Overview of CA's New Linux on System z Management Offerings and z/VM Products Update

March 13, 2012 - SHARE Session 10336

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CA Technologies

Abstract

In this session, we will review the CA Linux on System z management suite that was announced in August 2011 and will show how these products can be used in conjunction with CA's existing VM solutions to provide holistic monitoring, management, and troubleshooting of your Linux on System z and z/VM environments. We will also cover recent enhancements to the CA VM product suite and will share CA's roadmap for longer-term features and enhancements.

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Agenda

- Review of CA offerings for Linux on System z Management
- Practical Example using zVPS Performance Suite, UPSTREAM for Linux on System z, and CA VM:Manager
- CA z/VM Product Suite Update and Roadmap
- Questions

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Changing the way the mainframe is managed forever!

Mainframe 2.0

1. THE MARKET

Mainframe Platform Drivers

- Business Growth
- Hardware Evolution
- Mainframe Virtues

2. THE CHALLENGES

Control Costs	Sustain Critical Skills	Increase Agility
• Do More… • "…with less" • "…with nothing"	• Build next generation team dynamically • On ramp for next gen is long and complex	• Provision services faster • Multiplatform data center • Solve critical issues

3. THE STRATEGY

Maximize Value	Simplify Management	Practical Innovation

Best in Class Quality, Support, and Customer Experience

4. THE PROGRAMS

Promises Made		Promises Kept
Maximize Value	1	Customer Engagement Technology Exploitation
Simplify Management	2	Mainframe Software Mgmt Mainframe Stack
Practical Innovation	3	Integration, Productivity, and Insight

CA Solutions for Linux on System z
strategy

Secure

Agile

Optimized

- Simplify the management and security of Linux on System z with a comprehensive and integrated management suite
- Make Linux on System z a cost-effective choice for customers
- Agility delivered - allow clients to quickly deliver capacity on demand with Linux on System z

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CA Solutions for Linux on System z
overview

- **Product enhancements and strategic partnerships will help you reduce costs, improve performance and more efficiently manage Linux on System z**
  - ***Current releases of CA VM:Manager Suite for Linux on System z*** *provide various feature enhancements including support for managing tapes for Linux on System z, and others that help customers install, deploy, and service their CA z/VM products more effectively and quickly*
  - ***Velocity Software zVPS Performance Suite*** *complements CA solutions with real-time access to detail data from z/VM and Linux on System z platforms for optimized performance, capacity planning and cost chargeback*
  - ***INNOVATION Data Processing UPSTREAM for Linux on System z and UPSTREAM for z/OS UNIX*** *extend CA data protection capabilities with file level backup for Linux on System z and z/OS UNIX files*
  - ***CA Mainframe Connector for Linux on System z*** *allows CA z/OS-based automation products to receive event information from Linux on System z environments*
- **Combined, these solutions will help remove barriers and reduce time, cost and risk of consolidating workloads to Linux on System z**

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Velocity zVPS™ Performance Suite
optimize z/VM and Linux on System performance

VELOCITY SOFTWARE

Best in class performance management for Linux on System z

Combine multi-platform system management expertise from **CA Technologies**

…with the performance measurement expertise from **Velocity Software**

Performance Analysis
- Provides real-time metrics on all facets of performance for all servers including z/VM, Linux on System z and distributed servers
- Enables immediate analysis of real-time problems

Operational Alerting
- Optimize operations to meet our SLA's.
- Immediately detect and report performance and capacity issues.

Capacity Planning
- Prevent costly hardware upgrades and data center outages.
- Project capacity requirements of future workloads with comprehensive trend data.

Chargeback and Accounting
- Transition IT from a cost center to a profit center.
- Chargeback Linux on System z resource usage to applicable business or agency with detailed and accurate usage data.

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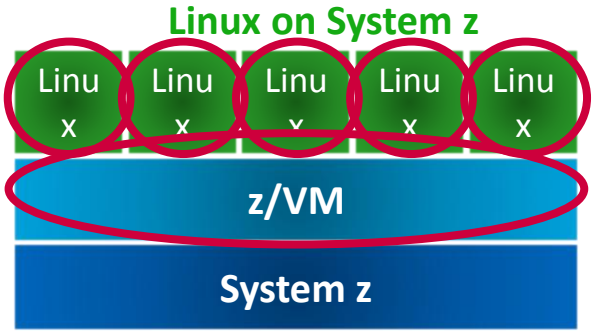
Velocity Software zVPS™ Performance Management Suite

The Differentiators

— ***Comprehensive Data Collection***

- z/VM Subsystems (processor, storage, I/O, paging)
- z/VM Guest resources
- Linux on System z – disk, storage, processor
- Networked servers (Linux, Unix, Windows)
- Linux applications



— ***High data Capture Rate***

- Critical for accurate analysis, reporting, and accounting

— ***Uses existing Linux on System z SNMPD process for data capture***

- Eliminates overhead and maintenance of new performance agent

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Velocity zVPS™ Performance Suite
solution components

zMON™	Real-time graphical display of up-to-the-minute performance information
zMAP™	Historical performance reporting provides in-depth post-analysis and capacity planning
zTCP™	Network performance monitor for distributed servers, Linux networks and z/VM
zPRO™ Portal	Web-based interface for z/VM and Linux on System z performance management. Also provides zVPS™ product administration
zWRITE™	Data collection facility that reduces monitor data without losing information relevant to proper performance analysis
zVWS™	High-speed web server for optimum z/VM performance and reduced CPU overhead

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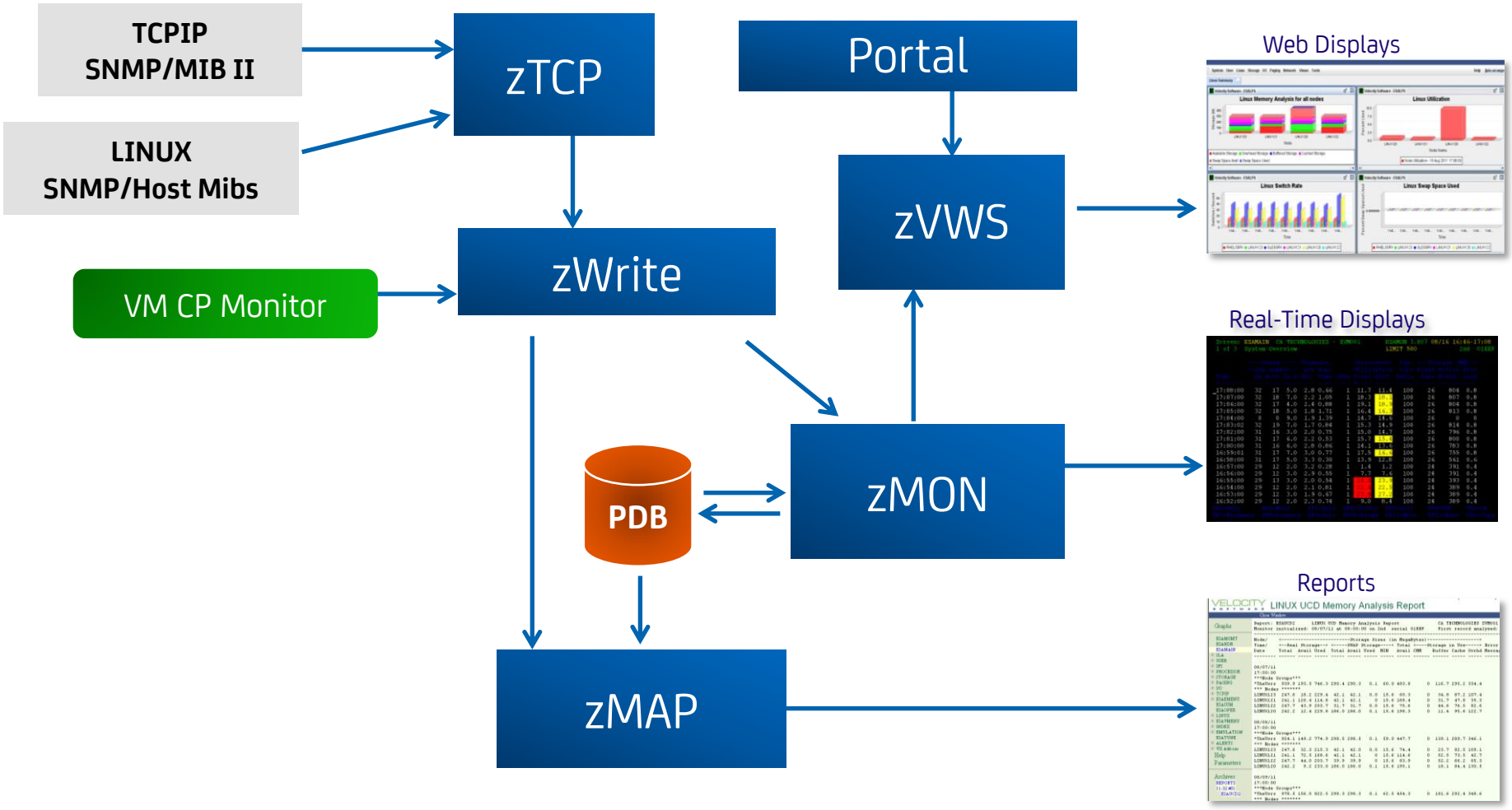
zVPS Performance Suite
architecture



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UPSTREAM for Linux on System z
best-in-class data protection

Business Continuity

- **Fast, scalable** and highly **reliable** backup and recovery for Linux on System z
- **Only** solution that will **backup up to z/OS**
  - Leverage existing z/OS skills and infrastructure for operational efficiency
  - Rely on proven z/OS disaster recovery strengths

Peace of Mind

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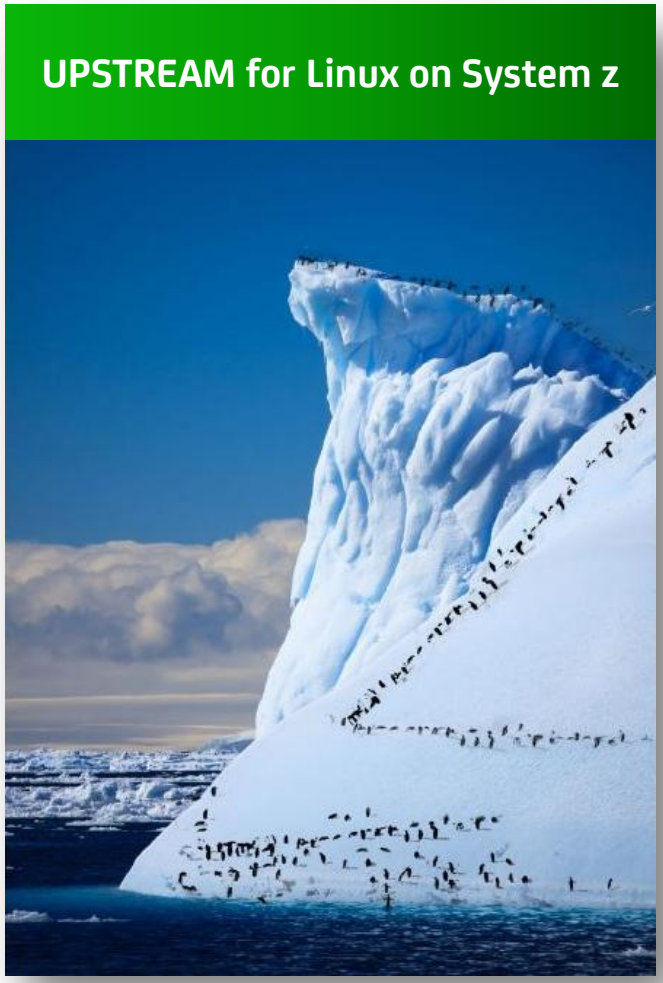
comprehensive backup and recovery for Linux on System z



- Provides continuous business operation for Linux on System z applications
- Extends your investments in existing mainframe resources: CPU, tapes, virtual tape, tape drives, staff
- Protects software investment by utilizing existing z/OS management software
- Extends mainframe security and automated operations to Linux on System z data protection
- Provides backup and recovery for very large amounts of data without negatively impacting corporate network performance
- File level backups directly to z/OS mainframe tape or DASD

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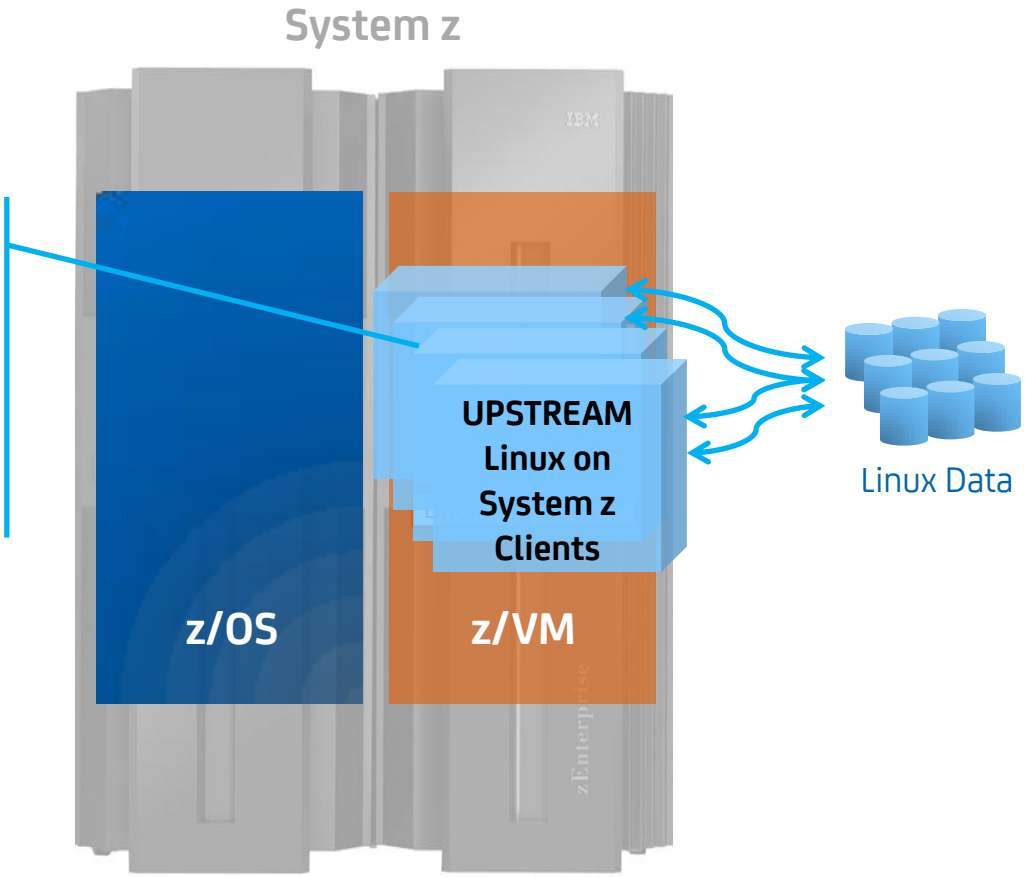
UPSTREAM for Linux on System z
architecture

UPSTREAM Linux on System z Clients

UPSTREAM agents run on Linux servers to protect Linux data



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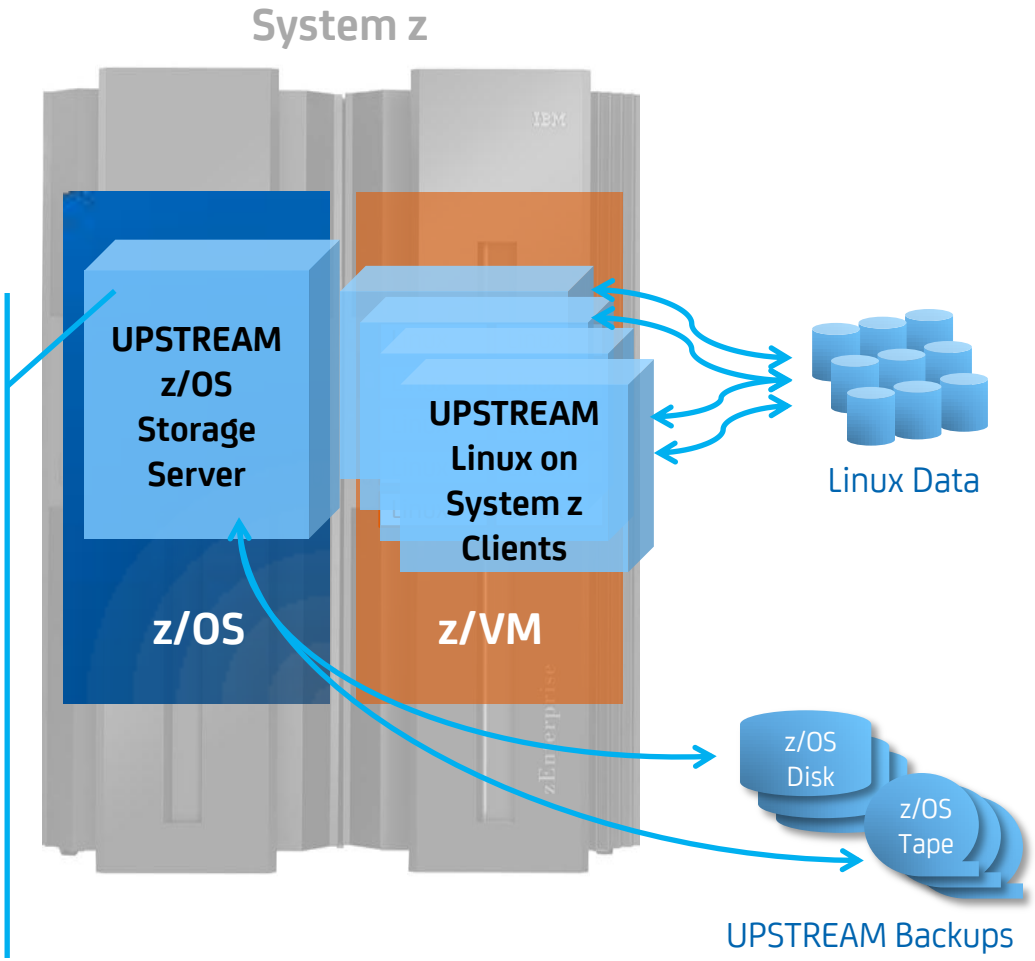
UPSTREAM for Linux on System z
architecture

UPSTREAM z/OS Storage Server

UPSTREAM is only data protection solution that provides backup to z/OS storage server

Enabling backup to z/OS tape or disk

For increased reliability and compliance



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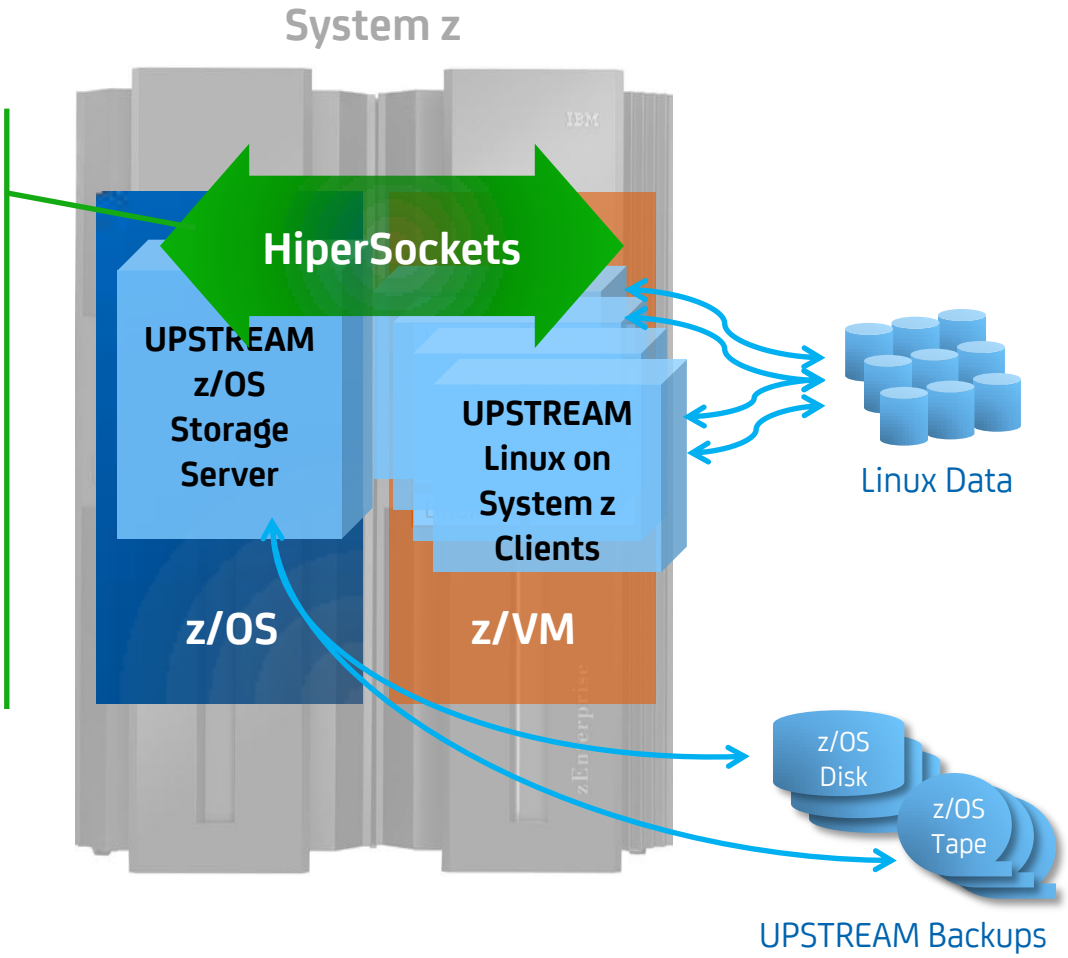
UPSTREAM for Linux on System z
innovative high performance data protection

UPSTREAM exploits HiperSocket Technology

Takes backup and recovery off corporate network

Protect very large amounts of data without negatively impacting corporate communications or customer access



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UPSTREAM for z/OS UNIX
storage backup for z/OS UNIX System Services (USS)

- **Enables centralized storage management of hybrid mainframe environments**
- **Provides ad hoc and automated, unattended backup/restore, file transfer and storage management operations**
- **Further leverage strengths of z/OS Unix to manage Web serving, WebSphere, Lotus Domino**

Complementary storage backup solution that is sold separately

UPSTREAM for z/OS UNIX

File level backup and recovery for ZFS/HFS files under Unix System Services for z/OS

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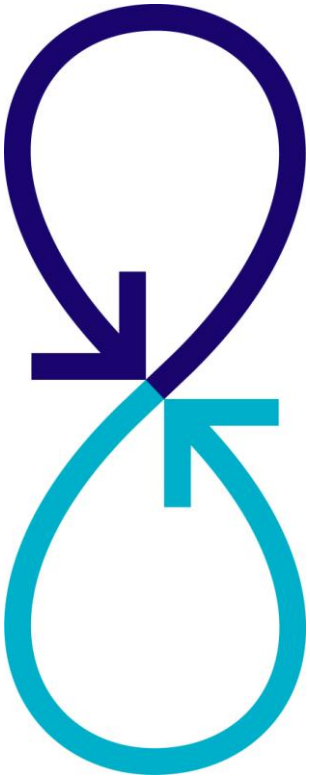
CA Mainframe Connector for Linux on System z

Cross-platform automation and integrated message handling for Linux on System z



- Connector for Linux on System z connects CA SOLVE:Operations Automation with z/VM systems and their z/Linux guests via IP Connections
  - Linux on System z and z/VM unsolicited event traffic is normalized and merged with z/OS console messages in CA SOLVE:Operations Automation
  - Linux on System z and z/VM command-and-response functions are available and behave like a specialized z/OS system command
- Available with CA SOLVE:Operations® Automation R11.9 – NO CHARGE!
- **Planned availability with CA OPS/MVS® Event Management and Automation release targeted for mid-2012**

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CA Mainframe Connector for Linux on System z

```
QANM1031---------------------- Resource Monitor ----------------------CA31-0022
Command ===>                                                  Scroll ===> CSR

                  S=Status L=Transient Log D=Display DB=Database ?=List Cmds
    System    Class Resource          Desired  Actual    Mode      Logical   Ovr
    $SERVICE  SVC   FRED              ACTIVE   FAILED    MANUAL    ATTENTION
    CA31      DASD  DASD              ACTIVE   INACT--19 MANUAL    ATTENTION
    CA31      INIT  1                 INACTIVE C=T
    CA31      INTNL PR(SOLVCICS)      ACTIVE   DEGRADED  AUTOMATED DEGRADED
    CA31      JES   JES2              ACTIVE   ACTIVE    MANUAL    OK
    CA31      JOB   CICSPROD          ACTIVE   ACTIVE    MANUAL    OK
    CA31      PRT   PRT10             ACTIVE   INACTIVE  MANUAL    ATTENTION
    CA31      SPOOL SPOOL             ACTUAL UTILIZATION: 67.2961 PERCENT
    CA31      STC   DENMX9JV          ACTIVE   ACTIVE    MANUAL    OK          G
    CA31      STC   D10ADIST          ACTIVE   ACTIVE    MANUAL    OK          G
    CA31      STC   D10AIRLM          ACTIVE   ACTIVE    MAN-ARM   OK          G
    CA31      STC   D10AMSTR          ACTIVE   ACTIVE    MAN-ARM   OK          G
    CA31      STC   QANM10            ACTIVE   ACTIVE    MANUAL    OK          G
    CA31      TAPE  0E7B              UNIT 0E7B IS ONLINE/ACTIVE
    CA31      TAPE  0E7C              UNIT 0E7C IS ONLINE/ACTIVE
    ZVM011    LINUX LINUX181          ACTIVE   ACTIVE    MANUAL    OK
    ZVM011    LXAPP LINUX181.CALXAGNT ACTIVE   ACTIVE    MANUAL    OK          M
    ZVM011    LXAPP LINUX181.QA1      ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA2      LINUX181.QA2 HAS BEEN STOPPED BY KILL
    ZVM011    LXAPP LINUX181.QA3      LINUX181.QA3 IS STARTING
    ZVM011    LXAPP LINUX181.QA4      ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA5      LINUX181.QA5 IS ACTIVE
    ZVM011    LXAPP LINUX181.QA6      ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA7      LINUX181.QA7 HAS BEEN FORCED TERMINATED
    ZVM011    LXAPP LINUX181.QA8      ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA9      LINUX181.QA9 HAS BEEN STOPPED BY KILL
    ZVM011    LXAPP LINUX181.QA10     ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA11     LINUX181.QA11 IS INACTIVE
    ZVM011    LXAPP LINUX181.QA12     ACTIVE   INACTIVE  MANUAL    ATTENTION
    ZVM011    LXAPP LINUX181.QA13     LINUX181.QA13 IS ACTIVE
    ZVM011    VMGST ZVM011            ACTIVE   ACTIVE    MANUAL    OK
    **END**
```

Practical Example

Web DB process fails on LINUX123 after overnight MYSQL upgrade and resolution is to back out upgrade

— ***UPSTREAM® for Linux on Z is used for server back ups***

- Full Weekly; daily incremental backups
- MYSQL DB backup script (PREPROCESS) defined in UPSTREAM Backup policies for Preprocessing
  - **mysqldump –uroot –plinux123 winestore –x > /DBbackup/winestore_backup.sql**
- Restore performed from local server dump file – retain one copy on server
- MYSQLD startup script modified to generate message to operator on successful start

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Practical Example

Scenario – Monitoring and Automation

— ***VM:Operator***

- HOLDMSG table used for zVPS Alerts
- SENDMAIL exec triggered by VPSE PRER custom alert
- SECUSER Windows for each Linux on System z server

— ***zVPS™ Performance Suite***

- Customized alerts implemented via zMON MONALERT file
- ZALERT service machine running to process zMON alerts
- ***zVPS™ MONALERT file includes alert for process monitoring (snmpd.conf proc statement)***

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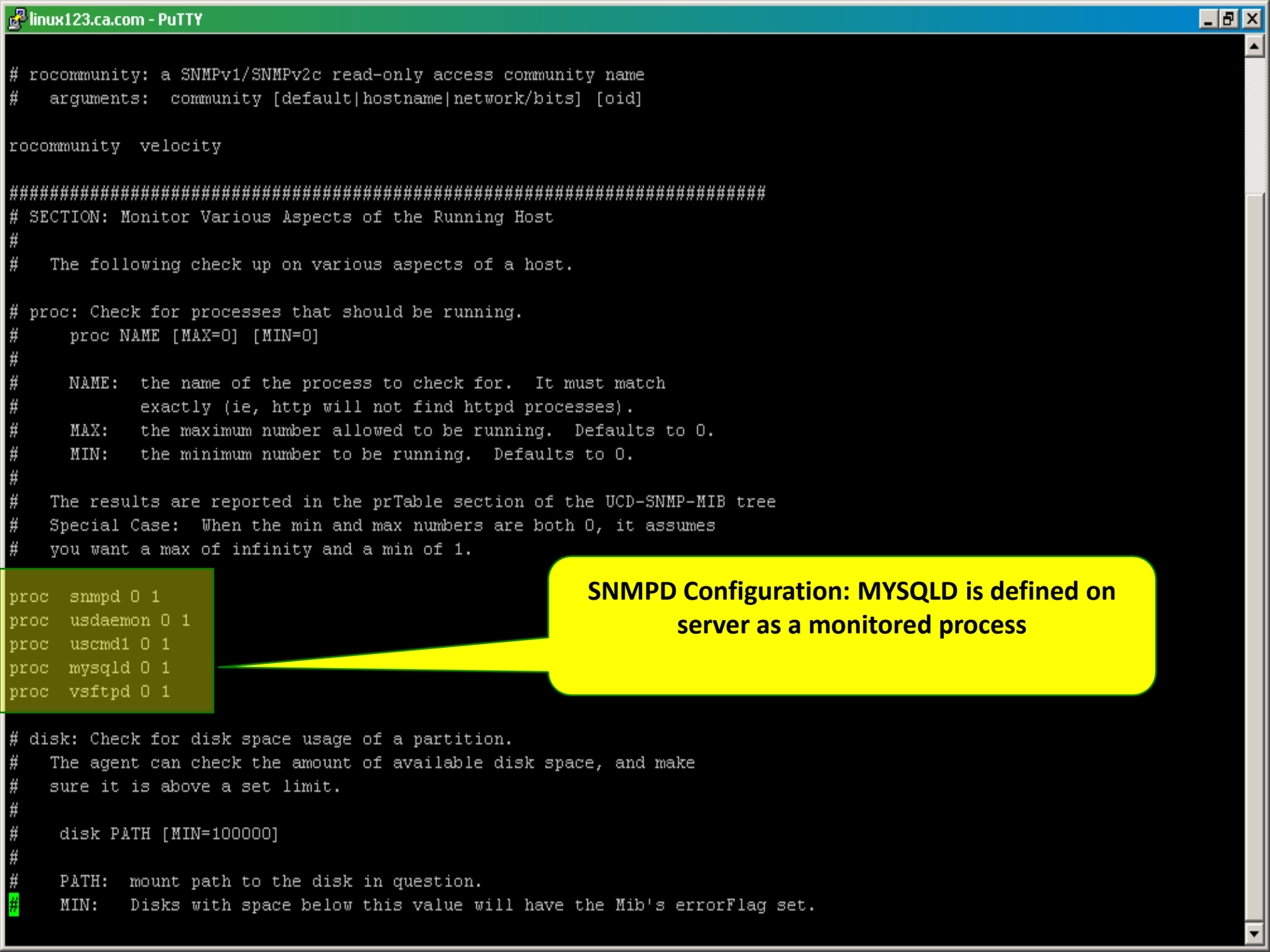
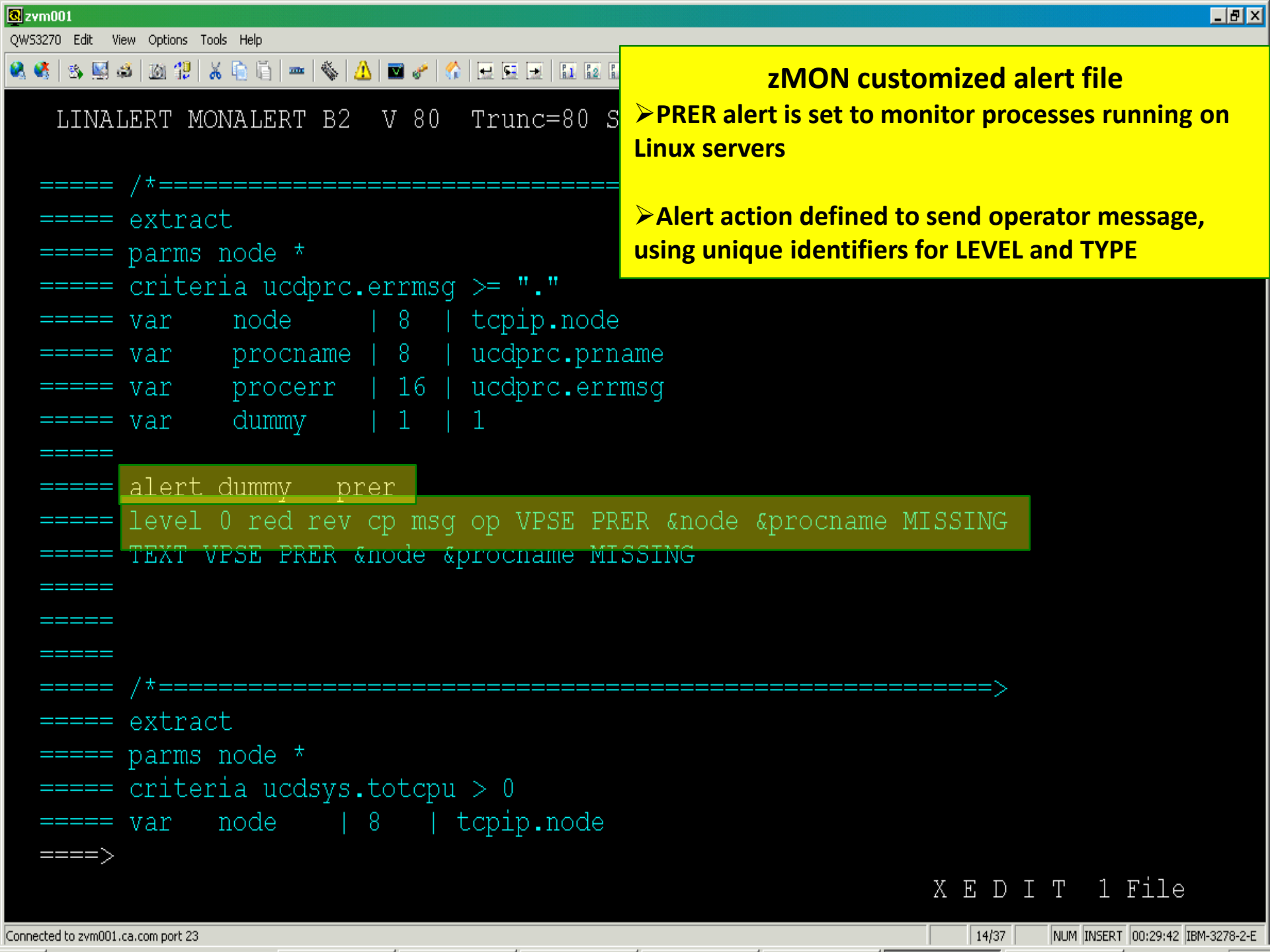
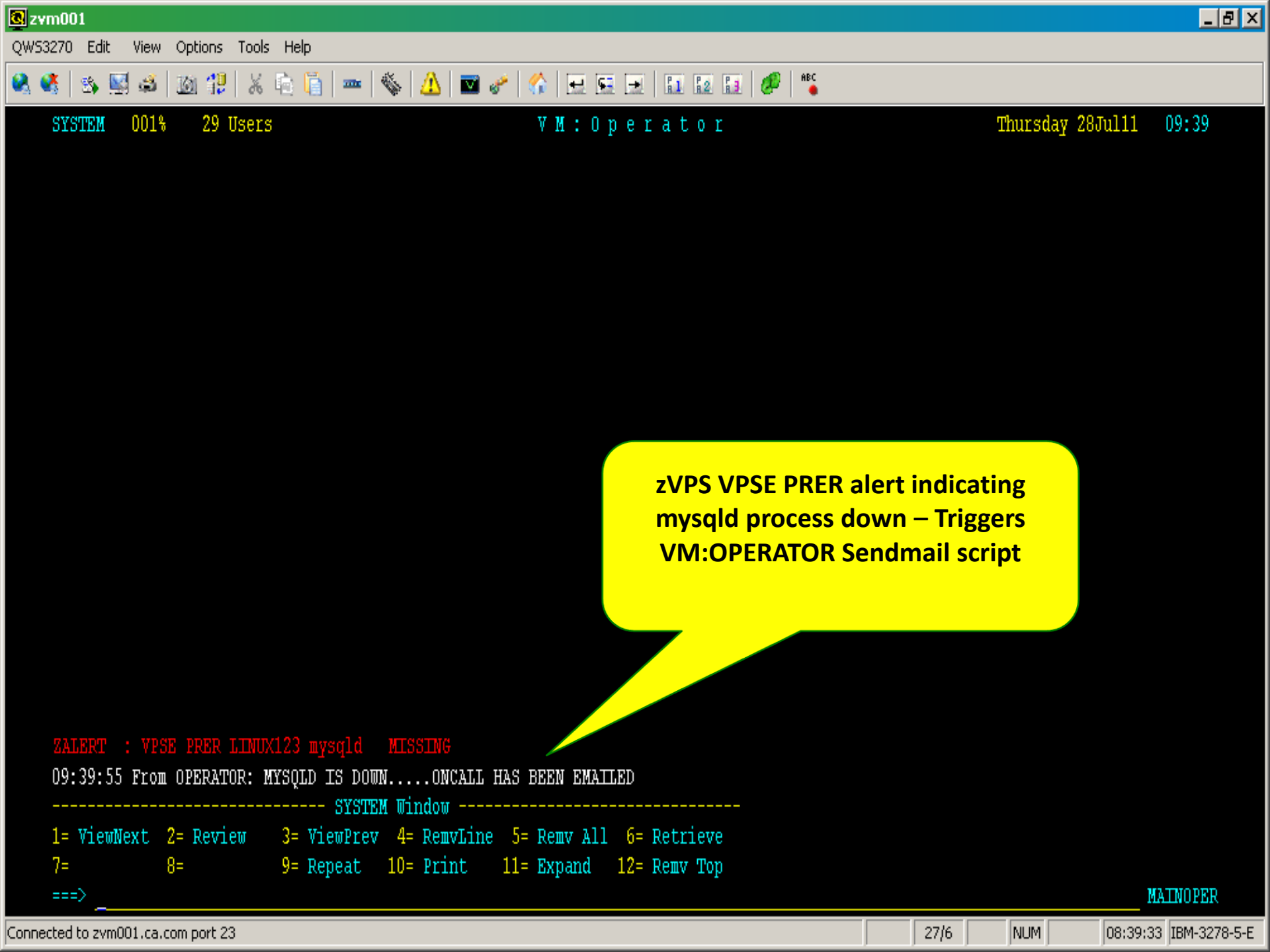

linux123.ca.com - PuTTY
rocommunity: a SNMPv1/SNMPv2c read-only access community name
arguments: community [default|hostname|network/bits] [oid]
rocommunity velocity
SECTION: Monitor Various Aspects of the Running Host
The following check up on various aspects of a host.
proc: Check for processes that should be running.
proc NAME [MAX=0] [MIN=0]
NAME: the name of the process to check for. It must match
exactly (ie, http will not find httpd processes).
MAX: the maximum number allowed to be running. Defaults to 0.
MIN: the minimum number to be running. Defaults to 0.
The results are reported in the prTable section of the UCD-SNMP-MIB tree
Special Case: When the min and max numbers are both 0, it assumes
you want a max of infinity and a min of 1.
proc snmpd 0 1
proc usdaemon 0 1
proc uscmd1 0 1
proc mysqld 0 1
proc vsftpd 0 1
SNMPD Configuration: MYSQLD is defined on server as a monitored process
disk: Check for disk space usage of a partition.
The agent can check the amount of available disk space, and make
sure it is above a set limit.
disk PATH [MIN=100000]
PATH: mount path to the disk in question.
MIN: Disks with space below this value will have the Mib's errorFlag set.



zMON customized alert file

- **PRER alert is set to monitor processes running on Linux servers**
- **Alert action defined to send operator message, using unique identifiers for LEVEL and TYPE**


zvm001
QWS3270 Edit View Options Tools Help
SYSTEM 001% 29 Users
V M : O p e r a t o r
Thursday 28Jul11 09:39
zVPS VPSE PRER alert indicating mysqld process down – Triggers VM:OPERATOR Sendmail script
ZALERT : VPSE PRER LINUX123 mysqld MISSING
09:39:55 From OPERATOR: MYSQLD IS DOWN.....ONCALL HAS BEEN EMAILED
SYSTEM Window
1= ViewNext 2= Review 3= ViewPrev 4= RemvLine 5= Remv All 6= Retrieve
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top
===>
MAINOPER
Connected to zvm001.ca.com port 23
27/6
NUM
08:39:33
IBM-3278-5-E

WEB DB Server – DB Restore with UPSTREAM

VM:Operator Automation: Alert generates email to Support

From: OPERATOR@ZVM001.CA.COM [mailto:OPERATOR@ZVM001.CA.COM]

Sent: Thursday, July 28, 2011 09:40 AM

To: MYSQLD ONCALL

Subject: VPSE PRER LINUX123 mysqld MISSING

zVPS alert has been received (noted in SUBJECT) and needs immediate attention.

Contact Operations support and Service Desk for assistance or when condition has been corrected.

CA VM:Operator

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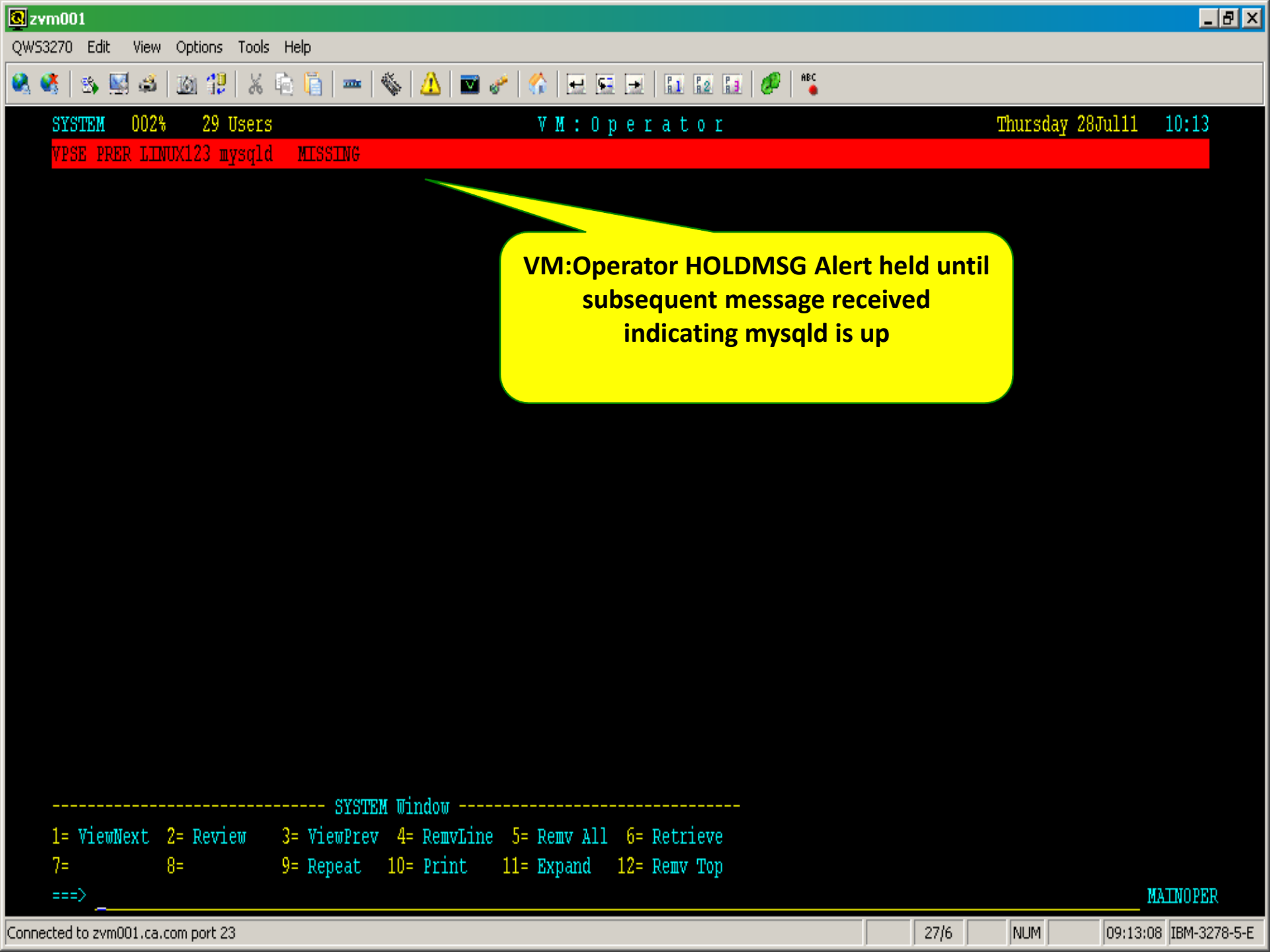
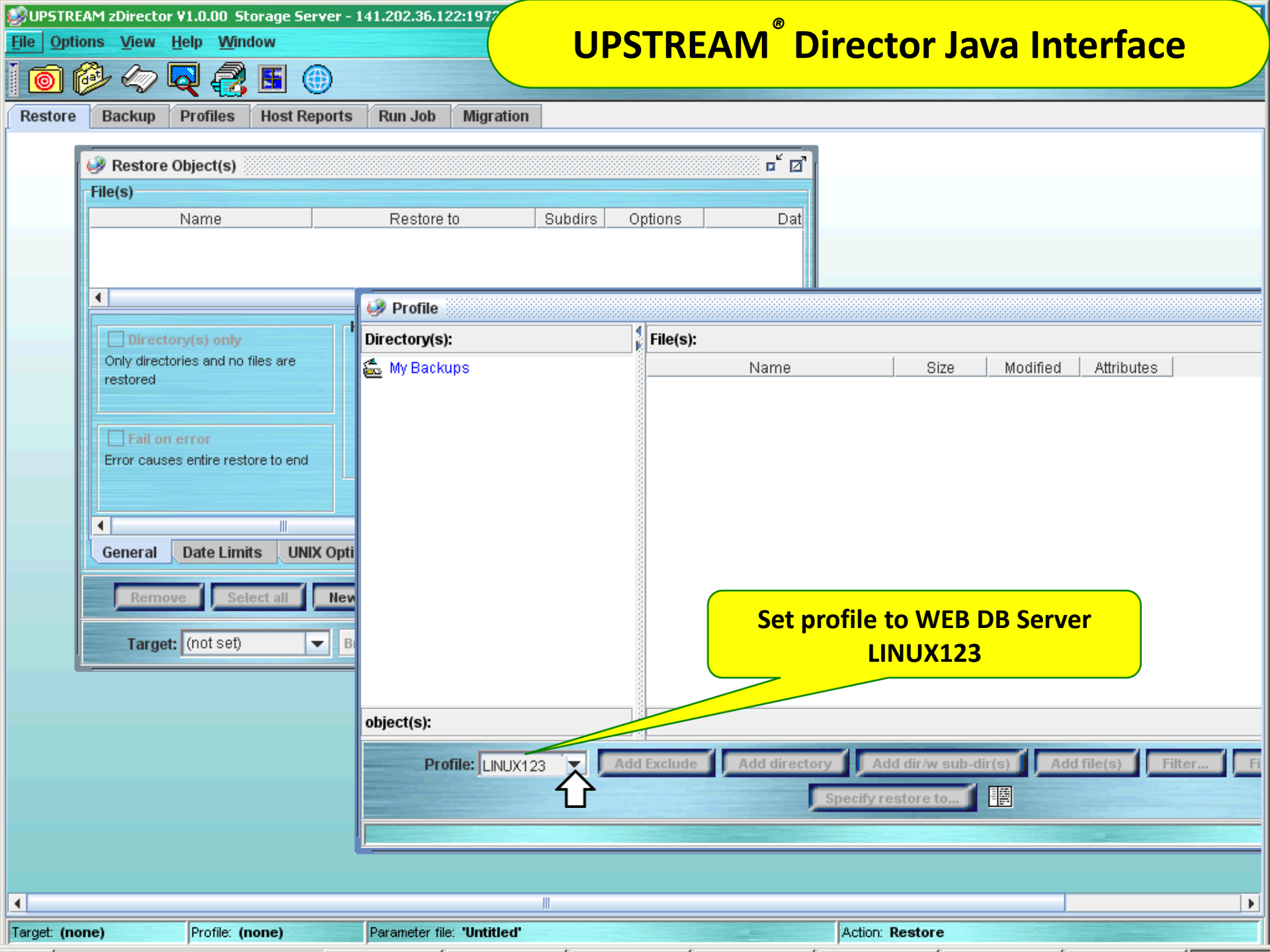
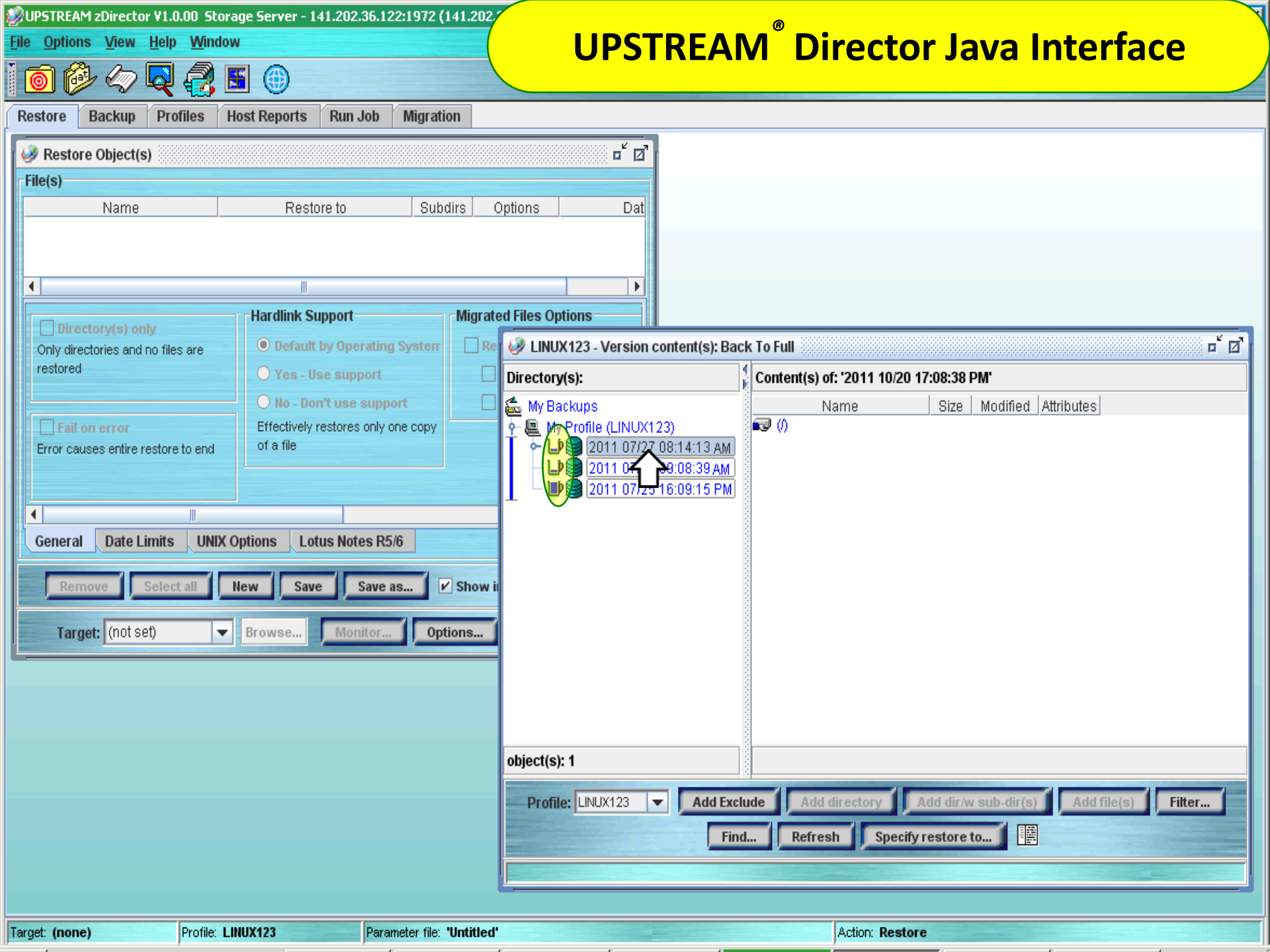

zvm001
QWS3270 Edit View Options Tools Help
SYSTEM 002% 29 Users V M : O p e r a t o r Thursday 28Jul11 10:13
VPSE PRER LINUX123 mysqld MISSING
VM:Operator HOLDMSG Alert held until subsequent message received indicating mysqld is up
SYSTEM Window
1= ViewNext 2= Review 3= ViewPrev 4= RemvLine 5= Remv All 6= Retrieve
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top
===>
MAINOPER
Connected to zvm001.ca.com port 23
27/6
NUM
09:13:08
IBM-3278-5-E

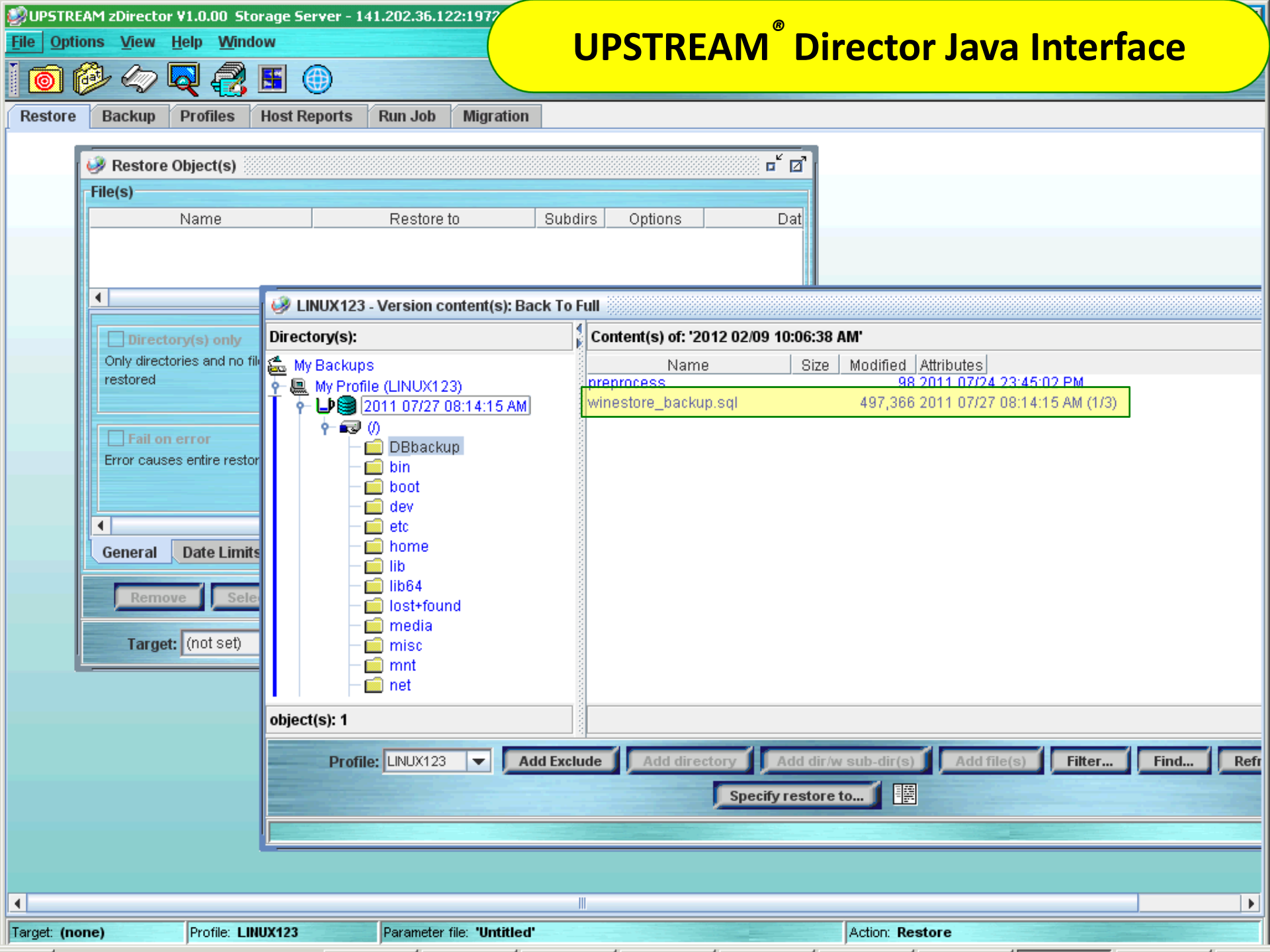
UPSTREAM® Director Java Interface

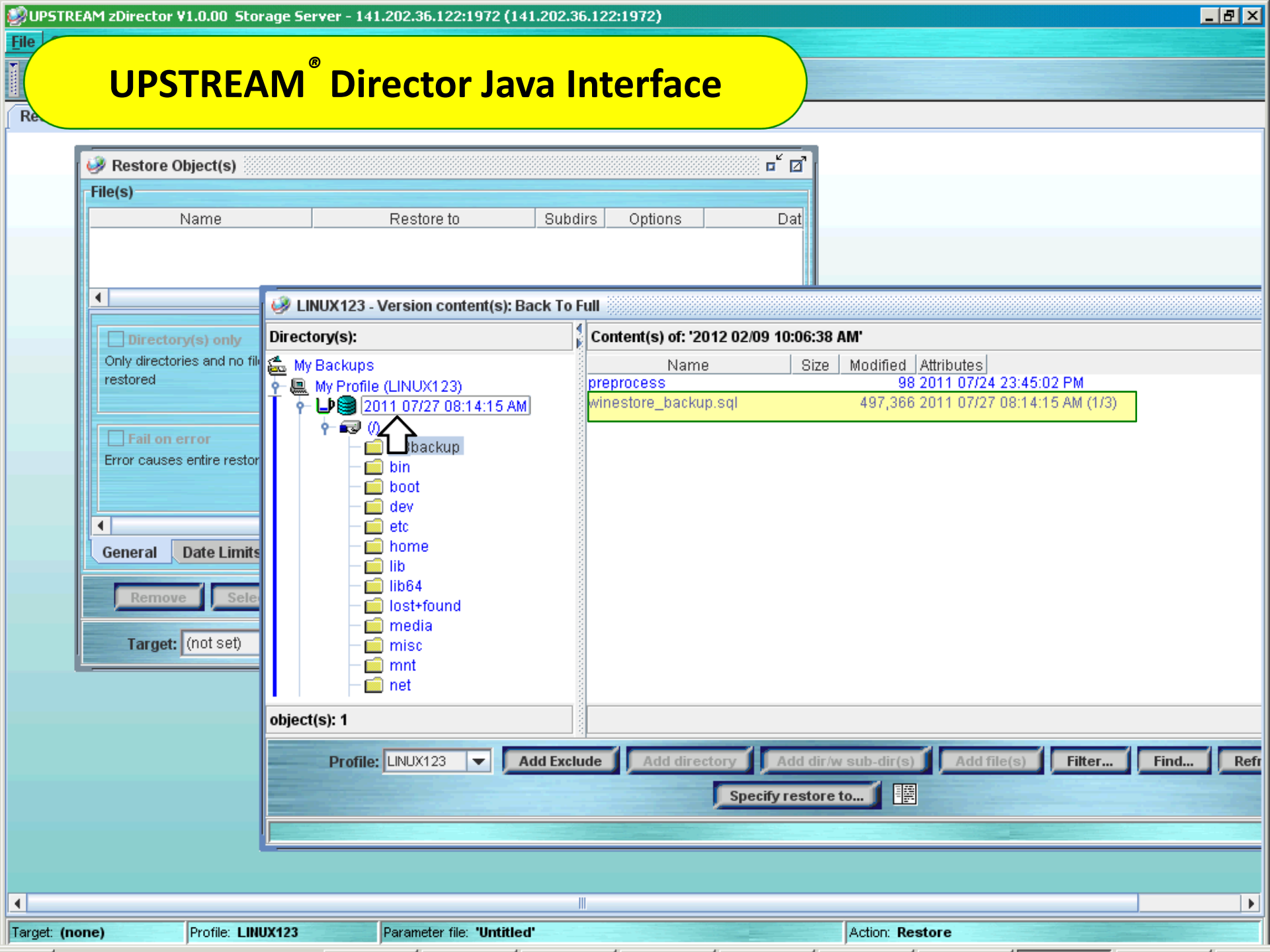


UPSTREAM® Director Java Interface

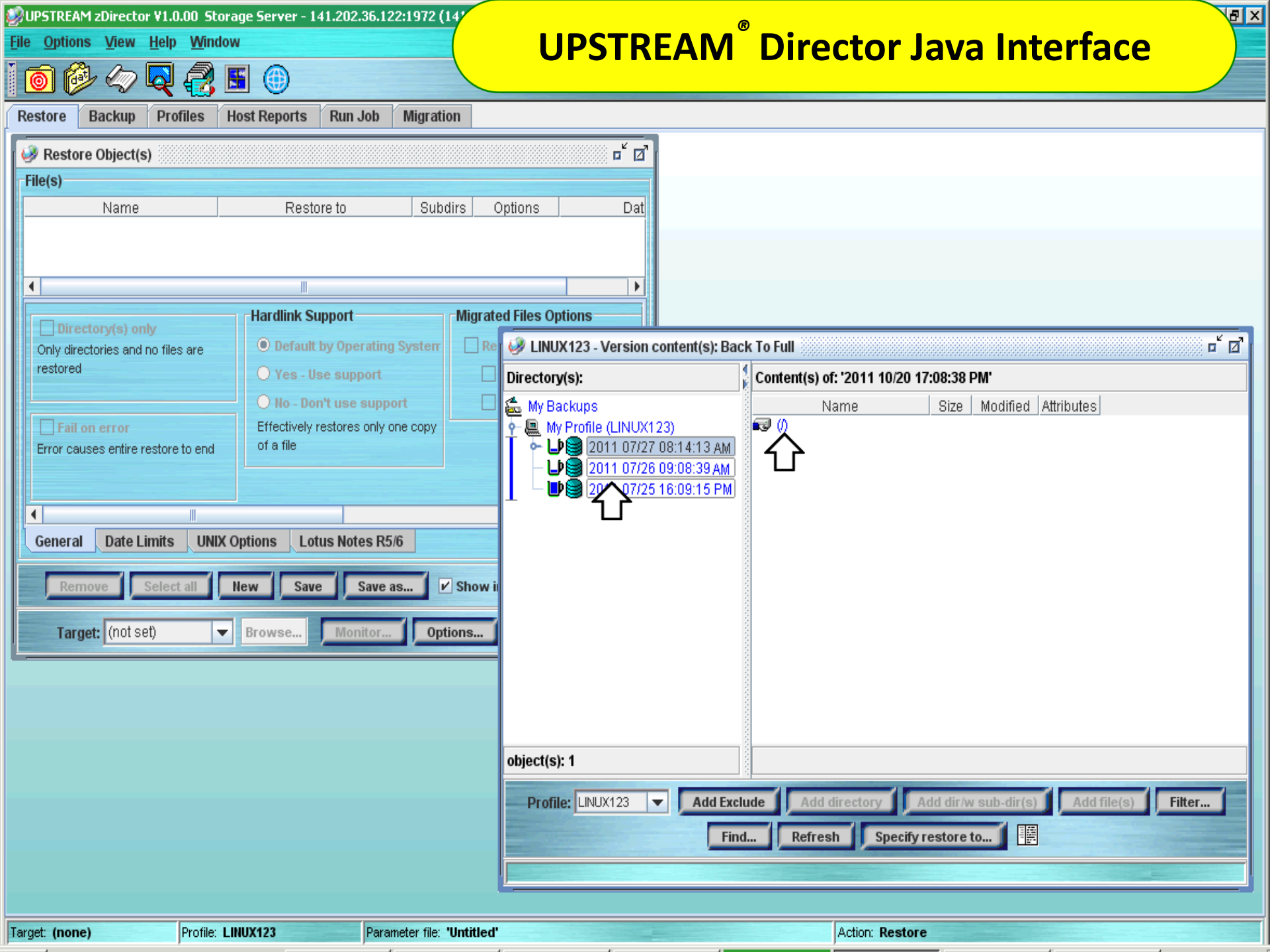


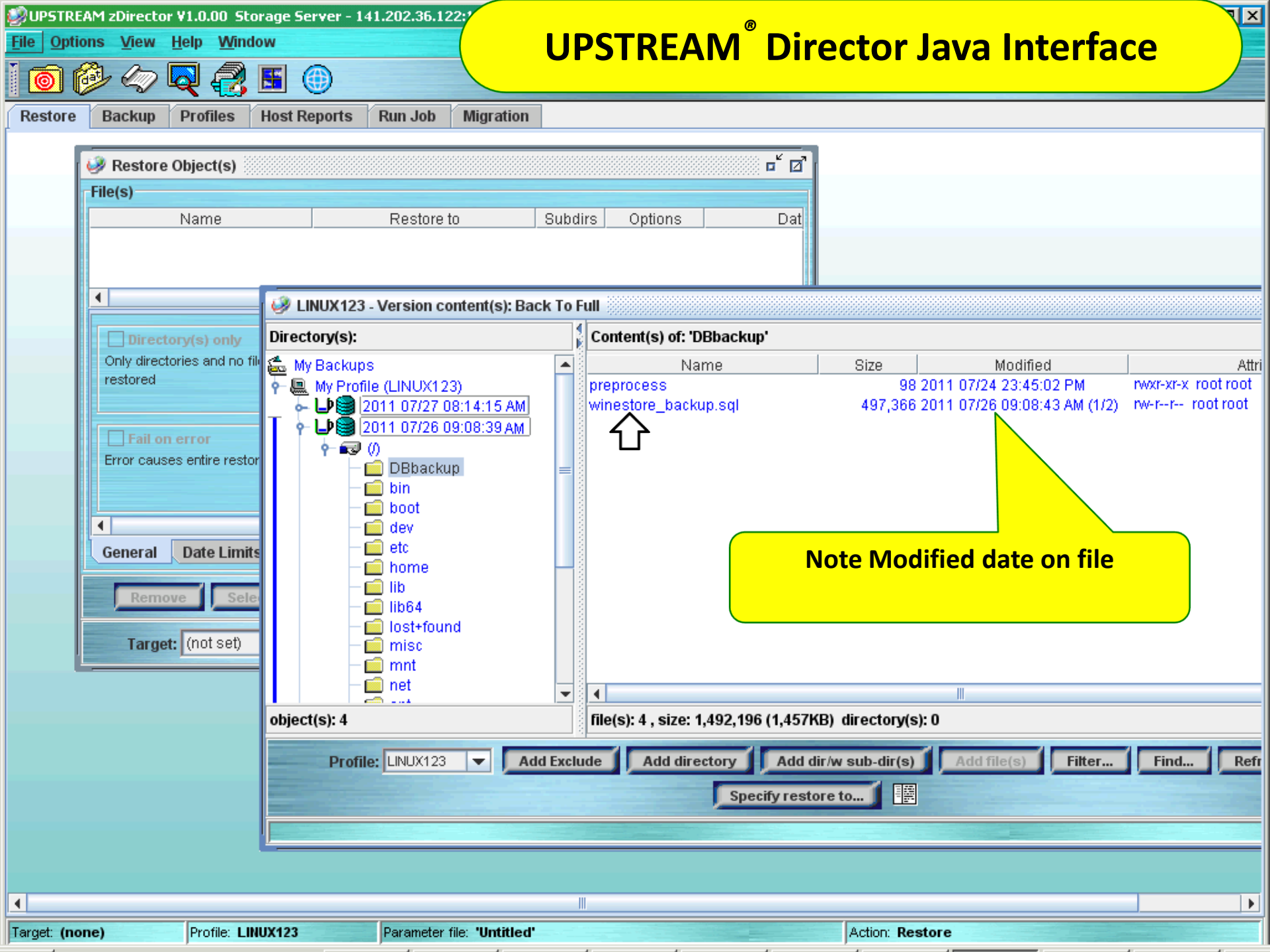
UPSTREAM® Director Java Interface



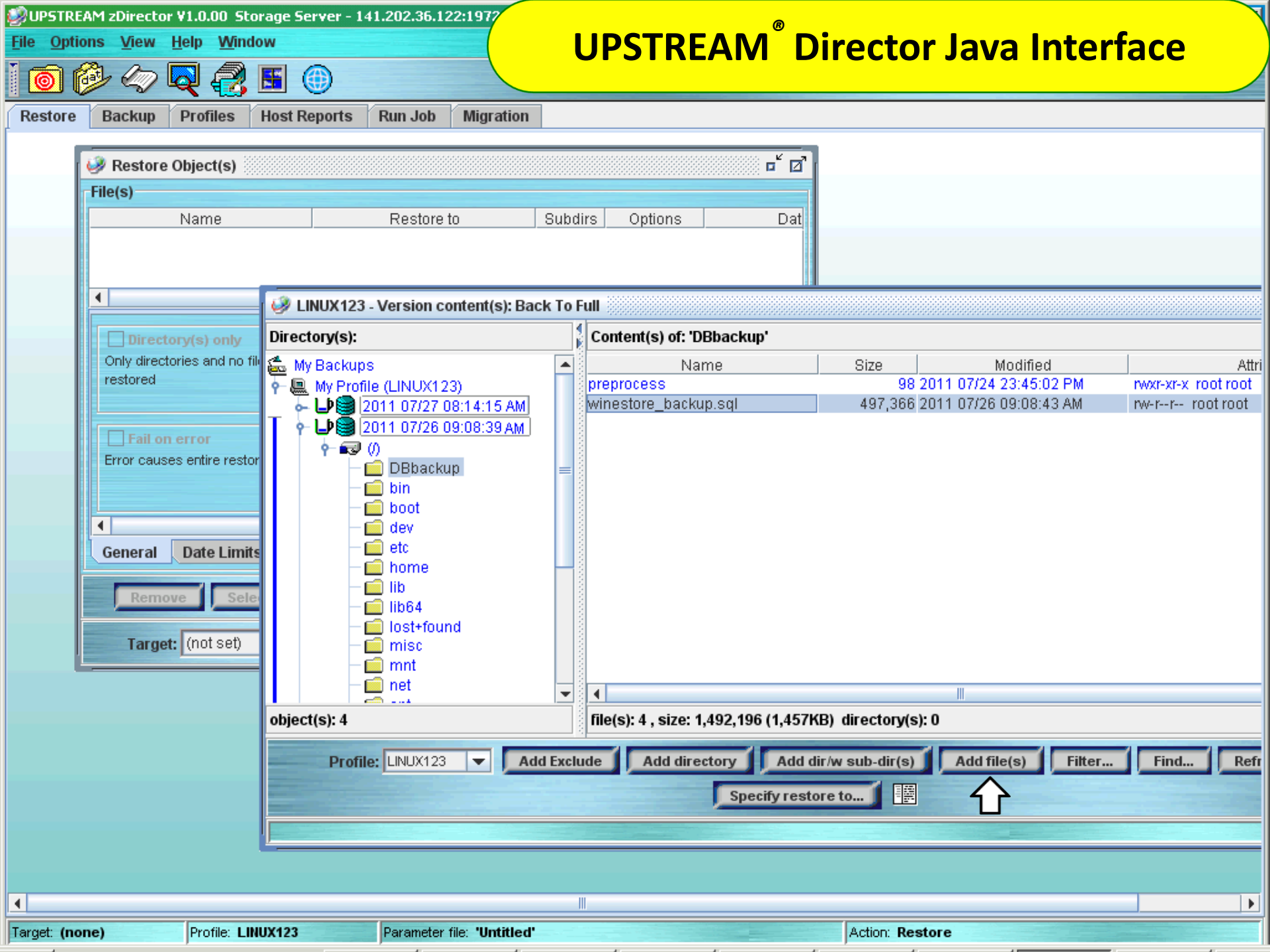

UPSTREAM zDirector V1.0.00 Storage Server - 141.202.36.122:1972 (141.202.36.122:1972)
File
UPSTREAM® Director Java Interface
Restore Object(s)
File(s)
Name
Restore to
Subdirs
Options
Dat
Directory(s) only
Only directories and no fil
restored
Fail on error
Error causes entire restor
General
Date Limits
Remove
Sele
Target:
(not set)
LINUX123 - Version content(s): Back To Full
Directory(s):
My Backups
My Profile (LINUX123)
2011 07/27 08:14:15 AM
(/)
backup
bin
boot
dev
etc
home
lib
lib64
lost+found
media
misc
mnt
net
object(s): 1
Content(s) of: '2012 02/09 10:06:38 AM'
Name
Size
Modified
Attributes
preprocess
98 2011 07/24 23:45:02 PM
winestore_backup.sql
497,366 2011 07/27 08:14:15 AM (1/3)
Profile:
LINUX123
Add Exclude
Add directory
Add dir/w sub-dir(s)
Add file(s)
Filter...
Find...
Refr
Specify restore to...
Target: (none)
Profile: LINUX123
Parameter file: 'Untitled'
Action: Restore

UPSTREAM® Director Java Interface

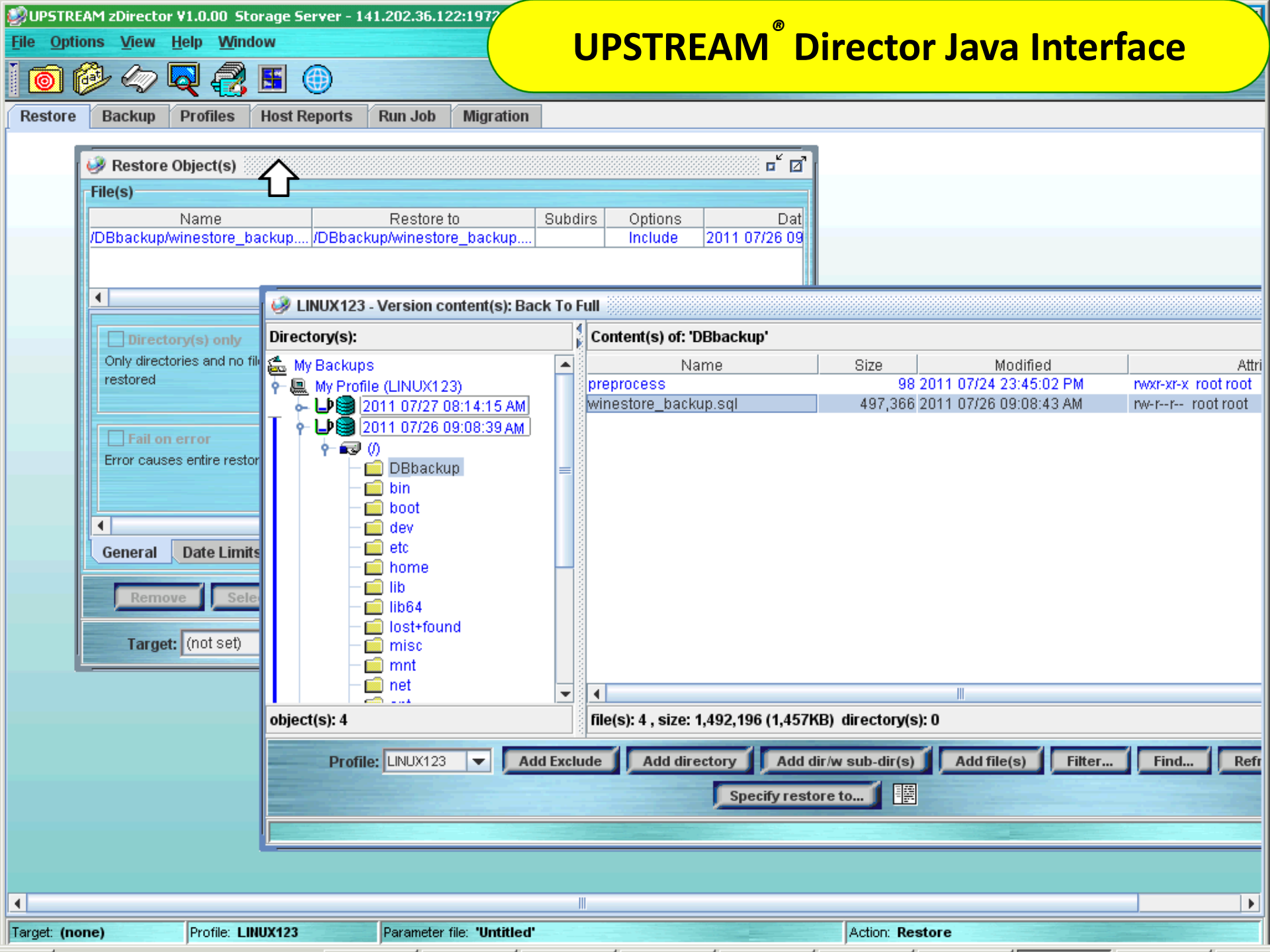



UPSTREAM® Director Java Interface
UPSTREAM zDirector V1.0.00 Storage Server - 141.202.36.122:
File Options View Help Window
Restore Backup Profiles Host Reports Run Job Migration
Restore Object(s)
File(s)
Name Restore to Subdirs Options Dat
Directory(s) only
Only directories and no fil
restored
Fail on error
Error causes entire restor
General Date Limits
Remove Sele
Target: (not set)
LINUX123 - Version content(s): Back To Full
Directory(s):
My Backups
My Profile (LINUX123)
2011 07/27 08:14:15 AM
2011 07/26 09:08:39 AM
(/)
DBbackup
bin
boot
dev
etc
home
lib
lib64
lost+found
misc
mnt
net
object(s): 4
Content(s) of: 'DBbackup'
Name Size Modified Attri
preprocess 98 2011 07/24 23:45:02 PM rwxr-xr-x root root
winestore_backup.sql 497,366 2011 07/26 09:08:43 AM (1/2) rw-r--r-- root root
Note Modified date on file
file(s): 4 , size: 1,492,196 (1,457KB) directory(s): 0
Profile: LINUX123
Add Exclude
Add directory
Add dir/w sub-dir(s)
Add file(s)
Filter...
Find...
Specify restore to...
Target: (none)
Profile: LINUX123
Parameter file: 'Untitled'
Action: Restore

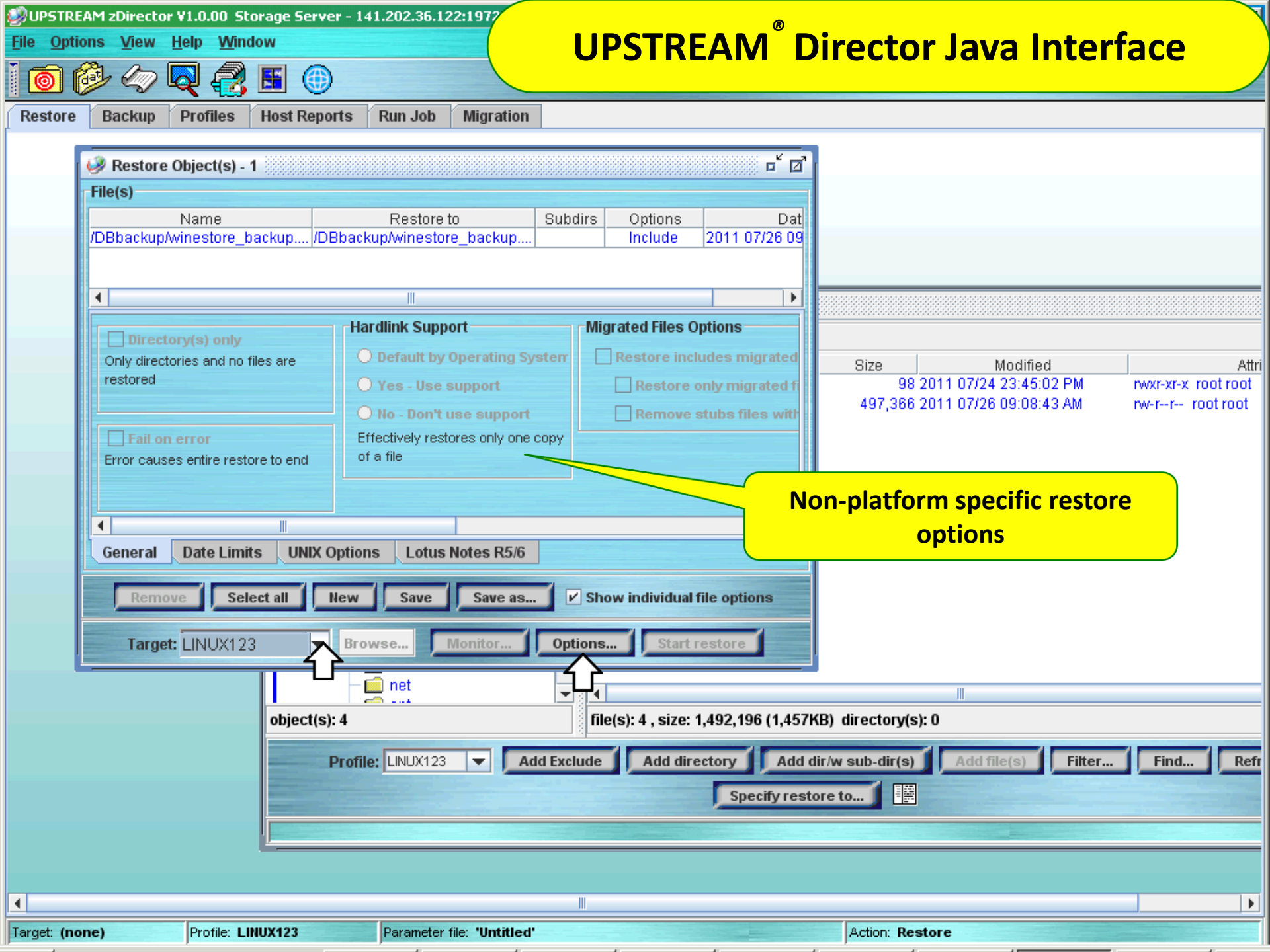
UPSTREAM® Director Java Interface



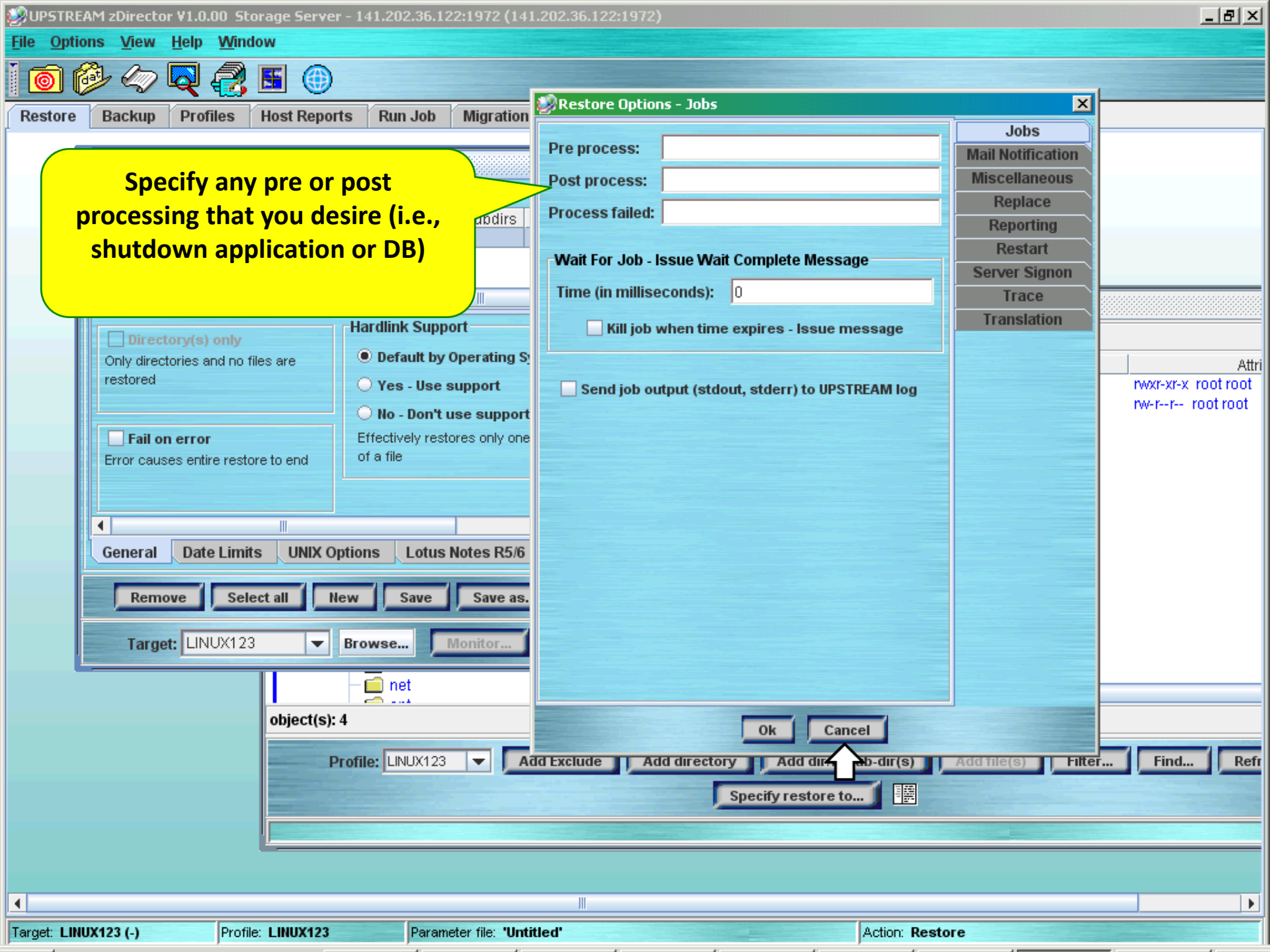
UPSTREAM® Director Java Interface

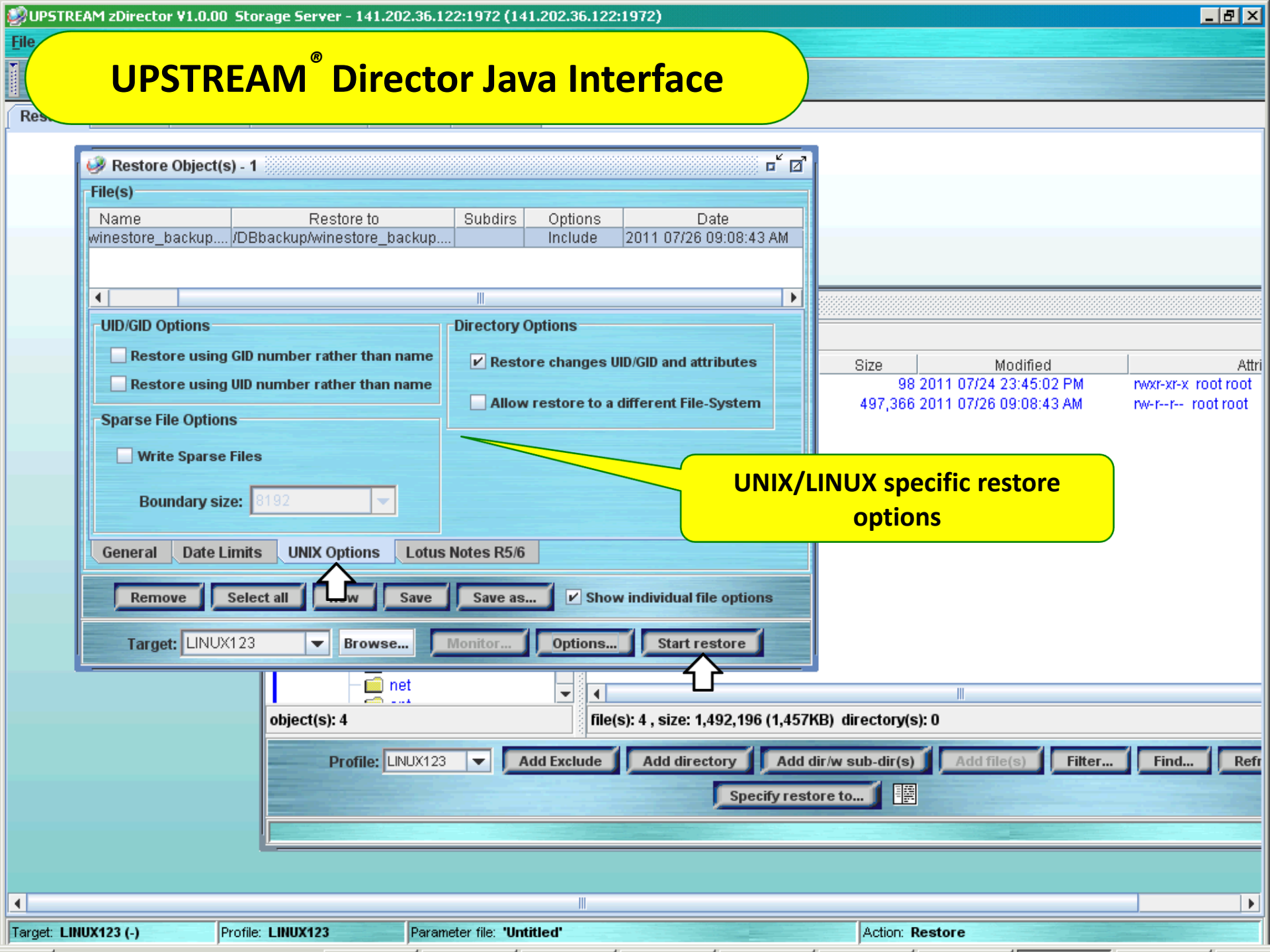


UPSTREAM® Director Java Interface

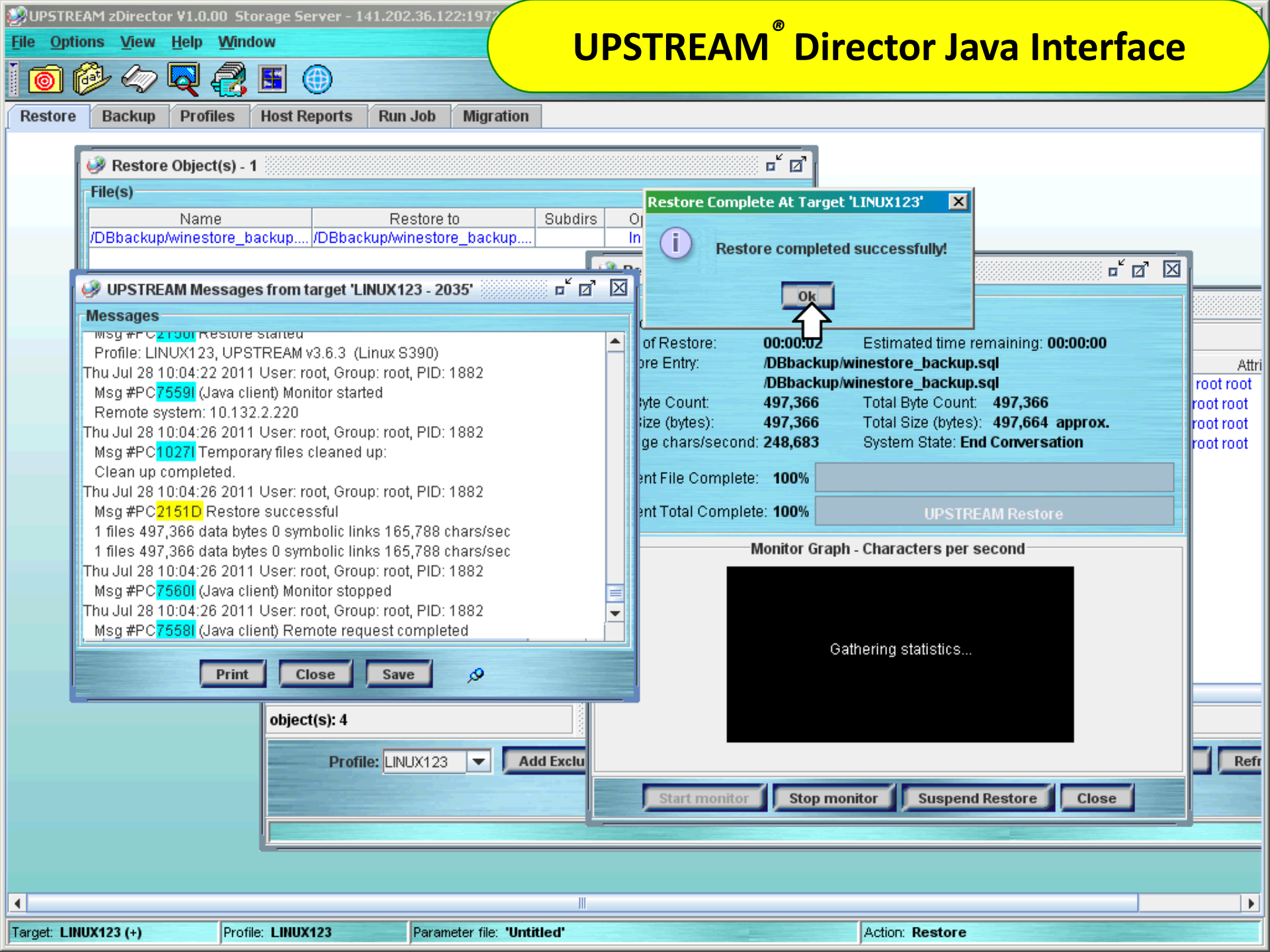


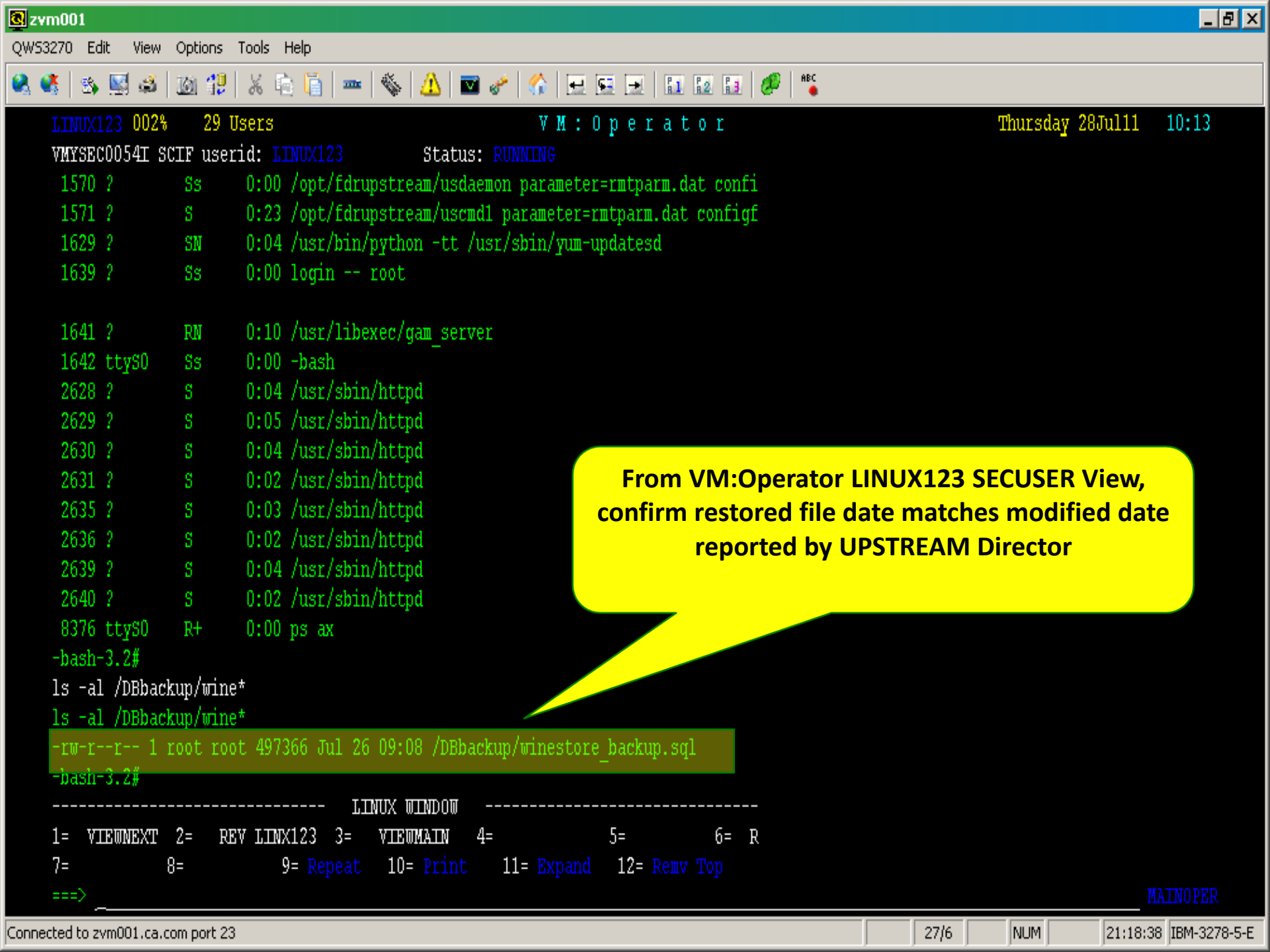
Non-platform specific restore options

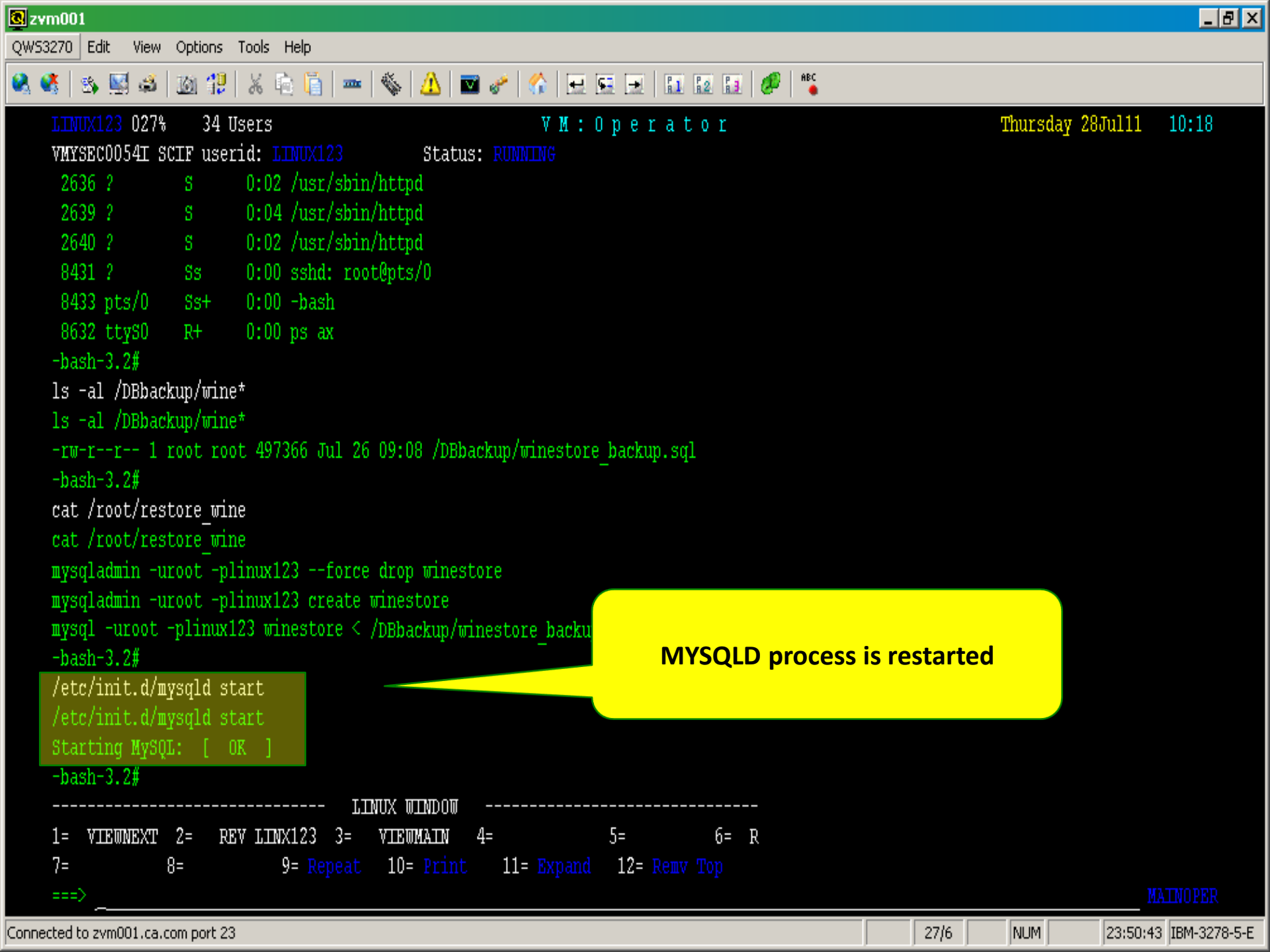

UPSTREAM zDirector V1.0.00 Storage Server - 141.202.36.122:1972 (141.202.36.122:1972)
File Options View Help Window
Restore Backup Profiles Host Reports Run Job Migration
Specify any pre or post processing that you desire (i.e., shutdown application or DB)
Restore Options - Jobs
Jobs
Mail Notification
Miscellaneous
Replace
Reporting
Restart
Server Signon
Trace
Translation
Pre process:
Post process:
Process failed:
Wait For Job - Issue Wait Complete Message
Time (in milliseconds):
0
Kill job when time expires - Issue message
Send job output (stdout, stderr) to UPSTREAM log
Ok
Cancel
Directory(s) only
Only directories and no files are restored
Fail on error
Error causes entire restore to end
Hardlink Support
Default by Operating Sy
Yes - Use support
No - Don't use support
Effectively restores only one of a file
General
Date Limits
UNIX Options
Lotus Notes R5/6
Remove
Select all
New
Save
Save as.
Target: LINUX123
Browse...
Monitor...
net
object(s): 4
Profile: LINUX123
Add Exclude
Add directory
Filter...
Find...
Specify restore to...
Attri
rwxr-xr-x root root
rw-r--r-- root root
Target: LINUX123 (-)
Profile: LINUX123
Parameter file: 'Untitled'
Action: Restore

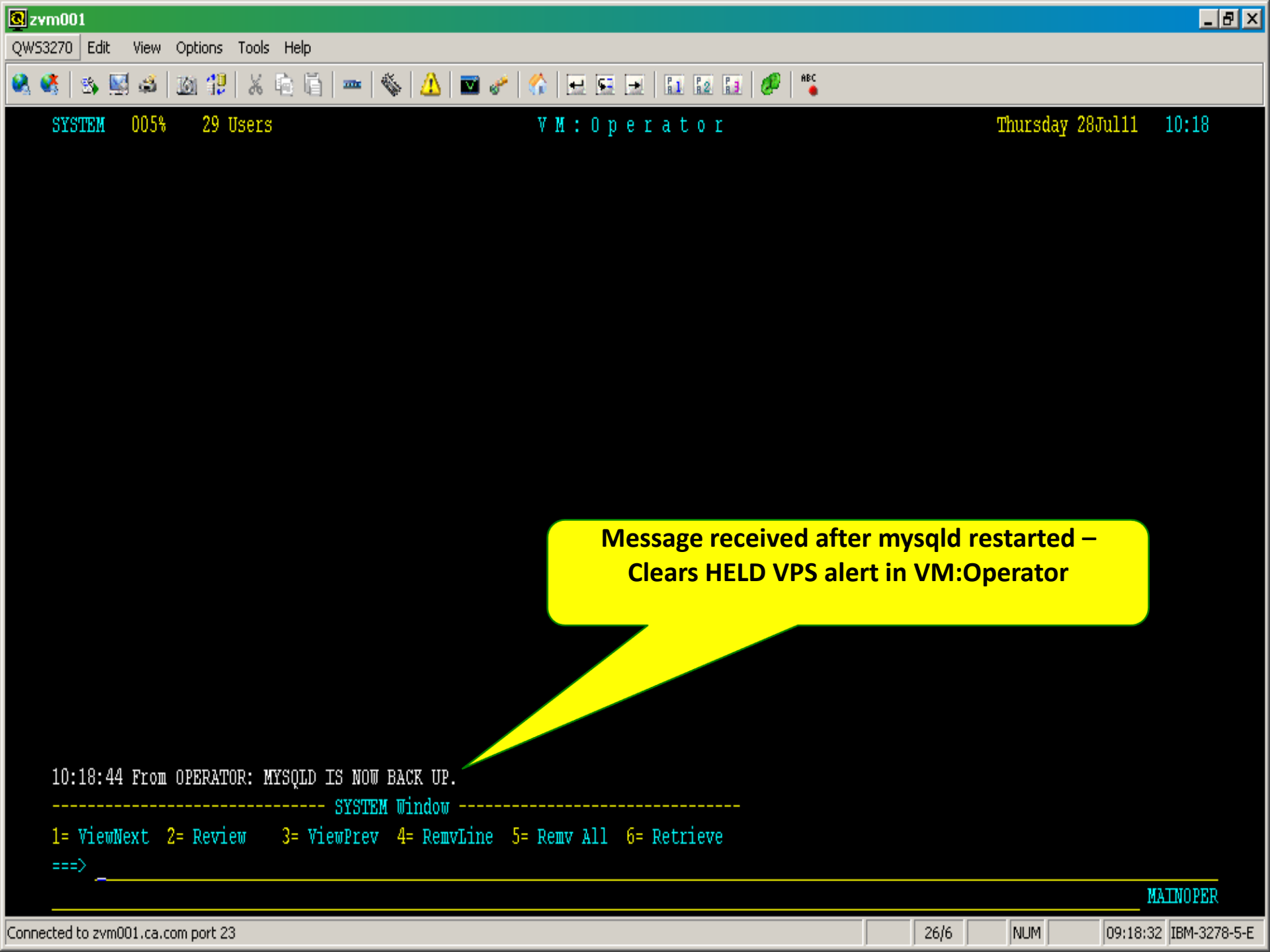

UPSTREAM® Director Java Interface
UPSTREAM zDirector V1.0.00 Storage Server - 141.202.36.122:1972 (141.202.36.122:1972)
File
Restore Object(s) - 1
File(s)
Name
Restore to
Subdirs
Options
Date
winestore_backup....
/DBbackup/winestore_backup....
Include
2011 07/26 09:08:43 AM
UID/GID Options
Restore using GID number rather than name
Restore using UID number rather than name
Directory Options
Restore changes UID/GID and attributes
Allow restore to a different File-System
Sparse File Options
Write Sparse Files
Boundary size:
8192
General
Date Limits
UNIX Options
Lotus Notes R5/6
Remove
Select all
Save
Save as...
Show individual file options
Target:
LINUX123
Browse...
Monitor...
Options...
Start restore
Size
Modified
Attri
98 2011 07/24 23:45:02 PM
rwxr-xr-x root root
497,366 2011 07/26 09:08:43 AM
rw-r--r-- root root
UNIX/LINUX specific restore options
net
object(s): 4
file(s): 4 , size: 1,492,196 (1,457KB) directory(s): 0
Profile:
LINUX123
Add Exclude
Add directory
Add dir/w sub-dir(s)
Add file(s)
Filter...
Find...
Specify restore to...
Target: LINUX123 (-)
Profile: LINUX123
Parameter file: 'Untitled'
Action: Restore

UPSTREAM® Director Java Interface

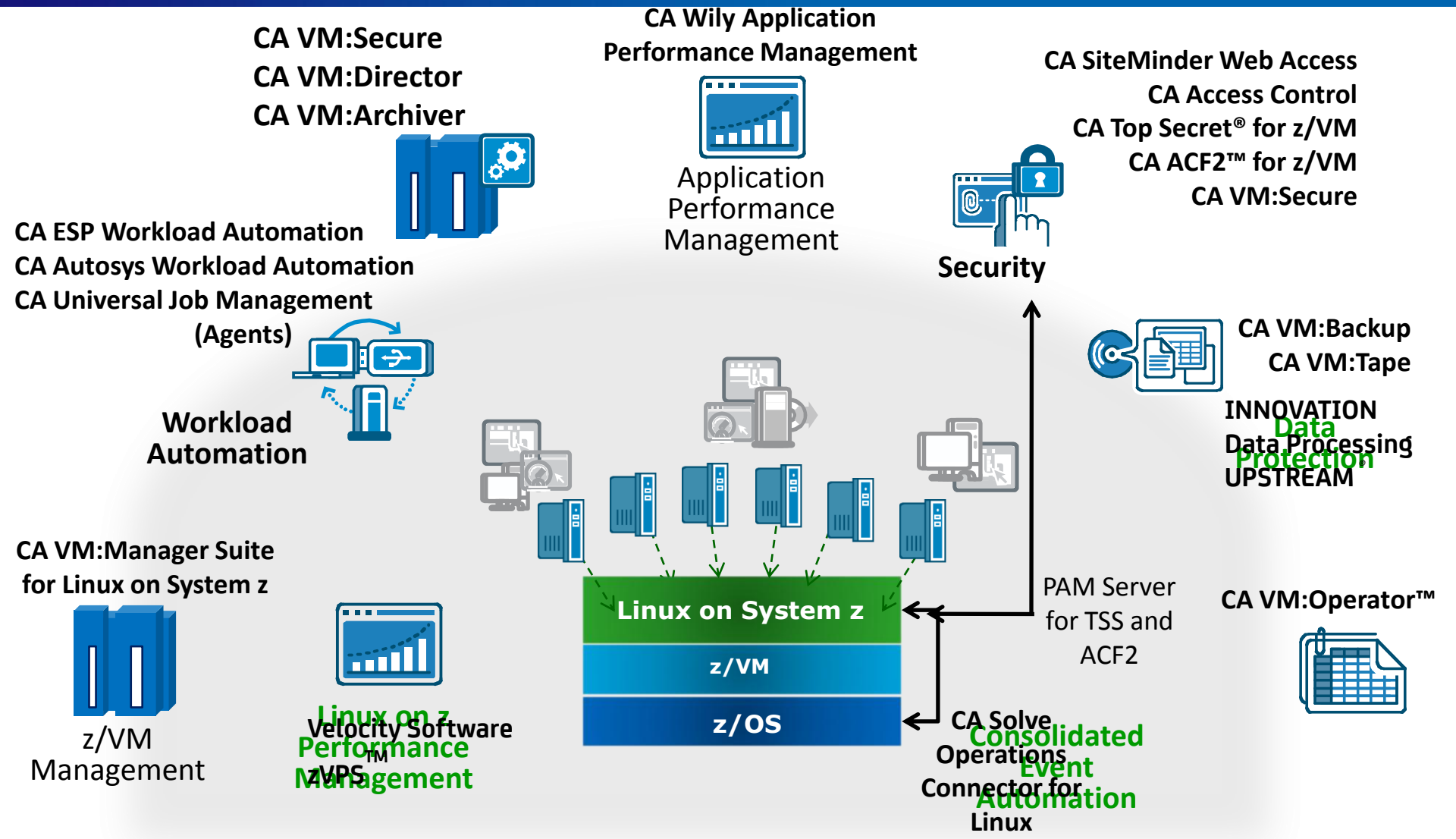



zvm001
QWS3270 Edit View Options Tools Help
LINUX123 002% 29 Users VM:Operator Thursday 28Jul11 10:13
VMYSEC0054I SCIF userid: LINUX123 Status: RUNNING
1570 ? Ss 0:00 /opt/fdrupstream/usdaemon parameter=rmtparm.dat confi
1571 ? S 0:23 /opt/fdrupstream/uscmd1 parameter=rmtparm.dat configf
1629 ? SN 0:04 /usr/bin/python -tt /usr/sbin/yum-updatesd
1639 ? Ss 0:00 login -- root
1641 ? RN 0:10 /usr/libexec/gam_server
1642 ttyS0 Ss 0:00 -bash
2628 ? S 0:04 /usr/sbin/httpd
2629 ? S 0:05 /usr/sbin/httpd
2630 ? S 0:04 /usr/sbin/httpd
2631 ? S 0:02 /usr/sbin/httpd
2635 ? S 0:03 /usr/sbin/httpd
2636 ? S 0:02 /usr/sbin/httpd
2639 ? S 0:04 /usr/sbin/httpd
2640 ? S 0:02 /usr/sbin/httpd
8376 ttyS0 R+ 0:00 ps ax
-bash-3.2#
ls -al /DBbackup/wine*
ls -al /DBbackup/wine*
-rw-r--r-- 1 root root 497366 Jul 26 09:08 /DBbackup/winestore_backup.sql
-bash-3.2#
LINUX WINDOW
1= VIEWNEXT 2= REV LINX123 3= VIEWMAIN 4= 5= 6= R
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top
===>
MAINOPER
From VM:Operator LINUX123 SECUSER View, confirm restored file date matches modified date reported by UPSTREAM Director
Connected to zvm001.ca.com port 23
27/6
NUM
21:18:38
IBM-3278-5-E


zvm001
QWS3270 Edit View Options Tools Help
LINUX123 027% 34 Users V M : O p e r a t o r Thursday 28Jul11 10:18
VMYSEC0054I SCIF userid: LINUX123 Status: RUNNING
2636 ? S 0:02 /usr/sbin/httpd
2639 ? S 0:04 /usr/sbin/httpd
2640 ? S 0:02 /usr/sbin/httpd
8431 ? Ss 0:00 sshd: root@pts/0
8433 pts/0 Ss+ 0:00 -bash
8632 ttyS0 R+ 0:00 ps ax
-bash-3.2#
ls -al /DBbackup/wine*
ls -al /DBbackup/wine*
-rw-r--r-- 1 root root 497366 Jul 26 09:08 /DBbackup/winestore_backup.sql
-bash-3.2#
cat /root/restore_wine
cat /root/restore_wine
mysqladmin -uroot -plinux123 --force drop winestore
mysqladmin -uroot -plinux123 create winestore
mysql -uroot -plinux123 winestore < /DBbackup/winestore_backu
-bash-3.2#
/etc/init.d/mysqld start
/etc/init.d/mysqld start
Starting MySQL: [OK]
-bash-3.2#
LINUX WINDOW
1= VIEWNEXT 2= REV LINX123 3= VIEWMAIN 4= 5= 6= R
7= 8= 9= Repeat 10= Print 11= Expand 12= Remv Top
===>
MAINOPER
MYSQLD process is restarted
Connected to zvm001.ca.com port 23
27/6
NUM
23:50:43
IBM-3278-5-E


zvm001
QWS3270 Edit View Options Tools Help
SYSTEM 005% 29 Users
V M : O p e r a t o r
Thursday 28Jul11 10:18
Message received after mysqld restarted –
Clears HELD VPS alert in VM:Operator
10:18:44 From OPERATOR: MYSQLD IS NOW BACK UP.
SYSTEM Window
1= ViewNext 2= Review 3= ViewPrev 4= RemvLine 5= Remv All 6= Retrieve
===>
MAINOPER
Connected to zvm001.ca.com port 23
26/6
NUM
09:18:32
IBM-3278-5-E

The CA Solution Portfolio



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CA z/VM Product Suite Update and Roadmap

ca technologies

CA VM:Manager™ Suite for Linux on System z

Current releases of CA z/VM products simplify environment

Security

CA Top Secret® for z/VM
CA ACF2™ for z/VM
CA VM:Secure

Disk Storage Assets

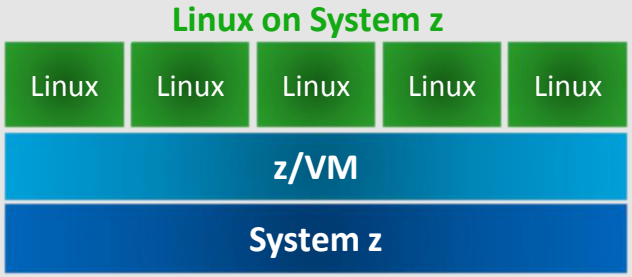
CA VM:Account™
CA VM:Director™

Storage Backup/Recovery

CA VM:Backup™
CA VM:Archiver

Resource Chargeback

CA VM:Account™



Performance Tuning

CA Explore® Performance Management for z/VM

CA VM:Operator™

Operations Management

CA VM:Operator™
CA VM:Schedule™
CA VM:Spool™
CA VM:Sort™
CA VM:Batch™

Provisioning

CA VM:Director™
CA VM:Secure
CA VM:Archiver™

Tape Management

CA VM:Tape™
CA Dynam/T for z/VM

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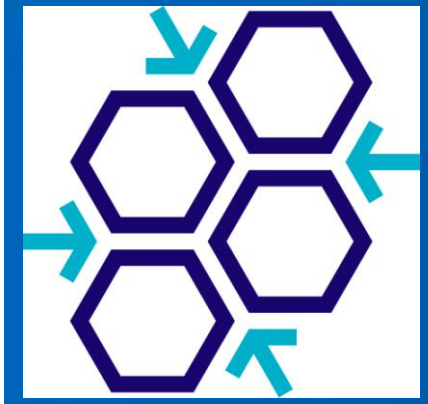
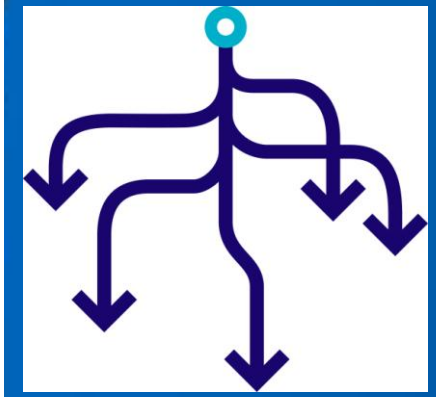
CA z/VM solutions and Mainframe 2.0
reduce complexity – speed implementation



standardize on IBM VMSES/E to install and service all CA z/VM products

- industry standard procedures reduce "experience pool" requirements
- consistent look and feel enables products to be managed without a significant skills investment
- common procedures for all products reduce complexity, speed implementation



CA Mainframe VM Product Manager

- install and maintain products in single library, deploy wherever needed
- automatic provisioning of servers with CA VM:Secure or CA VM:Director

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infrastructure enhancements

common code infrastructure improvements:

- **additional products ported to exploit CA VM Common Nucleus collection of services and routines**
- **single z/VM object directory reader program called by all products requiring directory look-up services**

using common code across products enables CA Technologies to deliver new features, enhancements, and problem solutions more quickly and efficiently

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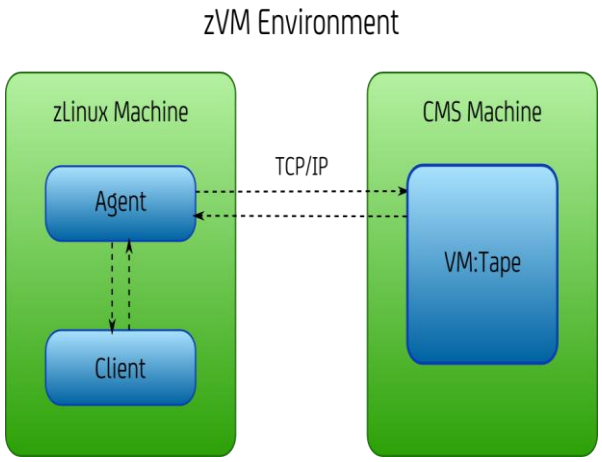
CA VM:Tape Linux on System z Interface features

- Exploit VM:Tape functionality in Linux applications
- Mount tape from Linux on System z
- Hardware support via IBM Linux kernel driver
- TCP/IP used for Linux to VM:Tape communication
- Shipped in standard RPM package



- Centralized tape management on Linux guest that does not expose sensitive interfaces (such as VMCP) to regular users
- Regular (non root) users are able to mount tapes
- After successful mount there are corresponding devices in /dev owned by the user who issued the mount
- Provides authorization handling for both mounted and saved tapes

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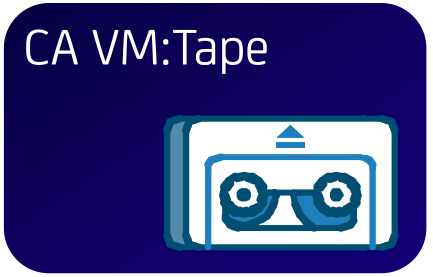
Additional CA VM:Tape enhancements



MOUNT command enhancement

- Use new user exit USREXIT9 to retrieve information about tape drive
- Enables operators to make decisions about automation and action routines

MOUNT and CANCEL message enhancements

- Real device address added to messages 0014I, 0051T, 0100I to enhance their use for automation purposes

VMTAPE QUERY enhancements

- QUERY VOLUME command displays additional information about tapes
- Display information about deleted tapes and tapes not in TMC if maintained in IBM or STK robotic tape subsystem

QUERY command authorization change

- OPERATOR authorization no longer required for QUERY, QUERY TAPES, and QUERY REQUESTS
- Users can obtain information about pending MOUNT and ALLOCATION requests

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additional CA VM:Manager Suite enhancements

CA VM:Account

- Toleration support for CPU type codes
- Cost table support for switch class devices

CA VM:Archiver

- SYSID resolution
- Additional linemode command
- Additional parameters passed to VMAEXIT1

CA VM:Backup

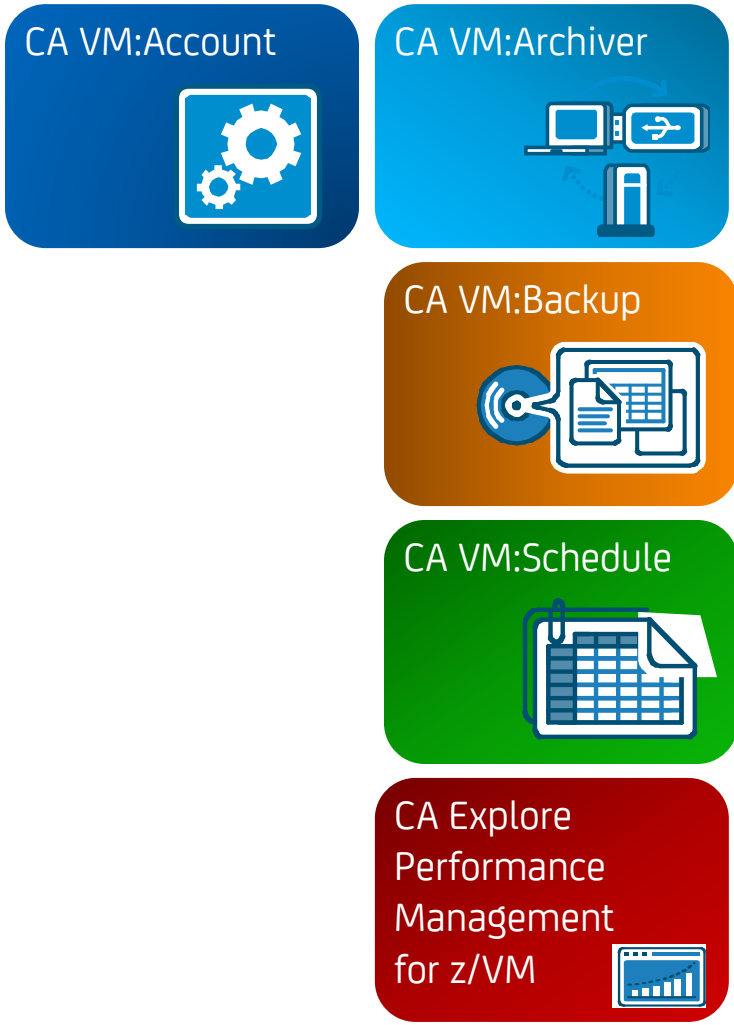
- Option EDRSUP default set to ON
- CA VM:Backup HiDRO Feature encryption support

CA VM:Schedule

- Passphrase and DMSPASS/DMSPWCHK support enables z/VM logon password phrases of up to 200 characters

CA Explore Performance Management for z/VM

- Data collection via IBM standard monitor records



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SSI Support

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CA VM:Secure Release 2.9 and 3.0 enhancements

VMCIPHER and file encrypting logic and configuration of RC2 encryption removed

- ability to use obsolete encryption algorithms is removed
- promotes use of stronger encryption algorithms to improve security for sensitive data
- capability to encrypt data using DES, Triple DES, and AES is retained

VLAN rules support

- support added for controlling access to Guest LANs and virtual switches
- access requests made explicitly by issuing the COUPLE command or implicitly by defining a value for the LAN operand on a NICDEF CP Directory statement
- COUPLE rule definition replaces GRANT operand on a SET VSWITCH or SET LAN command
- For a VLAN-aware virtual switch, set of VLAN ID values may be defined to restrict access to specified IEEE VLANs
- COUPLE RULE option grants PROMISCUOUS mode access for special purpose network debugging programs

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CA VM:Secure Release 2.9 and 3.0 enhancements

New Commands –

The following commands are new and support managing the directory in an SSI environment.

- **SUBCONFIG**
  - Use the SUBCONFIG command from an IDENTITY user to bring up a screen presenting the names of all SUBCONFIG entries, which are part of the user virtual machine definition. Users can modify their SUBCONFIG entries from this screen.
- **CHGENTRY**
  - Use the CHGENTRY command to convert a USER directory entry into an IDENTITY entry or an IDENTITY entry into a USER entry.
- **CMD**
- Use the CMD command to route another command to an Agent product server in a Single System Image environment. The routed command will execute on the specified Agent server.
- **TAKEOVER**
  - The TAKEOVER command converts one of the Agent product servers into a Master product server.

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CA VM:Secure Release 2.9 and 3.0 enhancements

New Configuration Record

The following PRODUCT CONFIG record is new and supports CA VM:Secure in an SSI environment.

- **SSINODE**
  - Use the SSINODE record to identify the names of members of a Single System Image complex, and to specify that the Object Directory is to be compiled in an SSI-Ready format.

New Utility

The SSIENAB EXEC is a new utility that converts all BUILD statements in the source directory from BUILD ON * to BUILD ON "membername". This utility is used when converting from a NON-SSI environment to a SSI environment.

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CA VM:Secure Release 2.9 and 3.0 enhancements

Changes to Existing Features

- The ADDENTRY command syntax has been changed to support the addition of a SUBCONFIG into the directory.
- The QUERY command has been updated to add an SSI parameter

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CA VM:Director 3.0 enhancements

New Commands

The following commands are new and support managing the directory in an SSI environment.

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  - Use the SUBCONFIG command from an IDENTITY user to bring up a screen presenting the names of all SUBCONFIG entries, which are part of the user virtual machine definition. Users can modify their SUBCONFIG entries from this screen.
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- The QUERY command has been updated to add an SSI parameter

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CA VM:Spool Version 1.8 enhancements

Single System Image Support

- CA VM:Spool can run in an SSI complex. We recommend all CA VM:Spool service virtual machines to be installed as an IDENTITY user on each member of the complex where CA VM:Spool functionality is required. Spool files from other systems can be accessed from CA VM:Spool screens as long as the user that the spool files belong to is logged on the system.
- However, during the backup and accounting operations, the CA VM:Spool service virtual machine only works with spool files that originated on the system where the service virtual machine runs.

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CA VM:Spool Version 1.8 enhancements

New Close Date and Close Time Selection Criteria

- CA VM:Spool r1.6 SP3 introduces two new spool file selection criteria to VM:Spool, Close Date and Close Time, representing the date and time a spool file was closed. Close Date and Close Time can now be used as criterion for listing, purging, sorting, cataloging, manipulating, backing-up, and restoring spool files.
- As a result of adding Close Date and Close Time criteria the following additions have been made:
- Two new fields, Close Dt and Close Tm, have been added to the SPOOLIST, SPOOLALL, SPOOLSEL, and SELECTS screens.
- Two new REXX variables, vml.closedt and vml.closetm, have been added to the variable list used with the GETLINE macro primitive and can now be specified in VM:Spool user macros.
- Two new tokens, closedate and closetime, have been added for use with the Purge User Exit.
- In addition, for clarification, column labels for open date and open time have been changed from Date and Time to Open Dt and Open Tm, respectively.

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CA VM:Spool Version 1.8 enhancements

Values of Close Date and Close Time

- If a spool file is open, the Close Dt and Close Tm values will display as blanks.
- When CA VM:Spool is reading the CP spool file blocks during SPOOLIST, SPOOLALL, and backup processing of spool files that are currently on the system, it is assumed that spool files having a Close Date and Close Time of binary zeros were open at the time of a system crash. These spool files will acquire the last IPL date and time as their Close Date and Time. CA VM:Spool does not overwrite this information in CP's spool file blocks. For example, if DISKACNT has spool files open at a time the system crashes, after the system is re-IPLed a list of those files will show the last IPL date and time as their close date and time. In addition, the Close Date and Close Time for those files will be written as the last IPL date and time in the catalog during backup processing.

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CA VM:Spool Version 1.8 enhancements

Logical Record Length (LRECL) Changes

- Logical record length (LRECL) of several VM:Spool system files have been increased.

File	Old LRECL	New LRECL
CATALOG	160	176
REQACTIV	160	176
REQUESTS	160	176
SELECTS	136	152
SNAPSHOT	160	176

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CA VM:Spool w VSEG Version 1.7 enhancements

Single System Image Support

- CA VM:Spool V/SEG-PLUS Feature can run in an SSI complex. We recommend all V/SEG-PLUS service virtual machines to be installed as an IDENTITY user on each member of the complex where V/SEG functionality is required. Spool files from other systems can be accessed from V/SEG screens as long as the user that the spool files belong to is logged on the system.

Linux and DCSS

- If a Linux guest uses discontiguous saved segments (DCSSs) and is to be relocated to another member of the SSI complex the same DCSS must exist on that system otherwise live guest relocation is not possible. The SPDISK utility of V/SEG-PLUS can be used to back up a DCSS used by Linux and restore it on another SSI member.

The UNPURGER Service Virtual Machine

- SSI copy files can now be unpurged. To support this feature an UNPURGER SVM must be running on all members of the SSI complex. When an SSI copy file is purged it is transferred to the UNPURGER SVM on the SSI member where the spool file originated from. Spool files that were unpurged can only be restored on their respective system of origin.

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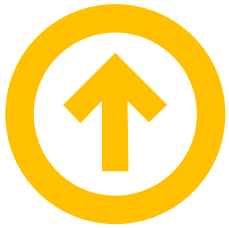
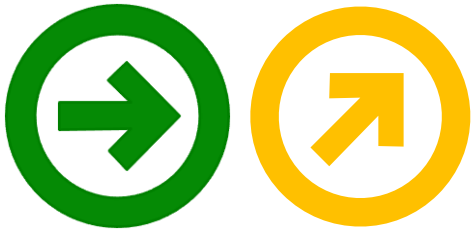
Roadmap Overview

- Day One support for future z/VM and Linux on System z distributions
- Continued exploitation of z/VM Single System Image
- Deliver additional products in IBM VMSES/E format in support of CA's Next-Generation Mainframe Management strategy
  - CA Dynam/T Tape Management for z/VM
  - CA VM:XMENU
  - CA VTERM
  - CA Top Secret and CA ACF2
- Deliver enhancements to improve Linux guest management and as a foundation for Cloud solutions
- Deliver enhancements in response to customer demand





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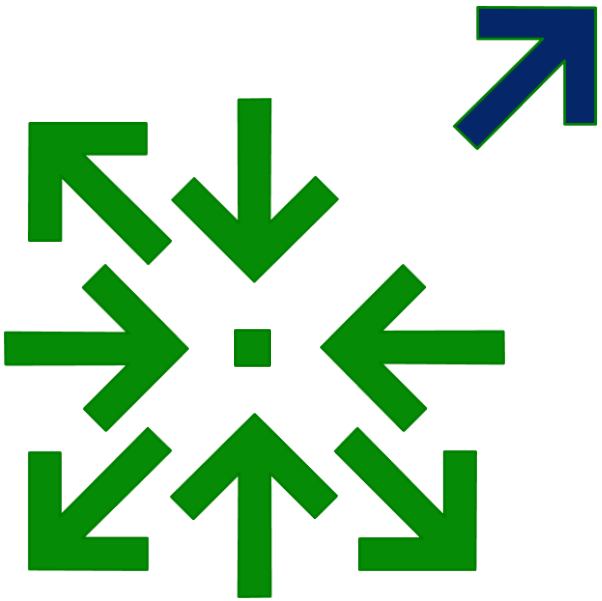
Improve capability to manage Linux on System z guests



- Integration of zVPS and UPSTREAM for Linux on System z with CA VM:Manager Suite to enhance management of z/VM and Linux on System z environments
  - modernize the user interfaces
  - simplify reporting capabilities
  - Automate and simplify Linux on System z provisioning
- CA VM:Operator enhancements to allow simpler and more secure automated management of Linux on System z guests

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Questions ???

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http://www.ca.com/us/mainframe-linux.aspx

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