-xr-x 3 root root 4096 Jul 26 2012 InstallShield
13:15:04 -rw-r--r-- 1 root root 91705 Oct 6 2014 autoinst.xml
13:15:04 drwxr-xr-x 2 root root 4096 May 5 2010 bin
13:15:04 -rw-r--r-- 1 root root 0 Aug 16 2012 de_security_refreshDB.log
13:15:04 drwxr-xr-x 6 root root 4096 Oct 6 2014 inst-sys
13:15:04 drwxr-xr-x 2 root root 4096 Sep 19 2013 updiags
13:15:04 hasl109:~ #
13:15:30 * MSG FROM DEMOADMN: this is an error message to send to demo syslog
13:15:30 * -- Operations Manager Action SENDSYSL scheduled for execution -- *
PF01= SCROLL PF02= PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
SLESB109-ZVMV6R30 (Scroll)
MA A 31/001
Connected to remote server/host 9.82.24.129 using port 23

```





A terminal window titled "/var/log/mwbmessages - SYSLOG receiver root@9.82.56.104" displays two lines of syslog output. The first line is partially visible and contains a timestamp and a message ID. The second line is highlighted with a red box and reads: "Aug 29 13:15:30 has197 16 6 FROM SLESB109 ON ZVMV6R30: * MSG FROM DEMOADMN: this is an error message to send to demo syslog processor".

```
Aug 29 09:16:34 sig 0 49 158 17 1 2016 08 29T09:16:36 044934 04:00 mwb530 lewpa1ogtest 13280 111111 - MWB001 test message from mwb530 system
Aug 29 13:15:30 has197 16 6 FROM SLESB109 ON ZVMV6R30: * MSG FROM DEMOADMN: this is an error message to send to demo syslog processor
```


Scenario 18: How Do You Do That?

IP Connection, rule and action in Operations Manager:

* Define TCP/IP connection to send data to Linux guest in syslog format

*

```
DEFIPCS NAME TO104SYS +
```

```
  USER TCPIP +
```

```
  APPL GOMRSGW +
```

```
  ADDR 9.82.56.104 +
```

```
  PORT 514 +
```

```
  PARM UDP
```

*

* Find message to send to Linux guest as syslog data

```
DEFRULE NAME SYSMMSG +
```

```
  MATCH '*demo syslog*' +
```

```
  ACTION SENDSYSL +
```

```
  PARM TO104SYS
```

*

* Send data to syslog receiver

```
DEFACTN NAME SENDSYSL +
```

```
  COMMAND 'EXEC SENDLOG &p From &u on &sysname: &t' +
```

```
  ENV LVM
```

Scenario 18: How Do You Do That?

SENDLOG EXEC:

```
/* Convert message from EBCDIC to ASCII and send as SYSLOG */  
Trace 0
```

```
Address Command
```

```
Parse Arg Dest MsgText
```

```
'EXEC EBC2ASC C0037to0819' 16 6 MsgText
```

```
Parse Pull AsciiText
```

```
Say 'This is converted text:' AsciiText
```

```
'GOMCMD OPMGRM1 CMDIPCS NAME 'Dest' COMMAND SEND REXXVAR AsciiText'
```

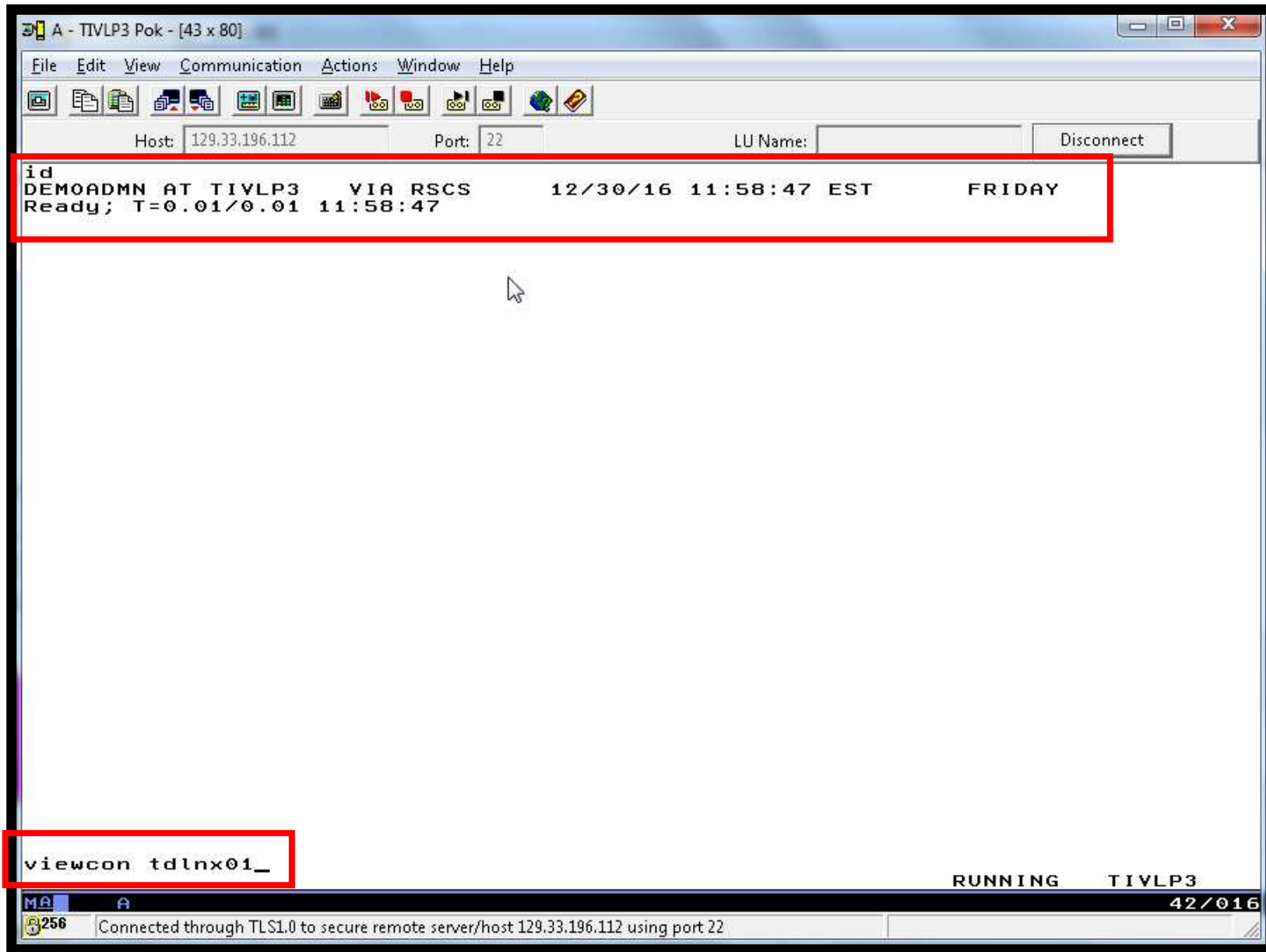
Sample EBC2ASC
EXEC shipped with
Operations Mgr

Scenario 19: High Availability Environment – Restart a Linux Guest on another LPAR if Local LPAR Too Busy

- Also known as “Dead Guest Relocation”
- Define a situation in OMEGAMON XE on z/VM and Linux
 - Watch for LPAR CPU utilization to go above a threshold (5% for demo purposes)
 - Send a message to Operations Manager when threshold reached
- Define a rule in Operations Manager looking for the message
- Define an action in Operations Manager to shutdown a guest on the local system
- Define rule in Operations Manager to watch for shutdown complete messages
- Define action in Operations Manager to start a (similar) guest on remote system

Scenario 19: Detailed Steps

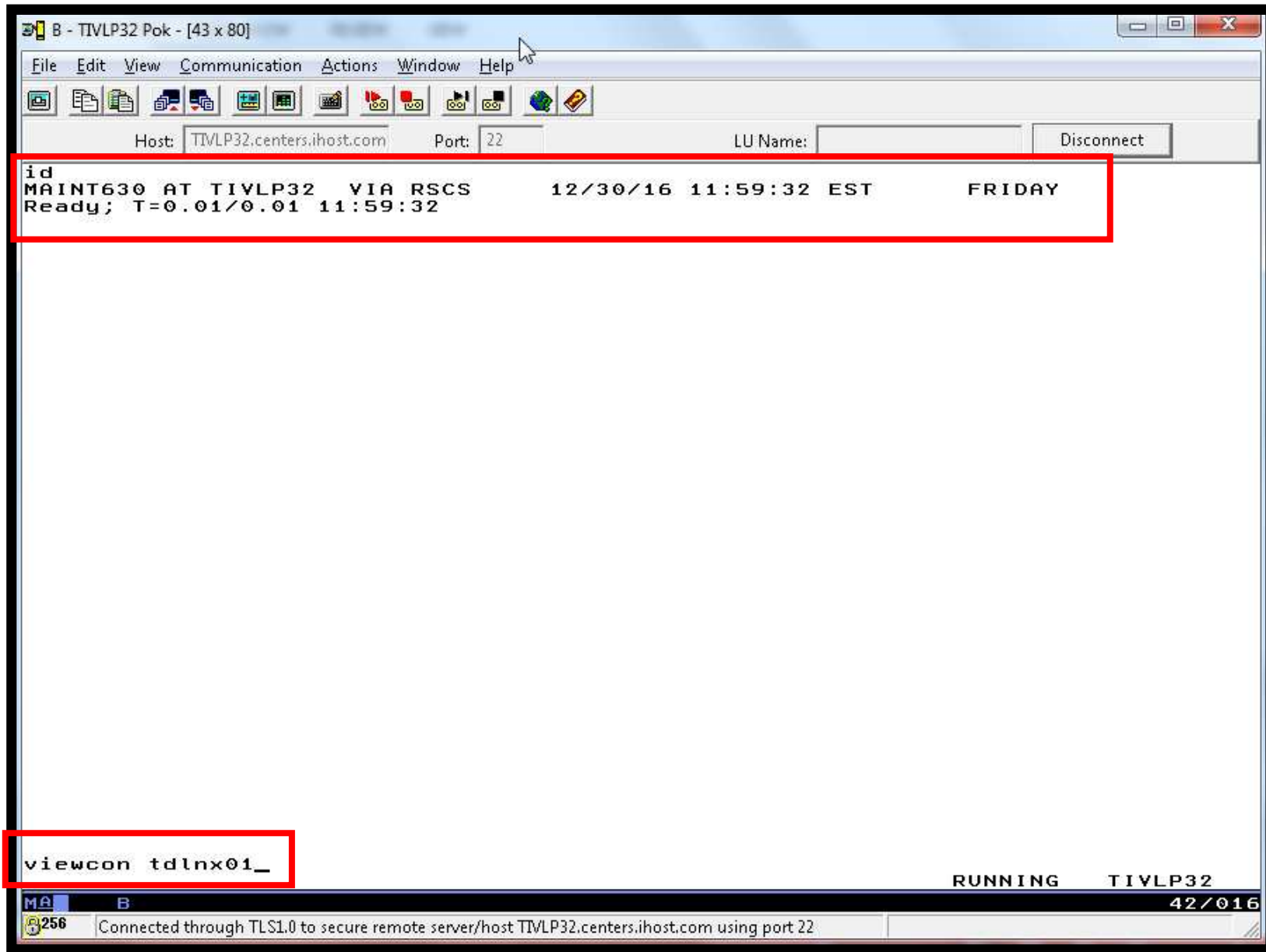
- Start the situation in OMEGAMON
- Watch console of Linux guest on local system
`viewcon tdlinx01`
- When guest is shutting down, also logon to remote system and view console of the Linux guest that will start there:
`viewcon tdlinx01`
- Watch Linux guest start
- Stop situation in OMEGAMON



```

A - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
11:06:05 stop on panic configured.
11:06:05 Sending all processes the TERM signal... [ OK ]
11:06:07 Sending all processes the KILL signal... [ OK ]
11:06:07 Saving random seed: [ OK ]
11:06:07 Turning off quotas: [ OK ]
11:06:07 init: Re-executing /sbin/init
11:06:07 Please stand by while rebooting the system...
11:06:07 HCPGIR450W CP entered; disabled wait PSW 00020001 80000000 00000000 00
11:06:07 CONNECT= 00:08:36 VIRTCPU= 000:02:57 TOTCPU= 000:02:78
11:06:07 LOGOFF AT 11:06:07 EST FRIDAY 12/30/16 AFTER SIGNAL
11:06:07 * -- Operations Manager Action LNXRELO3 scheduled for execution -- *
11:06:07 * -- Operations Manager Action LNXRELO4 scheduled for execution -- *
11:06:07 * -- Operations Manager Action LNXRELO5 scheduled for execution -- *
11:06:07 CON FILE 0085 SENT TO MAINT630 RDR AS 1681 RECS 0066 CPY 001 T NOH
11:06:10 * -- Operations Manager Action LNXRELO6 scheduled for execution -- *
11:14:58 User TDLNX01 has been relocated from TIVLP32 to TIVLP3
11:14:58 qeth 0.0.0ac0: The qeth device driver failed to recover an error on th
11:14:58 qeth: irb 00000000: 00 c2 40 17 01 3a d0 38 0e 02 00 00 00 80 00 00 .
11:14:58 qeth: irb 00000010: 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth: sense data 00000000: 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth: sense data 00000010: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth 0.0.0ac0: The qeth device driver failed to recover an error on th
11:14:58 qeth: irb 00000000: 00 c2 40 17 01 3a d0 38 0e 02 00 00 00 80 00 00 .
11:14:58 qeth: irb 00000010: 01 02 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth: irb 00000020: 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth: irb 00000030: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .
11:14:58 qeth 0.0.0ac0: A recovery process has been started for the device
11:14:58 qdio: 0.0.0ac2 OSA on SC 3 using AI:1 QEBSM:0 PCI:1 TDD:1 SIGA:RW AO
11:14:58 qeth 0.0.0ac0: Device is a Guest LAN QDIO card (level: V631)
11:14:59 with link type GuestLAN QDIO (portname: SMALLVSW)
11:14:59 qeth 0.0.0ac0: Hardware IP fragmentation not supported on eth0
11:14:59 qeth 0.0.0ac0: Inbound source MAC-address not supported on eth0
11:14:59 qeth 0.0.0ac0: VLAN enabled
11:14:59 qeth 0.0.0ac0: Multicast enabled
11:14:59 qeth 0.0.0ac0: IPV6 enabled
11:14:59 qeth 0.0.0ac0: Broadcast enabled
11:14:59 qeth 0.0.0ac0: Using SW checksumming on eth0.
11:14:59 qeth 0.0.0ac0: Outbound TSO not supported on eth0
11:14:59 qeth 0.0.0ac0: Device successfully recovered!
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
TDLNX01-TIVLP3 (Scroll)
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

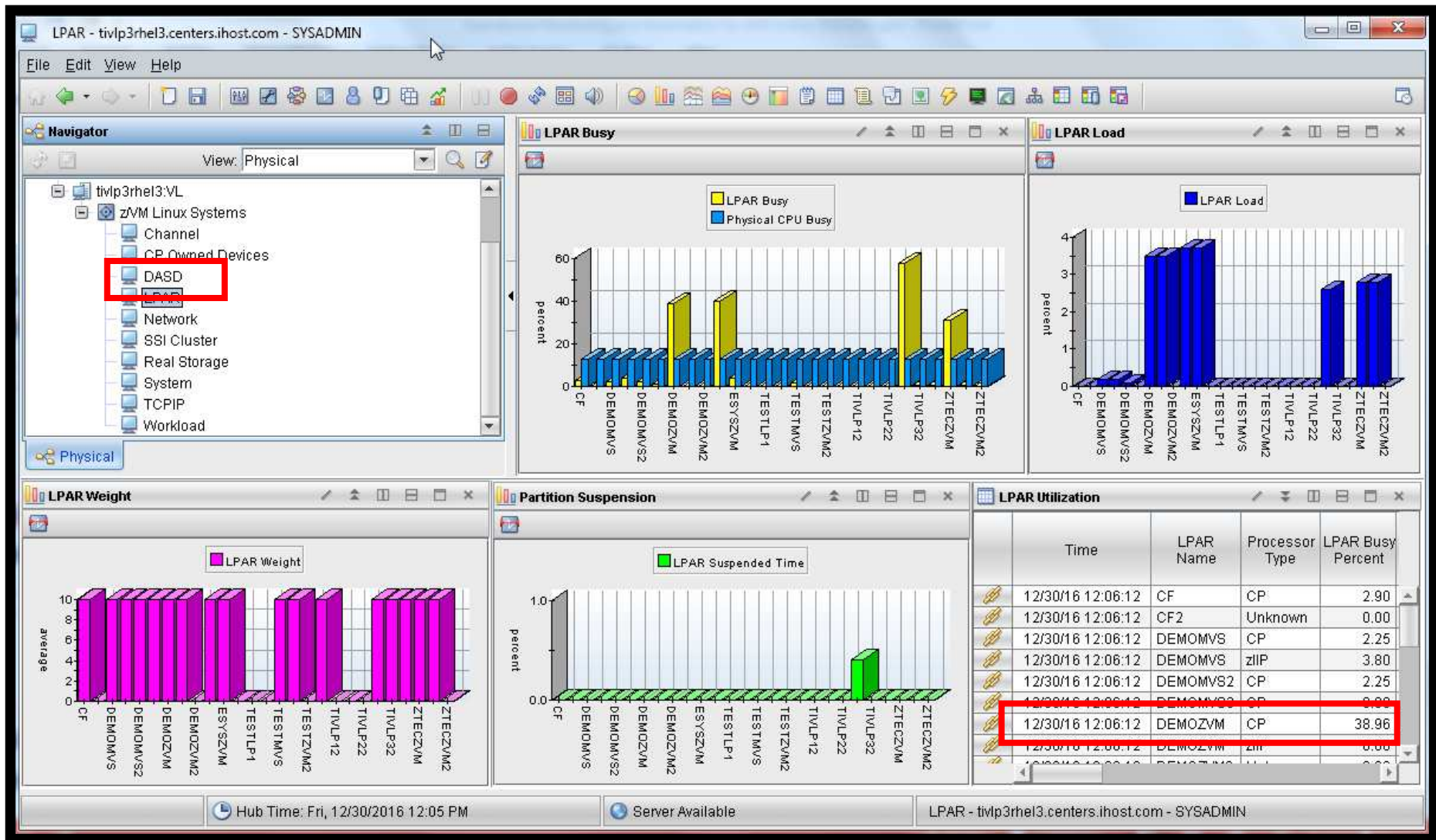
```



```

B - TIVLP32 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: TIVLP32.centers.ihost.com Port: 22 LU Name: Disconnect
11:06:12 Calling the system activity data collector (sadc)...
11:06:12 WAVE: -> zVM User Name is: TDLNX01 OS version: RHEL6
11:06:12 WAVE:
11:06:12 WAVE: Same machine (TDLNX01), all OK
11:06:12 WAVE:
11:06:12 Bringing up loopback interface: [ OK ]
11:06:12 Bringing up interface eth0: Determining if ip address 10.20.30.3 is a
11:06:14 [ OK ]
11:06:14 Starting auditd:
11:06:14 [ OK ]
11:06:14 Starting portreserve: [ OK ]
11:06:14 Starting system logger: [ OK ]
11:06:14 Starting rpcbind: [ OK ]
11:06:14 Starting NFS statd: [ OK ]
11:06:14 Starting kdump:[FAILED]
11:06:14 Starting system message bus:
11:06:14 [ OK ]
11:06:14 Starting cups:
11:06:15 [ OK ]
11:06:15 Mounting filesystems: [ OK ]
11:06:15 Starting HAL daemon: [ OK ]
11:06:15 Retrigger failed udev events[ OK ]
11:06:15 Loading autofs4: [ OK ]
11:06:16 Starting automount: [ OK ]
11:06:16 Starting sshd:
11:06:16 [ OK ]
11:06:16 Starting cpi: [ OK ]
11:06:16 Starting postfix:
11:06:16 [ OK ]
11:06:16 Starting abrt daemon: [ OK ]
11:06:16 Starting crond: [ OK ]
11:06:16 Starting atd: [ OK ]
11:06:16 Starting rhsmcertd...
11:06:16 [ OK ]
11:06:16 Starting certmonger: [ OK ]
11:06:16 c
11:06:16 Red Hat Enterprise Linux Server release 6.5 (Santiago)
11:06:16 Kernel 2.6.32-431.el6.s390x on an s390x
11:06:16 TDLNX01 login:
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
-
TDLNX01-TIVLP32 (Scroll)
MA B 42/001
256 Connected through TLS1.0 to secure remote server/host TIVLP32.centers.ihost.com using port 22

```

The screenshot displays the SysAdmin interface for LPAR management. The main window is titled "LPAR - tivlp3rhel3.centers.ihost.com - SYSADMIN". The interface includes a Navigator pane on the left, several monitoring charts, and a table of LPAR utilization.

Navigator: Shows a tree view of the system structure. A context menu is open over the "zVM Linux Systems" folder, with the "Situations..." option highlighted in a red box. Other menu items include Workspace, Take Action..., Link To..., Launch..., Show Navigator List..., Split vertically, Split horizontally, Print Preview..., Print..., Find..., and Properties...

LPAR Busy: A bar chart showing the percentage of LPARs that are busy (yellow bars) and physical CPU busy (blue bars). The y-axis is labeled "percent" and ranges from 0 to 60. The x-axis lists various LPARs and processors.

LPAR Load: A bar chart showing the LPAR load percentage (blue bars). The y-axis is labeled "percent" and ranges from 0 to 4. The x-axis lists various LPARs and processors.

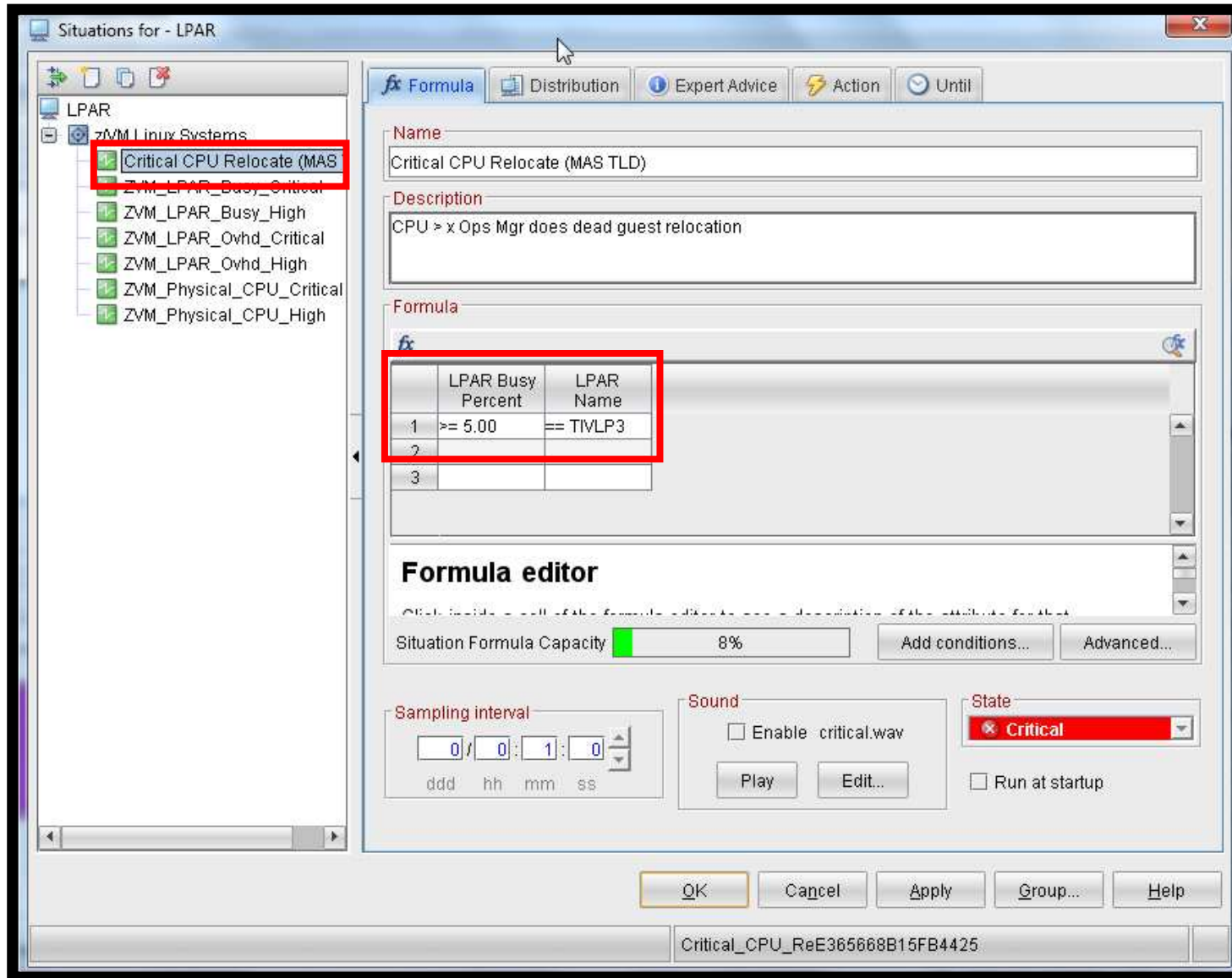
LPAR Weight: A bar chart showing the average weight of LPARs (pink bars). The y-axis is labeled "average" and ranges from 0 to 10. The x-axis lists various LPARs and processors.

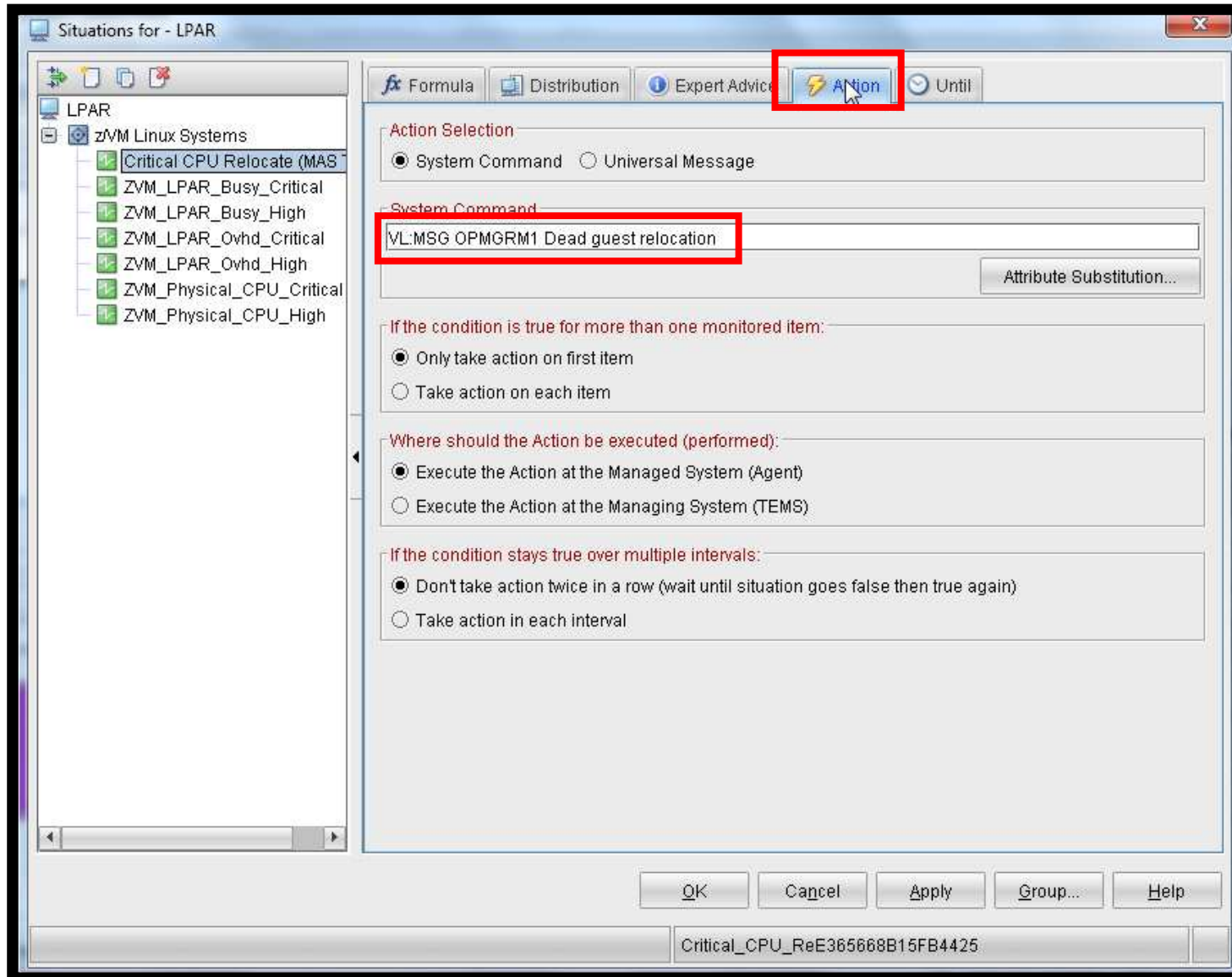
Partition Suspension: A bar chart showing the percentage of LPARs that are suspended (green bars). The y-axis is labeled "percent" and ranges from 0.0 to 1.0. The x-axis lists various LPARs and processors.

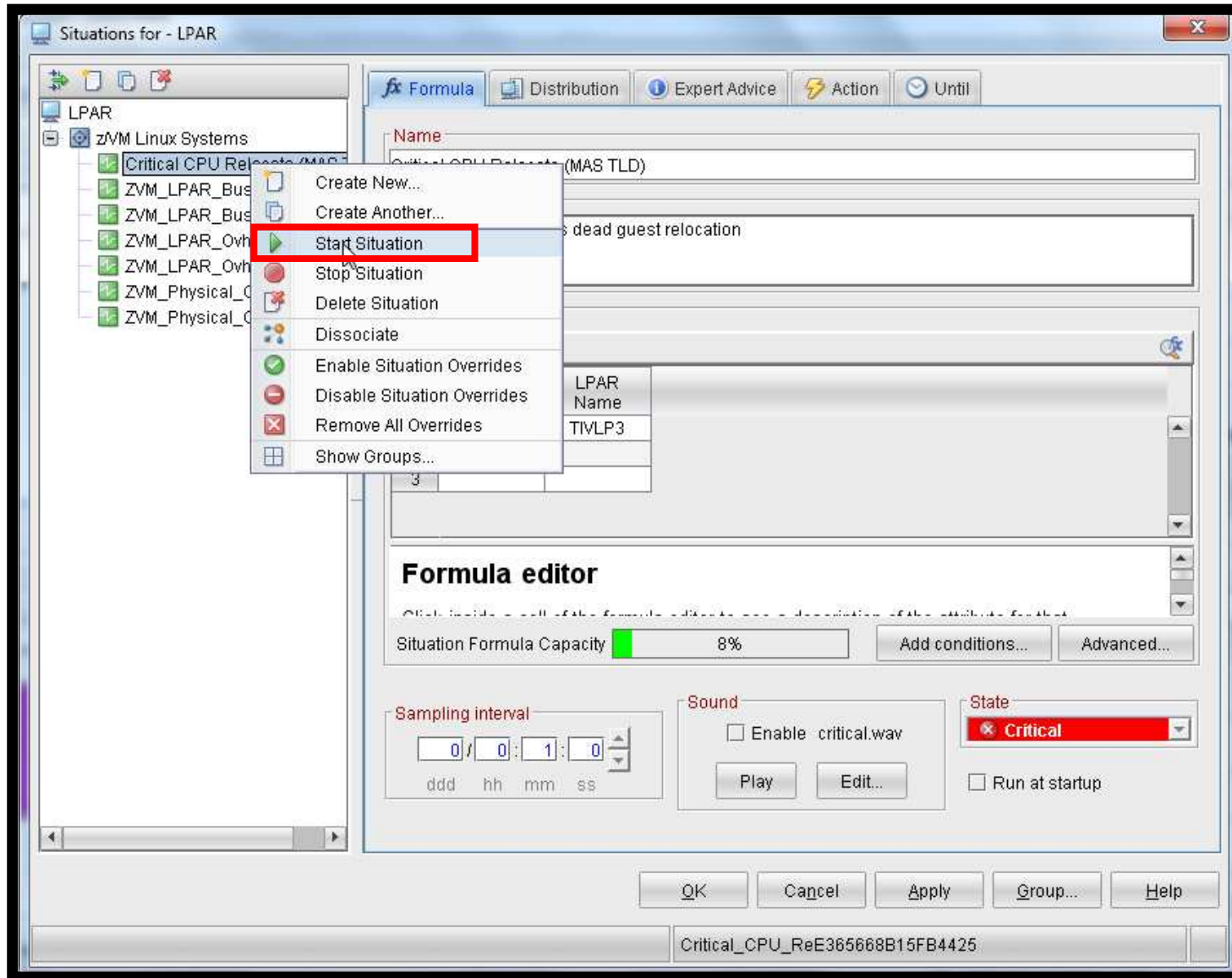
LPAR Utilization: A table showing the utilization of LPARs. The columns are Time, LPAR Name, Processor Type, and LPAR Busy Percent.

Time	LPAR Name	Processor Type	LPAR Busy Percent
12/30/16 12:06:12	CF	CP	2.90
12/30/16 12:06:12	CF2	Unknown	0.00
12/30/16 12:06:12	DEMOMVS	CP	2.25
12/30/16 12:06:12	DEMOMVS	zIIP	3.80
12/30/16 12:06:12	DEMOMVS2	CP	2.25
12/30/16 12:06:12	DEMOMVS3	CP	0.90
12/30/16 12:06:12	DEMOZVM	CP	38.96
12/30/16 12:06:12	DEMOZVM	zIIP	0.00

At the bottom of the interface, there is a status bar showing "Hub Time: Fri, 12/30/2016 12:06 PM", "Server Available", and "LPAR - tivlp3rhel3.centers.ihost.com - SYSADMIN".







```

A - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect
11:14:59 qeth 0.0.0ac0: Using SW checksumming on eth0.
11:14:59 qeth 0.0.0ac0: Outbound 150 not supported on eth0
11:14:59 qeth 0.0.0ac0: Device successfully recovered!
12:08:52 Stopping certmonger:
12:08:52 [ OK ]
12:08:52 Stopping rhsmcertd...
12:08:52 [ OK ]
12:08:52 Stopping atd:
12:08:52 [ OK ]
12:08:52 Stopping cups:
12:08:52 [ OK ]
12:08:52 Stopping abrt daemon:
12:08:52 [ OK ]
12:08:52 Stopping sshd:
12:08:52 [ OK ]
12:08:52 Shutting down postfix: [ OK ]
12:08:52 Stopping crond:
12:08:53 [ OK ]
12:08:53 Stopping automount:
12:08:56 [ OK ]
12:08:56 Stopping HAL daemon: [ OK ]
12:08:56 Stopping block device availability: Deactivating block devices:
12:08:56 [ OK ]
12:08:56 Stopping system message bus: [ OK ]
12:08:56 Stopping rpcbind:
12:08:56 [ OK ]
12:08:56 Stopping auditd: type=1305 audit(1483117736.099:424): audit_pid=0 old=
12:08:56 [ OK ]
12:08:56 type=1305 audit(1483117736.199:425): audit_enabled=0 old=1 audid=429496
12:08:56 Shutting down system logger:
12:08:56 [ OK ]
12:08:56 Shutting down interface eth0: [ OK ]
12:08:56 Shutting down loopback interface:
12:08:56 [ OK ]
12:08:56 stop on panic configured.
12:08:56 Sending all processes the TERM signal... [ OK ]
12:08:58 Sending all processes the KILL signal... [ OK ]
12:08:58 Saving random seed: [ OK ]
12:08:58 Turning off quotas: [ OK ]
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
TDLNX01-TIVLP3
42/001
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22

```

```

A - TIVLP3 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: 129.33.196.112 Port: 22 LU Name: Disconnect

12:08:52 Stopping cups:
12:08:52 [ OK ]
12:08:52 Stopping abrt daemon:
12:08:52 [ OK ]
12:08:52 Stopping sshd:
12:08:52 [ OK ]
12:08:52 Shutting down postfix: [ OK ]
12:08:52 Stopping crond:
12:08:53 [ OK ]
12:08:53 Stopping automount:
12:08:56 [ OK ]
12:08:56 Stopping HAL daemon: [ OK ]
12:08:56 Stopping block device availability: Deactivating block devices:
12:08:56 [ OK ]
12:08:56 Stopping system message bus: [ OK ]
12:08:56 Stopping rpcbind:
12:08:56 [ OK ]
12:08:56 Stopping auditd: type=1305 audit(1483117736.099:424): audit_pid=0 old=
12:08:56 [ OK ]
12:08:56 type=1305 audit(1483117736.199:425): audit_enabled=0 old=1 audid=429496
12:08:56 Shutting down system logger:
12:08:56 [ OK ]
12:08:56 Shutting down interface eth0: [ OK ]
12:08:56 Shutting down loopback interface:
12:08:56 [ OK ]
12:08:56 stop on panic configured.
12:08:56 Sending all processes the TERM signal... [ OK ]
12:08:58 Sending all processes the KILL signal... [ OK ]
12:08:58 Saving random seed: [ OK ]
12:08:58 Turning off quotas: [ OK ]
12:08:58 init: Re-executing /sbin/init
12:08:58 Please stand by while rebooting the system...
12:08:58 HCPGIR450W CP entered; disabled wait PSW 00020001 80000000 00000000 00
12:08:58 CONNECT= 01:02:48 VIRTCPU= 000:03.57 TOTCPU= 000:03.76
12:08:58 LOGOFF AT 12:08:58 EST FRIDAY 12/30/16 AFTER SIGNAL
12:08:58 * -- Operations Manager Action LNXREL03 scheduled for execution -- *
12:08:58 * -- Operations Manager Action LNXREL04 scheduled for execution -- *
12:08:58 CON FILE 0089 SENT TO MAINT630 RDR AS 1685 RECS 0066 CPY 001 T NOH
12:09:01 * -- Operations Manager Action LNXREL05 scheduled for execution -- *

PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
-
TDLNX01-TIVLP3 (Scroll)
MA A
256 Connected through TLS1.0 to secure remote server/host 129.33.196.112 using port 22 42/001
  
```

```

B - TIVLP32 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: TIVLP32.centers.ihost.com Port: 22 LU Name: Disconnect
11:06:16 c
11:06:16 Red Hat Enterprise Linux Server release 6.5 (Santiago)
11:06:16 Kernel 2.6.32-431.el6.s390x on an s390x
11:06:16 TDLNX01 login:
12:09:01 NIC 0AC0 is created; devices 0AC0-0AC2 defined
12:09:01 CPSWS2858I TDLNX01 connection to SYSTEM SMALLVSW has been updated by
12:09:01 Command complete
12:09:01 HCPCPL2788E NIC 0AC0 not connected; already connected to VSWITCH SYSTE
12:09:01 Booting default (linux-2.6.32-431.el6.s390x)...
12:09:01 Initializing cgroup subsys cpuset
12:09:01 Initializing cgroup subsys cpu
12:09:01 Linux version 2.6.32-431.el6.s390x (mockbuild@s390-012.build.bos.redha
12:09:01 setup: Linux is running as a z/VM guest operating system in 64-bit mod
12:09:01 crashkernel=auto resulted in zero bytes of reserved memory.
12:09:01 Zone PFN ranges:
12:09:01 DMA 0x00000000 -> 0x00008000
12:09:01 Normal 0x00008000 -> 0x00008000
12:09:01 Movable zone start PFN for each node
12:09:01 early_node_map[1] active PFN ranges
12:09:01 0: 0x00000000 -> 0x00004000
12:09:01 PERCPU: Embedded 12 pages/cpu @0000000002515000 s18944 r8192 d22016 u6
12:09:01 pcpu-alloc: s18944 r8192 d22016 u65536 alloc=16*4096
12:09:01 pcpu-alloc: [0] 00 [0] 01 [0] 02 [0] 03 [0] 04 [0] 05 [0] 06 [0] 07
12:09:01 pcpu-alloc: [0] 08 [0] 09 [0] 10 [0] 11 [0] 12 [0] 13 [0] 14 [0] 15
12:09:02 pcpu-alloc: [0] 16 [0] 17 [0] 18 [0] 19 [0] 20 [0] 21 [0] 22 [0] 23
12:09:02 pcpu-alloc: [0] 24 [0] 25 [0] 26 [0] 27 [0] 28 [0] 29 [0] 30 [0] 31
12:09:02 pcpu-alloc: [0] 32 [0] 33 [0] 34 [0] 35 [0] 36 [0] 37 [0] 38 [0] 39
12:09:02 pcpu-alloc: [0] 40 [0] 41 [0] 42 [0] 43 [0] 44 [0] 45 [0] 46 [0] 47
12:09:02 pcpu-alloc: [0] 48 [0] 49 [0] 50 [0] 51 [0] 52 [0] 53 [0] 54 [0] 55
12:09:02 pcpu-alloc: [0] 56 [0] 57 [0] 58 [0] 59 [0] 60 [0] 61 [0] 62 [0] 63
12:09:02 Built 1 zonelists in Zone order, mobility grouping on. Total pages: 2
12:09:02 Kernel command line: root=/dev/disk/by-path/ccw-0.0.0192-part1 rd_NO_L
12:09:02 PID hash table entries: 4096 (order: 3, 32768 bytes)
12:09:02 Dentry cache hash table entries: 131072 (order: 8, 1048576 bytes)
12:09:02 Inode-cache hash table entries: 65536 (order: 7, 524288 bytes)
12:09:02 Memory: 1007204k/1048576k available (5038k kernel code, 0k reserved, 3
12:09:02 Write protected kernel read-only data: 0x100000 - 0x7fffff
12:09:02 Hierarchical RCU implementation.
12:09:02 console [ttyS0] enabled
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
TDLNX01-TIVLP32
42/001
256 Connected through TLS1.0 to secure remote server/host TIVLP32.centers.ihost.com using port 22

```

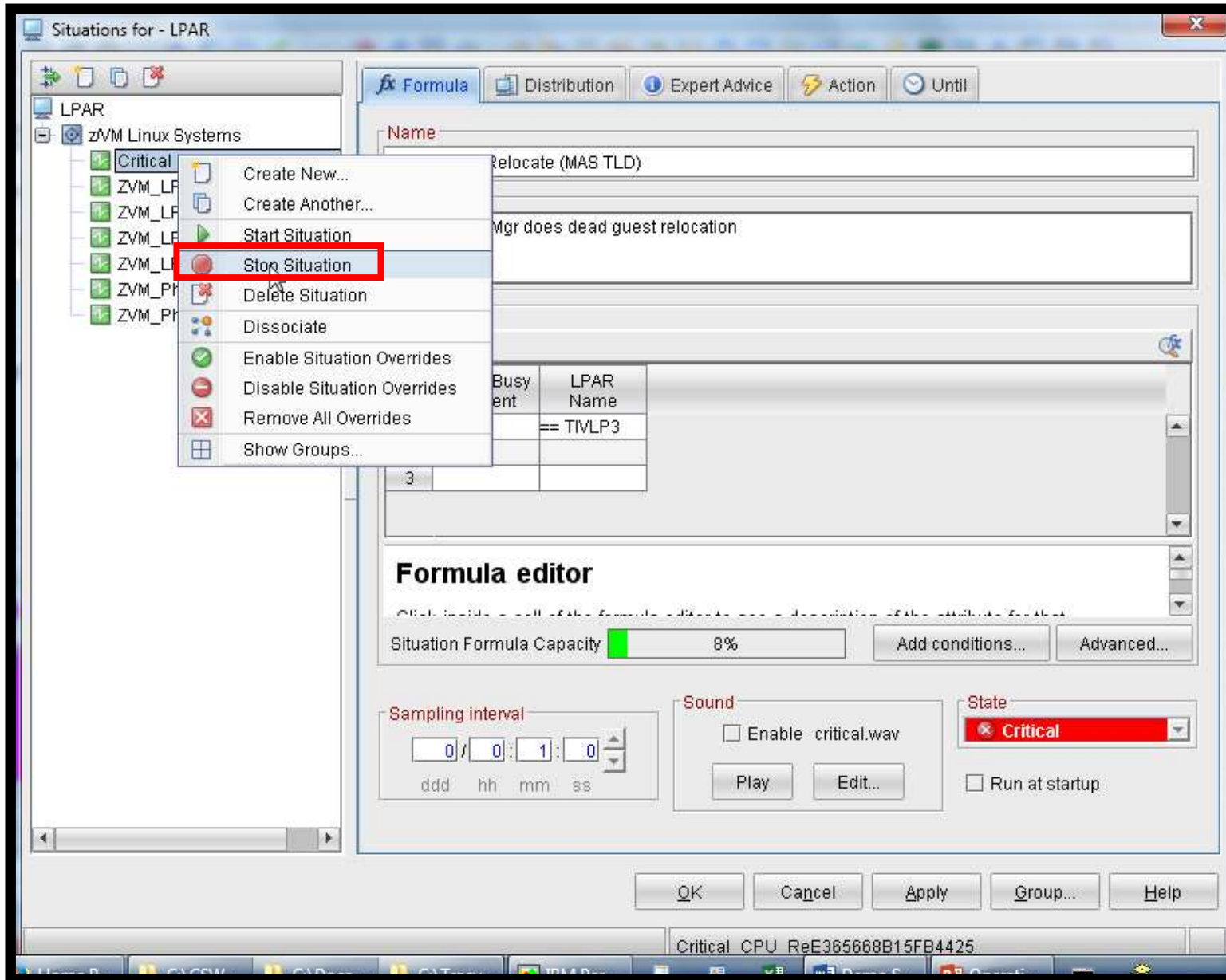


```
B - TIVLP32 Pok - [43 x 80]
File Edit View Communication Actions Window Help
Host: TIVLP32.centers.ihost.com Port: 22 LU Name: Disconnect
12:09:03 Bringing up loopback interface: [ OK ]
12:09:03 Bringing up interface eth0: Determining if ip address 10.20.30.3 is a
12:09:05 [ OK ]
12:09:05 Starting auditd:
12:09:05 [ OK ]
12:09:05 Starting portreserve: [ OK ]
12:09:05 Starting system logger: [ OK ]
12:09:05 Starting rpcbind: [ OK ]
12:09:05 Starting NFS statd: [ OK ]
12:09:05 Starting kdump:[FAILED]
12:09:05 Starting system message bus:
12:09:06 [ OK ]
12:09:06 Starting cups:
12:09:06 [ OK ]
12:09:06 Mounting filesystems: [ OK ]
12:09:06 Starting HAL daemon: [ OK ]
12:09:06 Retrigger failed udev events[ OK ]
12:09:06 Loading autofs4: [ OK ]
12:09:07 Starting automount: [ OK ]
12:09:07 Starting sshd:
12:09:07 [ OK ]
12:09:07 Starting cpi: [ OK ]
12:09:07 Starting postfix:
12:09:07 [ OK ]
12:09:07 Starting abrt daemon: [ OK ]
12:09:07 Starting crond: [ OK ]
12:09:07 Starting atd: [ OK ]
12:09:07 Starting rhsmcertd...[ OK ]
12:09:07 Starting certmonger: [ OK ]
12:09:07 c
12:09:07 Red Hat Enterprise Linux Server release 6.5 (Santiago)
12:09:07 Kernel 2.6.32-431.el6.s390x on an s390x
12:09:07 TDLNX01 login:
12:13:04 * -- Operations Manager VIEWCON session from MAINT630 entered the foll
12:13:04 root
12:13:04 root
12:13:04 Password:
12:13:08 Last login: Fri Dec 30 10:57:02 on console
12:13:08 [root@TDLNX01 ~]#
PF01= HELP PF02= SCROLL PF03= END PF04= PF05= HOLD PF06= FORMAT
PF07= UP PF08= DOWN PF09= PF10= LEFT PF11= RIGHT PF12= RECALL
TDLNX01-TIVLP32 (Scroll)
MA B 42/001
256 Connected through TLS1.0 to secure remote server/host TIVLP32.centers.ihost.com using port 22
```

Critical CPU Relocate (MAS TLD) tivlp3rhel3.centers.ihost.com:VL 12/30/16 12:08:52 TIVLP3

KFWITM1011 Select workspace link button to view situation event results.

Time	LPAR Name	Processor Type	LPAR Busy Percent
12/30/16 12:06:12	CF	CP	2.90
12/30/16 12:06:12	CF2	Unknown	0.00
12/30/16 12:06:12	DEMOMVS	CP	2.25
12/30/16 12:06:12	DEMOMVS2	zIIP	3.80
12/30/16 12:06:12	DEMOMVS3	CP	0.90
12/30/16 12:06:12	DEMOZVM	CP	38.96
12/30/16 12:06:12	DEMOZVM	zIIP	0.00



Scenario 19: How Do You Do That?

IP Connection in Operations Manager on first system (TIVLP3):

- * Set up IP (non-SSI) connection to send requests to TIVLP32
- * for non-SSI demos

```
DEFIPCS NAME LP32C +  
  USER TCPIP +  
  APPL GOMRSCC +  
  ADDR 129.33.196.113 +  
  PORT 43001
```

IP Connection in Operations Manager on second system (TIVLP32):

- * Set up IP (non-SSI) connection to receive requests from TIVLP3
- * for non-SSI demos

```
DEFIPCS NAME LP32L +  
  USER TCPIP +  
  APPL GOMRSCL +  
  ADDR 0.0.0.0 +  
  PORT 43001
```

Scenario 19: How Do You Do That?

Rules in Operations Manager on first system (TIVLP3):

```
*** If OMEGAMON tells us CPU utilization getting high, do dead guest
*** relocation of TDLNX01 to another member (TIVLP32)
*
DEFRULE NAME RELO +
  MATCH '*Dead guest relocation*' +
  ACTION LNXRELO1
*
* Watch for shutdown complete message on Linux guest
DEFRULE NAME LNXDOWN2 +
  MATCH '*HCPGIR450%*' +
  USER TDLNX01 +
  ACTION LNXRELO2
*
* Turn off the rule in general
SUSPEND RULE LNXDOWN2
```

Scenario 19: How Do You Do That?

Actions in Operations Manager on first system (TIVLP3):

*

```
DEFACTN NAME LNXRELO1 +  
  COMMAND 'RESUME RULE LNXDOWN2' +  
  ENV GOM +  
  NEXTACTN STOPLNX2
```

*

```
DEFACTN NAME STOPLNX2 +  
  COMMAND 'CP SIGNAL SHUTDOWN TDLNX01 WITHIN 90' +  
  ENV LVM
```

*

* Highlight the shutdown msg and tell TIVLP32 to autolog the guest

```
DEFACTN NAME LNXRELO2 +  
  INPUT AHI +  
  NEXTACTN LNXRELO3
```

*

```
DEFACTN NAME LNXRELO3 +  
  COMMAND 'SUSPEND RULE LNXDOWN2' +  
  ENV GOM +  
  NEXTACTN LNXRELO4
```

Scenario 19: How Do You Do That?

Actions in Operations Manager on first system (TIVLP3):

*

```
DEFACTN NAME LNXRELO4 +  
  COMMAND 'CP SLEEP 3 SEC' +  
  ENV OPMGRS1,Y,LP32C,Y +  
  NEXTACTN LNXRELO5
```

*

```
DEFACTN NAME LNXRELO5 +  
  COMMAND 'CP XAUTOLOG &u' +  
  ENV OPMGRS1,Y,LP32C,Y
```