

Teaching With zClouds

**A conversation that starts with 3 IBM
Champions, focused on enabling the next
generation(s) of Mainframers!**

Session ID: 31818

Session Start: 2/26/2025 1:15:00 PM

Session End: 2/26/2025 2:15:00 PM

Room: Baltimore 4

Meet The Hosting IBM Champions



Leonard J Santalucia
Vicom Infinity,
A Converge Company
CTO Mainframe, AI, Cloud,
Analytics, Mobile, Security,
IBM Champion &
Chairperson of Linux
Foundation Open Mainframe
Project



Cameron Seay, Ph.D.
Adjunct Instructor, East
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IBM Champion
Founder, CEO EMMA
<https://emma.foundation/>
COBOL Working Group:
[https://lists.openmainfra](https://lists.openmainframeproject.org/g/wg-cobol)
[meproject.org/g/wg-](https://lists.openmainframeproject.org/g/wg-cobol)
[cobol](https://lists.openmainframeproject.org/g/wg-cobol)



Kurt Acker
Linux on Velocity (zLOV)
Architect,
Velocity Software
Sir Kurt, Angler of New
Technologies and IBM
Champion

Company Overview

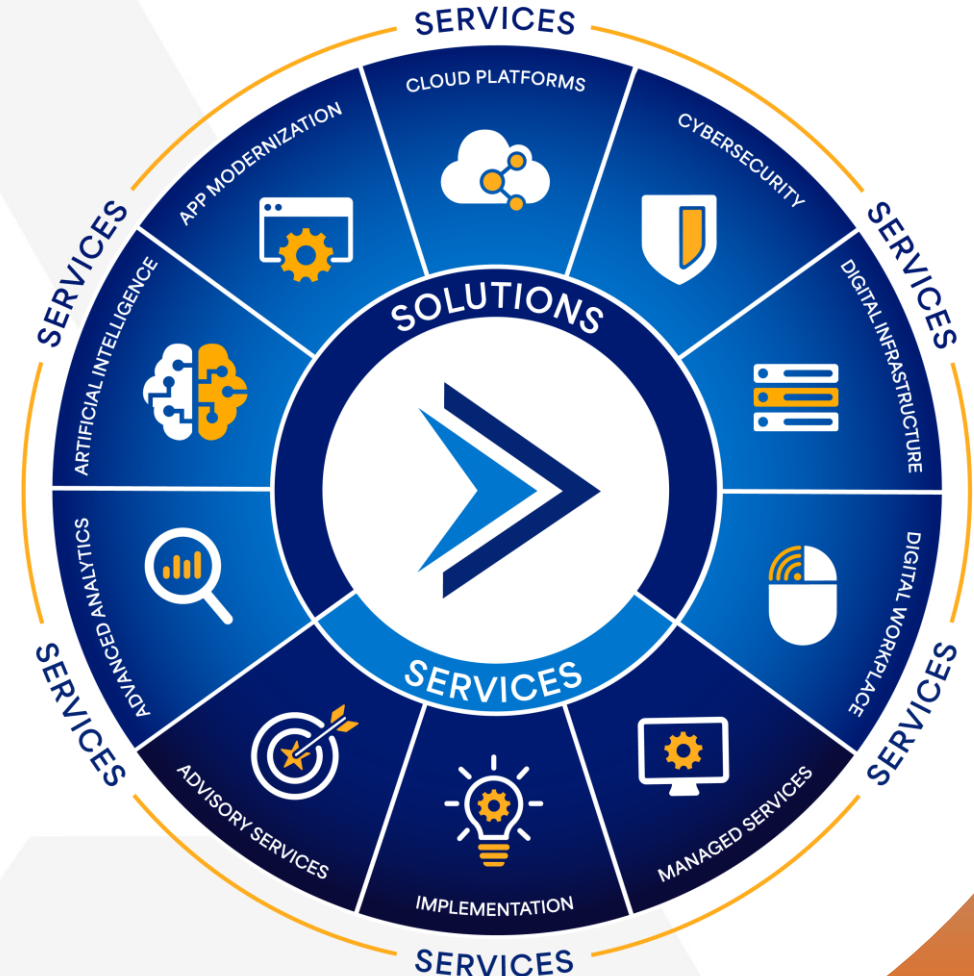
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Converge supports these solutions with **advisory**, **implementation**, and **managed services** expertise across all major IT vendors in the marketplace.

convergetp.com

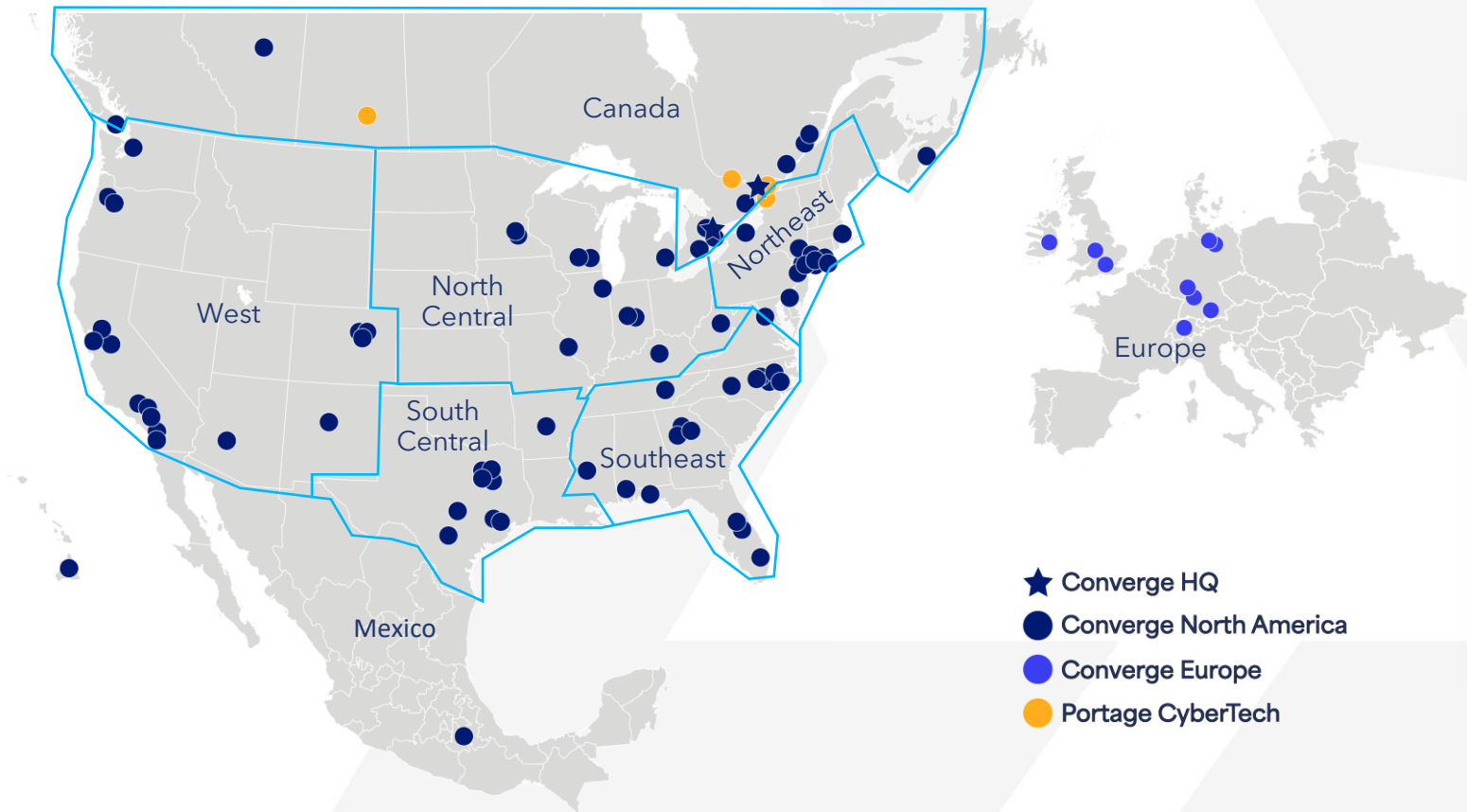


IT & Cloud Solutions •



Converge Platform

Scaled Footprint with Strong Partner Relationships and Capabilities



60+ Global Office Locations	500+ Global Sales Personnel	1,500+ Global Technical Resources
100+ Pre-Sales Solution Architects	50 Solution Specialists	
with		
1,000+ Certifications	4,000+ Customers	

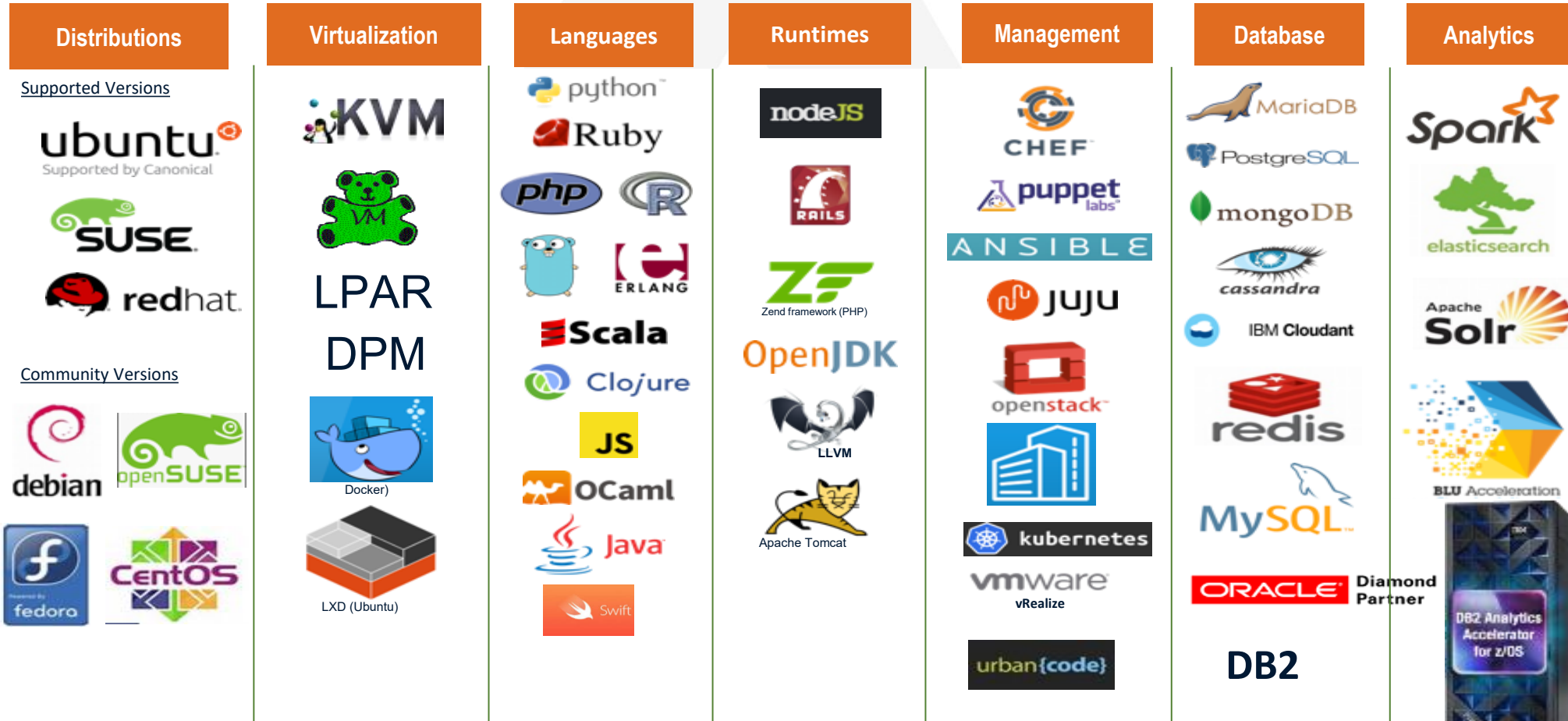
Converge Mainframe Services



The Converge IBM zSystems team has spent over three decades in the IBM mainframe and high-end storage market. Our experience and passion for this technology is unparalleled.

Members of our team have developed many of the models, studies, and methodologies that are widely used throughout the IBM community. This depth of experience and our deep technical skills give our clients a tremendous advantage in deploying mainframe-based solutions to address today's increasingly complex business and IT challenges.

Converge Breadth and Depth of Skills



Why Choose Converge?



- **Top North American IBM Platinum Business Partner for IBM zSystems**
- **Innovation Center of Excellence that delivers new IBM zSystems and other leading-edge technology solutions**
- **Unparalleled expertise in IBM Z and related solutions, including storage, networks, security, disaster recovery, resiliency, and others**
- **Dedication to successful client engagements. Each deployment is unique and customized**
- **Chair of the Linux Foundation Open Mainframe Project Governing Board since its inception**



Velocity Software Inc. (VSI)

- **VSI works with IBM, IBM BP's and universities to provide the environments required for teaching the next generation of successful mainframers.**
- **We make our software stack available along with support for the required environments.**
- **When needed, that includes access to our system running z/VM, Linux, z/OS and VSE.**

zVPS

PERFORMANCE SUITE

THE WORLD'S LEADING PERFORMANCE MANAGEMENT SOLUTION FOR Z/VM WITH LINUX AND/OR VSE. NEWLY ADDED SUPPORT FOR Z/OS PLUS NO-CHARGE MONITORING FOR X86 LINUX AND WINDOWS.



zPRO

CLOUD MANAGEMENT

SOLUTION FOR MODERNIZING THE Z/VM PLATFORM, ADDING ON-PREM CLOUD SUPPORT WITH WEB-BASED CONTROLS FOR Z/VM SYSTEM MANAGEMENT PLUS LPAR CLONING AND ANSIBLE PLAYBOOKS USING VELOCITY'S HIGHLY AVAILABLE SMAPI-FREE API'S.



zTUNE

SUPPORT SUBSCRIPTION

VELOCITY SOFTWARE'S ELITE PERFORMANCE SUPPORT SERVICE THAT CREATES AUTOMATED DAILY REPORTS WITH RECOMMENDED ACTIONS



zVRM

RESOURCE MANAGER

REAL-TIME MANAGEMENT FACILITY FOR Z/VM WITH LINUX THAT AUTOMATES SYSTEM SETTINGS USING KNOWLEDGE-BASED INTELLIGENCE TO TUNE WORKLOAD REQUIREMENTS AND OPTIMIZE OVERALL SYSTEM PERFORMANCE.



**The z/VM and Linux
Performance Management
Company
Since 1988**



East Carolina University (ECU): Cam Seay



ECU is a major regional university located in Greenville, NC. It has appx 30k students and is known for its medical school. Cam has been teaching at the College of Engineering and Technology since 2019.

Northern Illinois University (NIU): Geoffrey Decker



NIU has a similar profile, and has been a national leader in education and research since 1899

**The technical section of this presentation is prepared by
EMMA R&D:
Jeffery Brown, Christopher Petty- co directors.**

Eli Madison Memorial Apprenticeship (EMMA)



EMMA has two pieces to the foundation program

The first pre-apprenticeship, the second apprenticeship

The pre-apprenticeship includes training, resume review, coaching, and introductions to clients with apprenticeship positions.

The training is not lecture/quiz, it is topic-base videos, lab specific videos, and labs to be completed on the appropriate platform - z/OS, z/VM, z/LOV

EMMA Training



Mainframe Intro Class Lecture 1:

✓ Done

Password: lctn3210!



Mainframe Intro Class, Lecture 2

✓ Done

Password: lctn3210!

EMMA Training



Apprentice Lab 3, Move/Copy



Apprentice Lab 4, Create a dataset



JCL Lab 1, Pt 1



JCL Lab 1, Pt 2



EMMA Training



Lab 4 Create a dataset

✓ Done

Opened: Monday, 9 December 2024, 12:00 AM

Due: Monday, 3 March 2025, 12:00 AM



Apprentice Lab 5 Velocity -JCL Lab 1

✓ Done

Opened: Wednesday, 11 December 2024, 12:00 AM

Due: Monday, 3 March 2025, 12:00 AM



Apprentice Lab 6 JCL Lab 2 Velocity

✓ Done

EMMA Training - ISPF

Menu Utilities Compilers Options Status Help

ISPF Primary Option Menu

0	Settings	Terminal and user parameters	User ID . : TRAIN13
1	View	Display source data or listings	Time. . . : 22:16
2	Edit	Create or change source data	Terminal. : 3278
3	Utilities	Perform utility functions	Screen. . : 1
4	Foreground	Interactive language processing	Language. : ENGLISH
5	Batch	Submit job for language processing	Appl ID . : ISP
6	Command	Enter TSO or Workstation commands	TSO logon : IKJACCNT
7	Dialog Test	Perform dialog testing	TSO prefix: TRAIN13
9	IBM Products	IBM program development products	System ID : V24C
10	SCLM	SW Configuration Library Manager	MVS acct. : IZUACCT
11	Workplace	ISPF Object/Action Workplace	Release . : ISPF 7.4
12	z/OS System	z/OS system programmer applications	
13	z/OS User	z/OS user applications	

Enter X to Terminate using log/list defaults

Option ==>

ONT INF

24 14

EMMA Training - ISPF 3.2

```
EMMA
Open Configure Copy Paste Print Erase Insert PA1 PA2 PA3 SysReq Clear F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 >>

Menu RefList Utilities Help
-----
Data Set Utility

A Allocate new data set          C Catalog data set
R Rename entire data set        U Uncatalog data set
D Delete entire data set        S Short data set information
blank Data set information      V VSAM Utilities

ISPF Library:
Project . . . _____      Enter "/" to select option
Group . . . _____        / Confirm Data Set Delete
Type . . . . _____

Other Partitioned, Sequential or VSAM Data Set:
Name . . . . . LAB4
Volume Serial . . . _____ (If not cataloged, required for option "C")
Data Set Password . . _____ (If password protected)

Option ==> a
F1=Help      F2=Split    F3=Exit    F7=Backward F8=Forward F9=Swap
F10=Actions  F12=Cancel
ONLINE                      26,31
```

EMMA Training - ISPF 3.2 Parameters

EMMA

Open Configure Copy Paste Print Erase Insert PA1 PA2 PA3 SysReq Clear F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 >>

Menu RefList Utilities Help

Allocate New Data Set

Data Set Name . . . : TRAIN13.LAB4

Management class . . . _____ (Blank for default management class)

Storage class . . . _____ (Blank for default storage class)

Volume serial . . . : 24ACAT (Blank for system default volume) **

Device type . . . _____ (Generic unit or device address) **

Data class . . . _____ (Blank for default data class)

Space units . . . : trks (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS)

Average record unit _____ (M, K, or U)

Primary quantity . . : 10 (In above units)

Secondary quantity . . : 5 (In above units)

Directory blocks . . : 10 (Zero for sequential data set) *

Record format . . . : FB

Record length . . . : 80

Block size . . . : 0

Data set name type : library (LIBRARY, HFS, PDS, LARGE, BASIC, * EXTREQ, EXTPREF or blank)

Data set version . . : _

Num of generations : _____

Extended Attributes _____ (NO, OPT or blank)

Expiration date . . . _____ (YY/MM/DD, YYYY/MM/DD)

Enter "/" to select option YY.DDD, YYYY.DDD in Julian form

_ Allocate Multiple Volumes DDDD for retention period in days or blank)

(* Specifying LIBRARY may override zero directory block)

(** Only one of these fields may be specified)

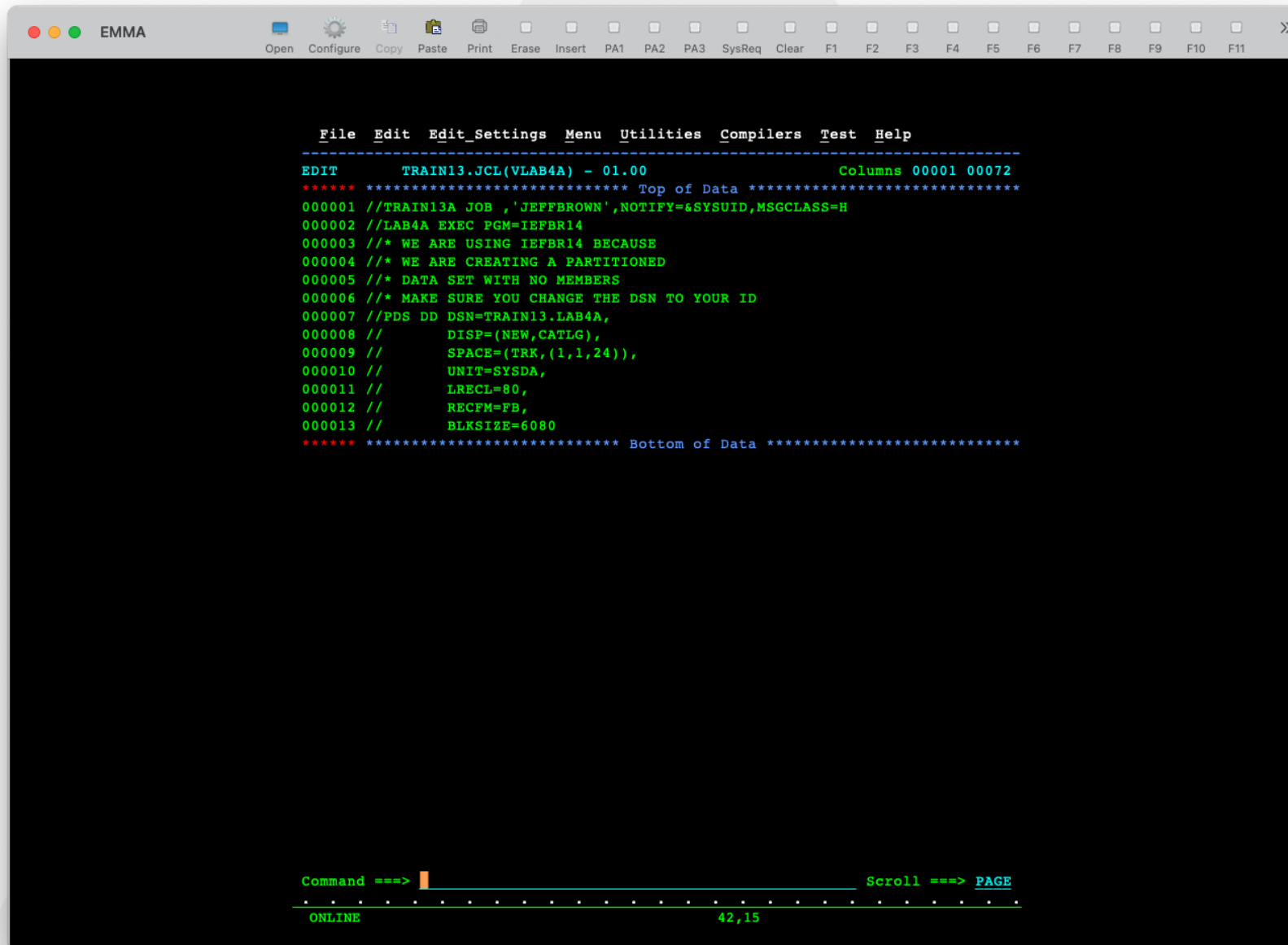
Command ==>

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Swap

F10=Actions F12=Cancel

ONLINE 12,80

EMMA Training - IEFBR14 JCL



```
File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT      TRAIN13.JCL(VLAB4A) - 01.00          Columns 00001 00072
***** Top of Data *****
000001 //TRAIN13A JOB  , 'JEFFBROWN', NOTIFY=&SYSUID, MSGCLASS=H
000002 //LAB4A EXEC  PGM=IEFBR14
000003 /* WE ARE USING IEFBR14 BECAUSE
000004 /* WE ARE CREATING A PARTITIONED
000005 /* DATA SET WITH NO MEMBERS
000006 /* MAKE SURE YOU CHANGE THE DSN TO YOUR ID
000007 //PDS DD DSN=TRAIN13.LAB4A,
000008 //      DISP=(NEW,CATLG),
000009 //      SPACE=(TRK,(1,1,24)),
000010 //      UNIT=SYSDA,
000011 //      LRECL=80,
000012 //      RECFM=FB,
000013 //      BLKSIZE=6080
***** Bottom of Data *****

Command ==> | Scroll ==> PAGE
. . . . .
ONLINE                                     42,15
```

EMMA Training - IEFBR14 SDSF Output

```
EMMA
Open Configure Copy Paste Print Erase Insert PA1 PA2 PA3 SysReq Clear F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 >>

. . . . .
Display Filter View Print Options Search Help
. . . . .
SDSF OUTPUT DISPLAY TRAIN13A JOB05313 DSID 2 LINE 0 COLUMNS 02- 81
COMMAND INPUT ==>
***** TOP OF DATA *****
JES2 JOB LOG -- SYSTEM V24C -- N

22.00.44 JOB05313 ---- THURSDAY, 26 DEC 2024 ----
22.00.44 JOB05313 IRR010I USERID TRAIN13 IS ASSIGNED TO THIS JOB.
22.00.44 JOB05313 ICH70001I TRAIN13 LAST ACCESS AT 21:59:41 ON THURSDAY, DECEM
22.00.44 JOB05313 $HASP373 TRAIN13A STARTED - INIT 1 - CLASS A - SYS
22.00.45 JOB05313 IEF403I TRAIN13A - STARTED - TIME=22.00.45
22.00.45 JOB05313 IEF404I TRAIN13A - ENDED - TIME=22.00.45
22.00.45 JOB05313 $HASP395 TRAIN13A ENDED - RC=0000
----- JES2 JOB STATISTICS -----
26 DEC 2024 JOB EXECUTION DATE
13 CARDS READ
51 SYSOUT PRINT RECORDS
0 SYSOUT PUNCH RECORDS
6 SYSOUT SPOOL KBYTES
0.00 MINUTES EXECUTION TIME
1 //TRAIN13A JOB , 'JEFFBROWN', NOTIFY=&SYSUID, MSGCLASS=H
IEFC653I SUBSTITUTION JCL - , 'JEFFBROWN', NOTIFY=TRAIN13, MSGCLASS=H
2 //LAB4A EXEC PGM=IEFBR14
/* WE ARE USING IEFBR14 BECAUSE
/* WE ARE CREATING A PARTITIONED
/* DATA SET WITH NO MEMBERS
/* MAKE SURE YOU CHANGE THE DSN TO YOUR ID
3 //PDS DD DSN=TRAIN13.LAB4A,
// DISP=(NEW,CATLG),
// SPACE=(TRK,(1,1,24)),
// UNIT=SYSDA,
// LRECL=80,
// RECFM=FB,
// BLKSIZE=6080
ICH70001I TRAIN13 LAST ACCESS AT 21:59:41 ON THURSDAY, DECEMBER 26, 2024
IEFA111I TRAIN13A IS USING THE FOLLOWING JOB RELATED SETTINGS:
SWA=BELOW, TIOT SIZE=32K, DSENQSHR=DISALLOW, GDGBIAS=JOB
IEF236I ALLOC. FOR TRAIN13A LAB4A
IGD100I 0221 ALLOCATED TO DDNAME PDS DATACLAS ( )
IEF142I TRAIN13A LAB4A - STEP WAS EXECUTED - COND CODE 0000
IEF285I TRAIN13.LAB4A CATALOGED
ONLINE 5,21
```

Velocity has allocated a number of resources to EMMA via zPRO and zLOV. Current allocations include:

- **A z/OS instance supporting over 90 users learning fundamentals of ISPF, COBOL coding, HLASM coding, compiling, linking, execution**
- **CMS General User creation and access allowing for training in CP/CMS commands, REXX coding and execution, execution COBOL and HLASM programs**
- **Linux on z/VM allowing the creation of various versions of Linux servers Ubuntu, Red Hat, SuSE, etc.**
- **Creation of a second level z/VM 7.3 guest**

EMMA and VSI - Resource Allocation

VELOCITY SOFTWARE zPRO Enterprise Cloud Management VSIVC1 (CloudDemo)

< > [Auto Arrange] [Refresh All] [Minimize All] [Close All]

Resource Summary

Line 1 of 4 [X] Search Criteria ...

System	Group	User	Servers	VCPUs	Memory(MB)	DASD	DASD Storage
VSIVC1	SEAYEDU	CAMSEAY	1	1	1024	0	0.00 M
VSIVC1	SEAYEDU	SEAYEDU	5	5	608	0	0.00 M
VSIVC1	SEAYEDU	totals	6	6	1632	0	0.00 M
VSIVC1	SEAYEDU	limits	60	120	81920	unlim	unlim

VELOCITY SOFTWARE

SINCE 1988

Settings

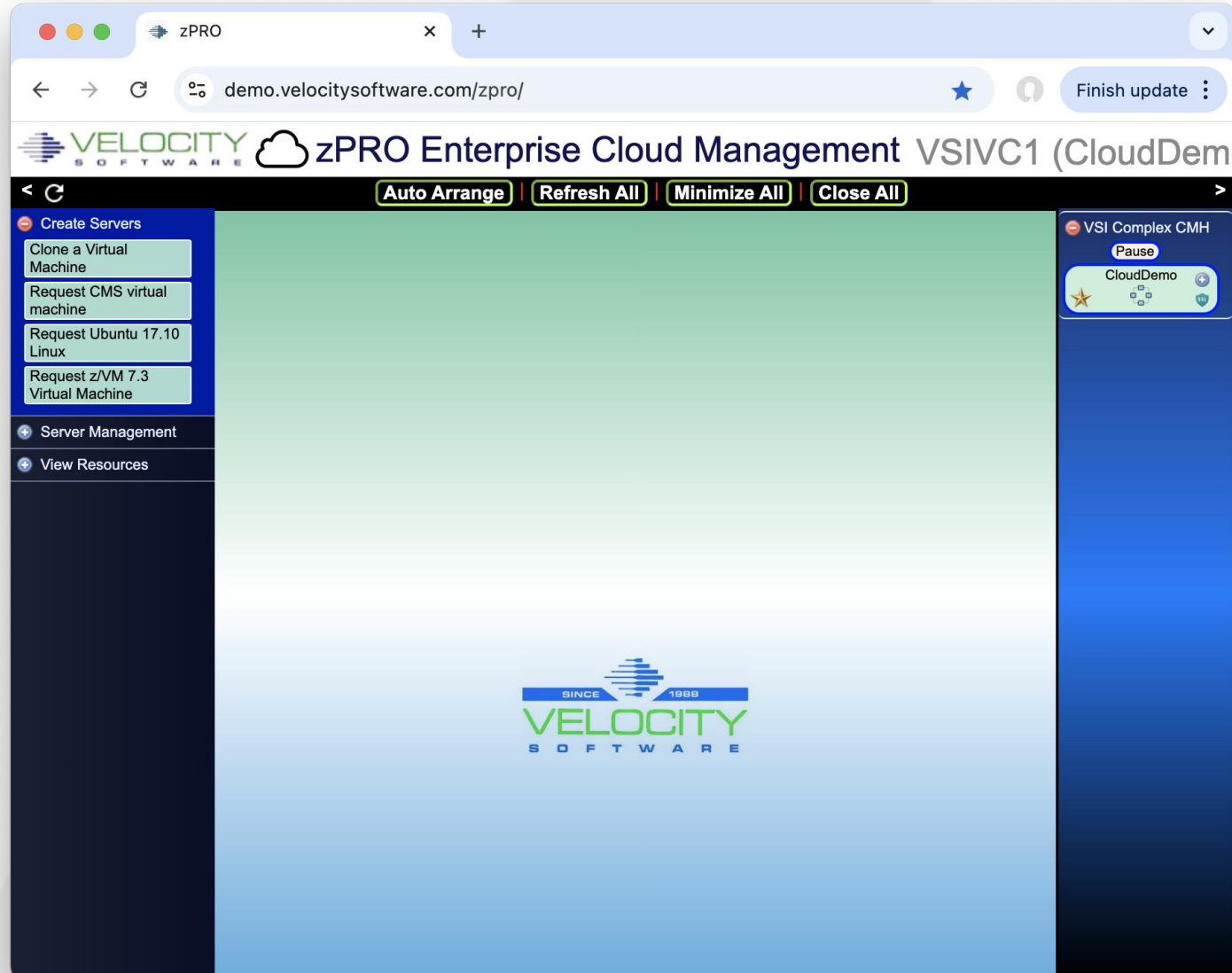
VSI Complex CMH

Pause

CloudDemo

Caption

EMMA and VSI - Server actions



EMMA Training

The screenshot shows a web browser window with two tabs: 'zPRO' and 'Course: EMMA Training Portal'. The address bar shows the URL '148.100.85.24/moodle/course/view.php?id=4' with a 'Not Secure' warning. The page header includes 'MLC' and navigation links 'Home', 'Dashboard', and 'My courses'. A user profile 'JB' is visible in the top right. The main content area lists two course items, each with a document icon, a title, a 'Done' button, and a date range.

Course: EMMA Training Portal

148.100.85.24/moodle/course/view.php?id=4

MLC Home Dashboard My courses JB

Apprentice Lab 11. REXX Lab 1

Done

Opened: Sunday, 3 November 2024, 12:00 AM
Due: Monday, 3 March 2025, 11:00 PM

Apprentice Assignment 12, REXX Lab 2

Done

Opened: Sunday, 3 November 2024, 12:00 AM
Due: Monday, 3 February 2025, 11:00 PM

THERE IS NO PDF FOR THIS LAB...

Using the REXX IF video as a guide (in the REXX videos module) create in your REXX library a simple REXX program that uses an if statement to evaluate if a condition is true or false. The program should do one thing if the condition is met another if the condition is not met. Example: If A equals 100 print out a message if A does not equal 100 print a different message

EMMA Training

zPRO Course: EMMA Training Portal

Not Secure 148.100.85.24/moodle/course/view.php?id=4 Finish update

MLC Home Dashboard My courses JB

Apprentice Assignment 13, REXX Lab 3 ✓ Done

Opened: Friday, 8 November 2024, 12:00 AM
Due: Monday, 3 March 2025, 12:00 AM

Apprentice Assignment 14 REXX Lab 4 ✓ Done

Opened: Friday, 8 November 2024, 12:00 AM
Due: Monday, 3 March 2025, 12:00 AM

Apprentice Assignment 15 REXX Lab 5 - Arrays ✓ Done

Opened: Friday, 8 November 2024, 12:00 AM
Due: Monday, 3 March 2025, 12:00 AM

This lab will teach you how to build dynamic arrays in REXX (an array is an array in any language). Please watch the

EMMA and VSI - CMS Screen 1

```
link tcpmaint 592 592
Ready; T=0.01/0.01 23:47:42
access 592 q
DMSACP723I Q (592) R/O
Ready; T=0.01/0.01 23:47:49
q disk

```

LABEL	VDEV	M	STAT	CYL	TYPE	BLKSZ	FILES	BLKS USED-(%)	BLKS LEFT	BLK TOTAL
GLDCMS	191	A	R/W	1	3390	4096	11	18-10	162	180
TCM592	592	Q	R/O	240	3390	4096	617	16085-37	27115	43200
MNT190	190	S	R/O	207	3390	4096	695	23681-64	13579	37260
MNT19E	19E	Y/S	R/O	500	3390	4096	1116	37407-42	52593	90000
MNT19D	19D	Z/Z	R/O	292	3390	1024	438	76568-53	67972	144540

```
Ready; T=0.01/0.01 23:47:55
ifconfig
ETH0      inet addr: 184.105.60.17 mask: 255.255.255.224
UP MTU: 8992
vdev: 041C type: QDIO ETHERNET portname: UNASSIGNED portnumber: 0
transport type: ETHERNET MAC address: 02-00-21-00-01-B7
ipv6: ENABLED
cpu: 0 forwarding: ENABLED ipv4 path MTU discovery: ENABLED
RX bytes: 3060460514 TX bytes: 567900347
IPv6 Addresses:

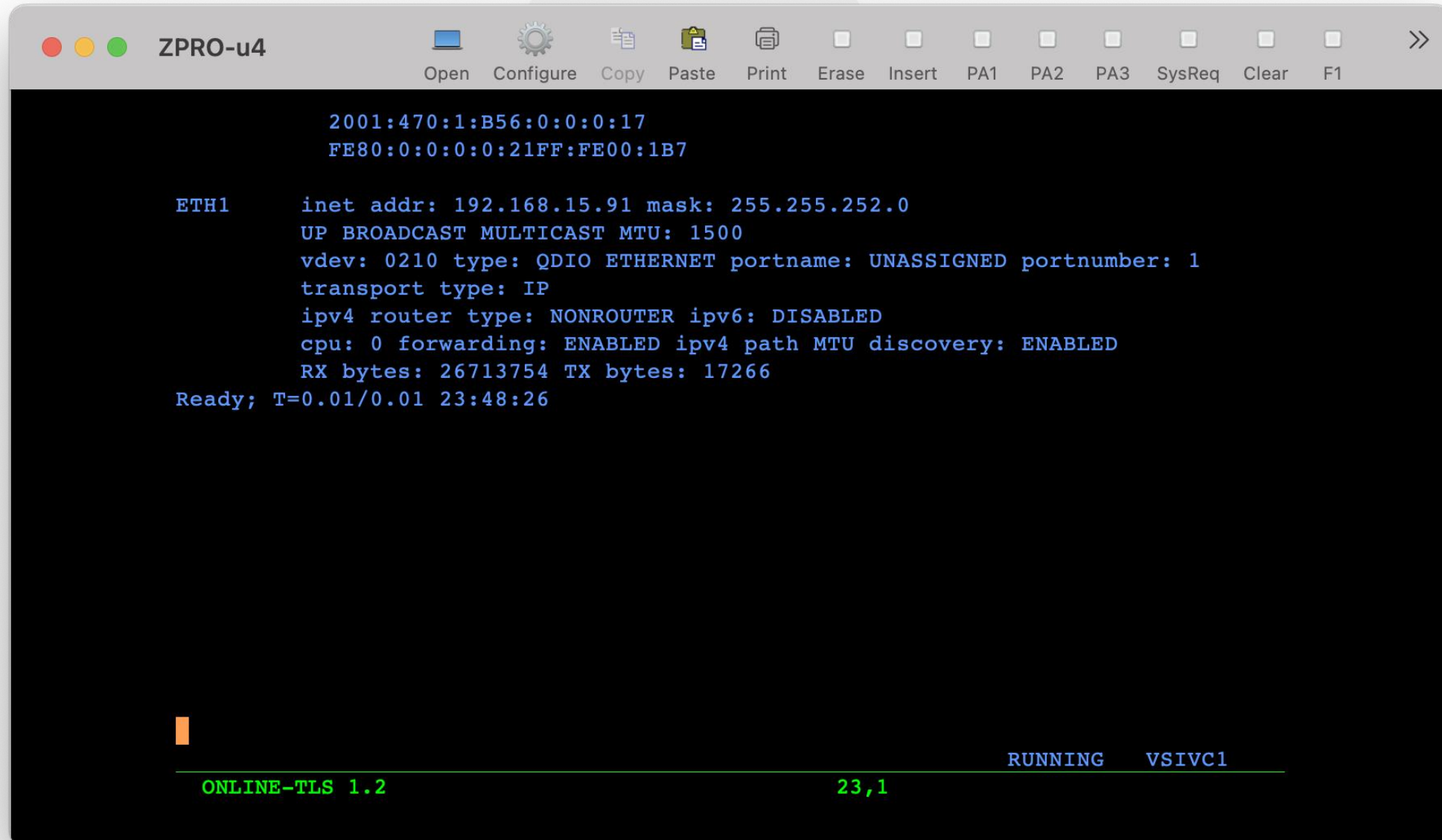

```

ONLINE-TLS 1.2

23,1

MORE... VSIVC1

EMMA and VSI - CMS Screen 2



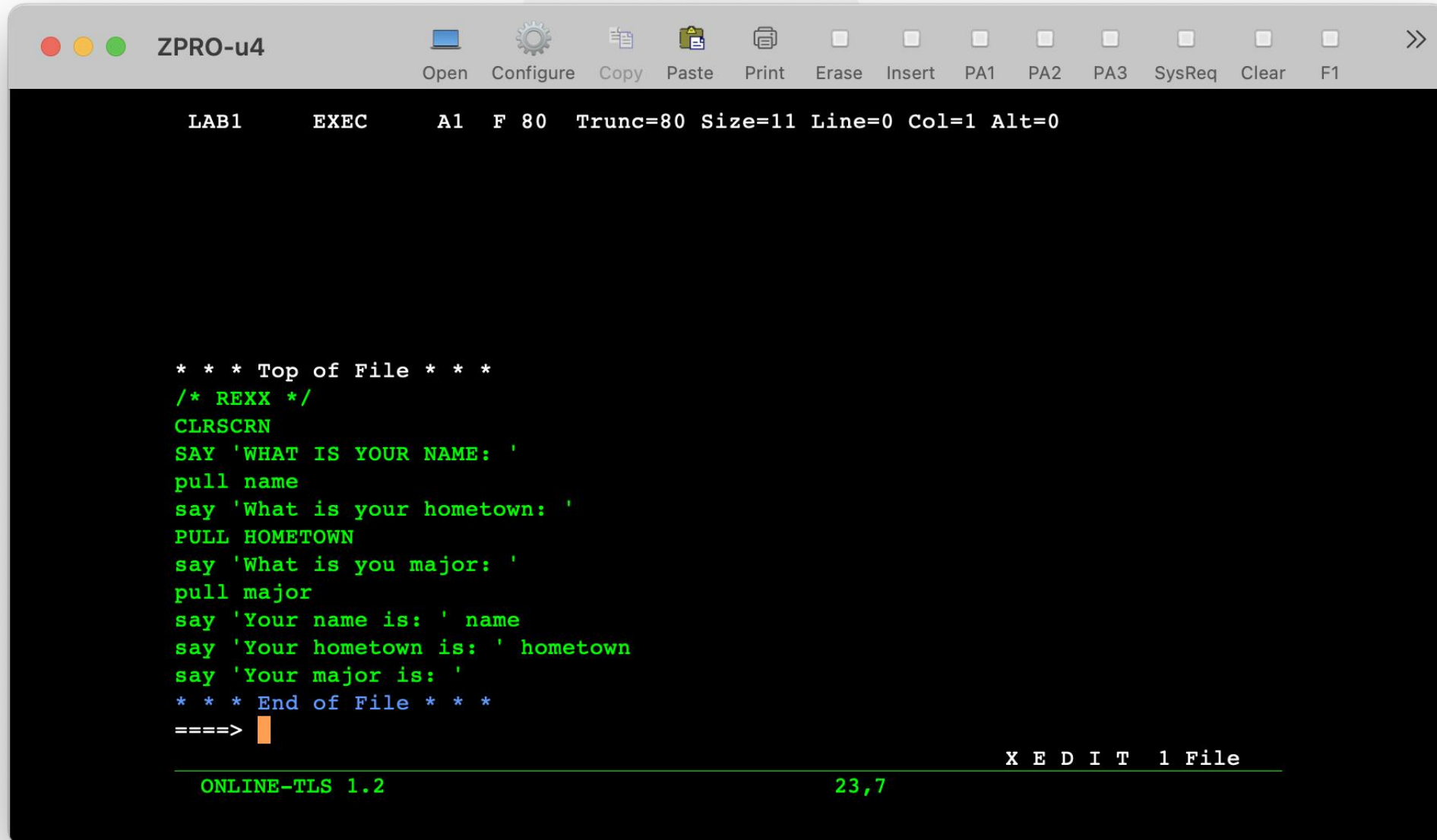
The screenshot shows a terminal window titled "ZPRO-u4" with a menu bar containing icons for Open, Configure, Copy, Paste, Print, Erase, Insert, PA1, PA2, PA3, SysReq, Clear, and F1. The terminal output displays the following information:

```
2001:470:1:B56:0:0:0:17
FE80:0:0:0:0:21FF:FE00:1B7

ETH1      inet addr: 192.168.15.91 mask: 255.255.252.0
UP BROADCAST MULTICAST MTU: 1500
vdev: 0210 type: QDIO ETHERNET portname: UNASSIGNED portnumber: 1
transport type: IP
ipv4 router type: NONROUTER ipv6: DISABLED
cpu: 0 forwarding: ENABLED ipv4 path MTU discovery: ENABLED
RX bytes: 26713754 TX bytes: 17266
Ready; T=0.01/0.01 23:48:26
```

At the bottom of the terminal, there is a status bar with a green bar on the left, the text "ONLINE-TLS 1.2" in green, "23,1" in green, "RUNNING" in blue, and "VSIVC1" in blue.

EMMA and VSI - CMS REXX Source



```
LAB1      EXEC      A1  F 80  Trunc=80 Size=11 Line=0 Col=1 Alt=0

* * * Top of File * * *
/* REXX */
CLRSCRN
SAY 'WHAT IS YOUR NAME: '
pull name
say 'What is your hometown: '
PULL HOMETOWN
say 'What is you major: '
pull major
say 'Your name is: ' name
say 'Your hometown is: ' hometown
say 'Your major is: '
* * * End of File * * *
====>
```

XEDIT 1 File

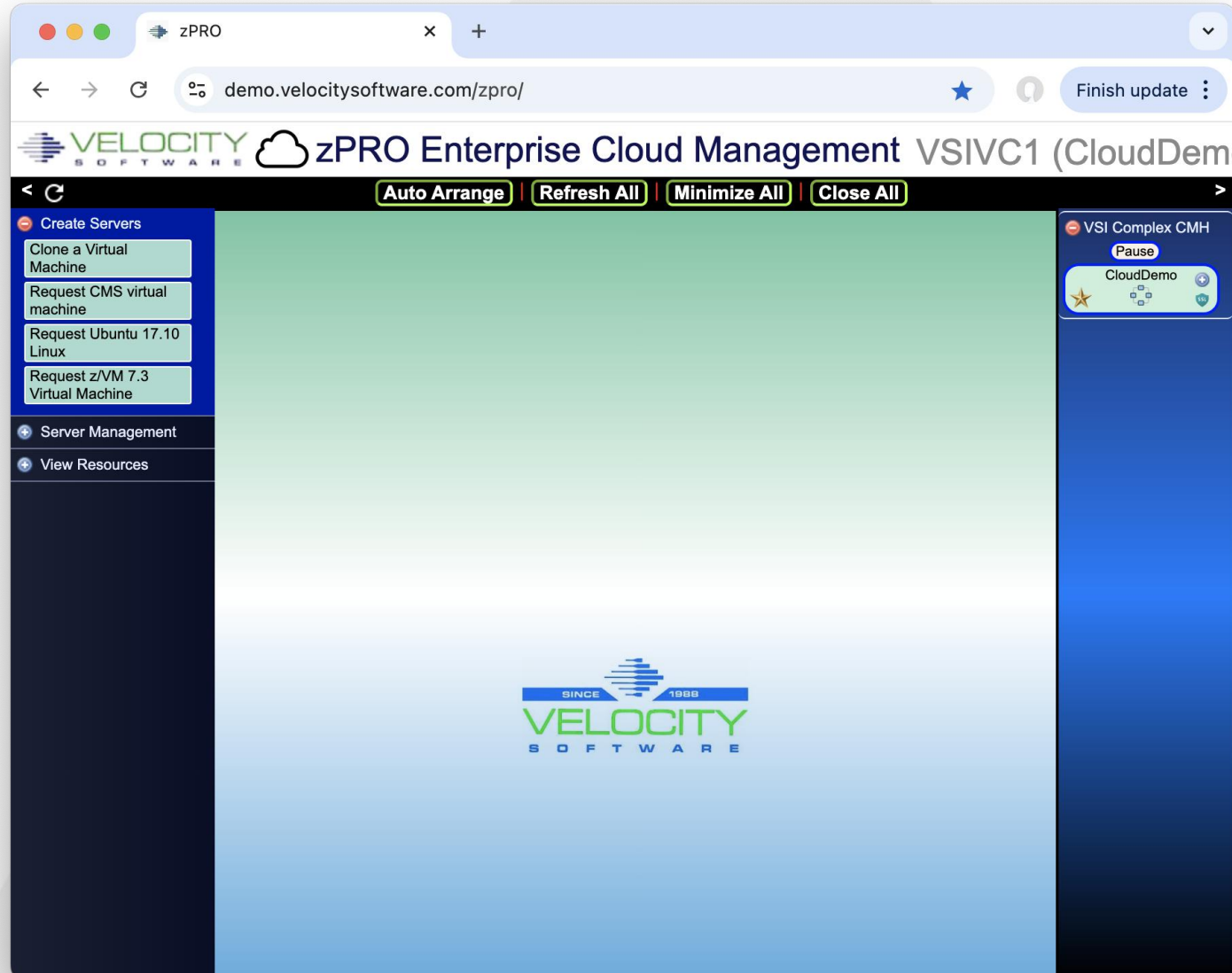
ONLINE-TLS 1.2 23,7

EMMA and VSI - REXX Execution

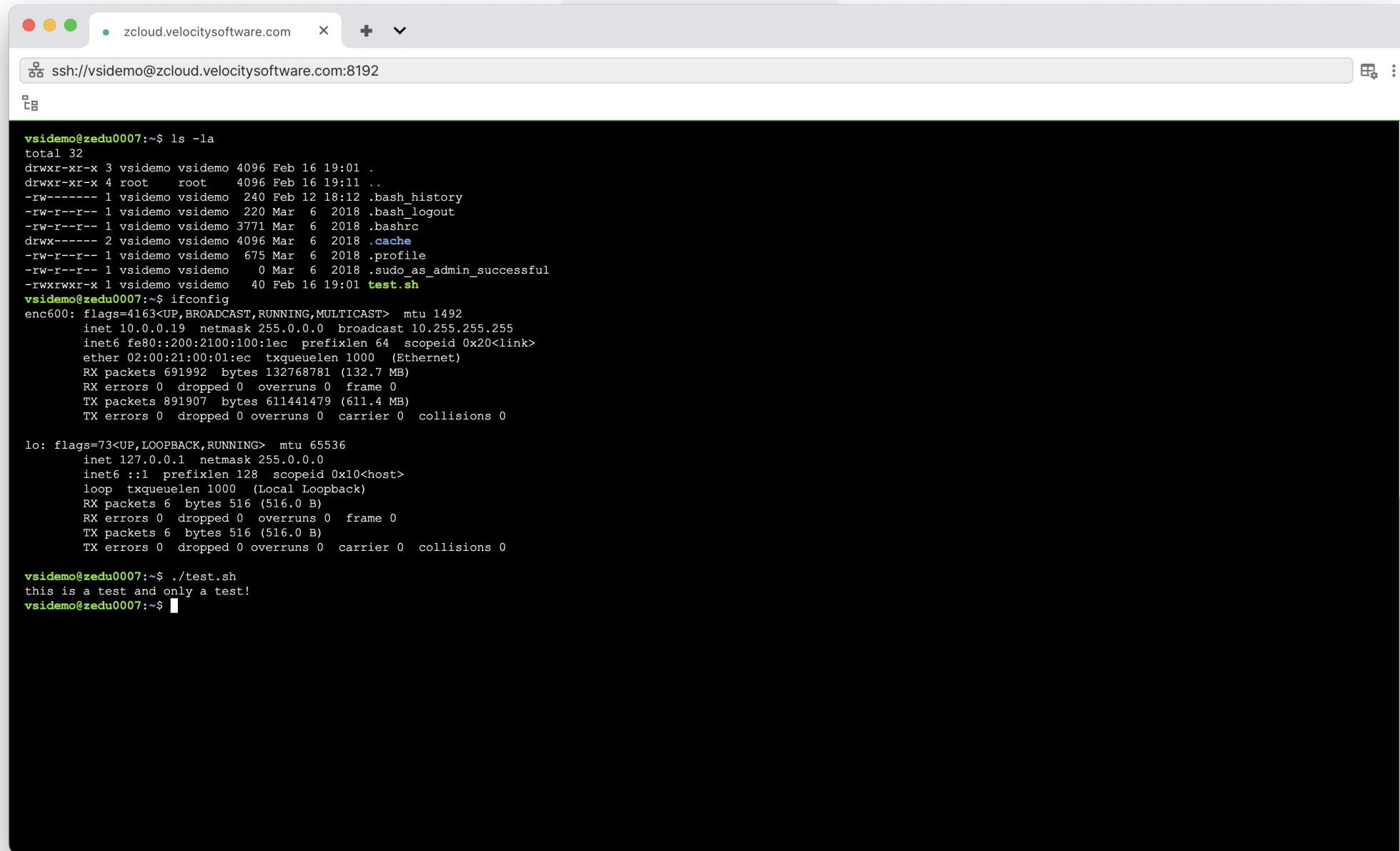
```
WHAT IS YOUR NAME:
jeff
What is your hometown:
peoria
What is you major:
fishing
Your name is:  JEFF
Your hometown is:  PEORIA
YOUR MAJOR IS:  FISHING
Ready; T=0.01/0.01 23:36:31
```

ONLINE-TLS 1.2 23,1 RUNNING VSIVC1

EMMA and VSI - zLOV - Ubuntu



EMMA and VSI - zLOV - Ubuntu



```
vsidemo@zedu0007:~$ ls -la
total 32
drwxr-xr-x 3 vsidemo vsidemo 4096 Feb 16 19:01 .
drwxr-xr-x 4 root     root     4096 Feb 16 19:11 ..
-rw----- 1 vsidemo vsidemo  240 Feb 12 18:12 .bash_history
-rw-r--r-- 1 vsidemo vsidemo  220 Mar  6 2018 .bash_logout
-rw-r--r-- 1 vsidemo vsidemo 3771 Mar  6 2018 .bashrc
drwx----- 2 vsidemo vsidemo 4096 Mar  6 2018 .cache
-rw-r--r-- 1 vsidemo vsidemo  675 Mar  6 2018 .profile
-rw-r--r-- 1 vsidemo vsidemo    0 Mar  6 2018 .sudo_as_admin_successful
-rwxrwxr-x 1 vsidemo vsidemo  40 Feb 16 19:01 test.sh

vsidemo@zedu0007:~$ ifconfig
enc600: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1492
    inet 10.0.0.19  netmask 255.0.0.0  broadcast 10.255.255.255
    inet6 fe80::200:2100:100:1ec  prefixlen 64  scopeid 0x20<link>
    ether 02:00:21:00:01:ec  txqueuelen 1000  (Ethernet)
    RX packets 691992  bytes 132768781 (132.7 MB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 891907  bytes 611441479 (611.4 MB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

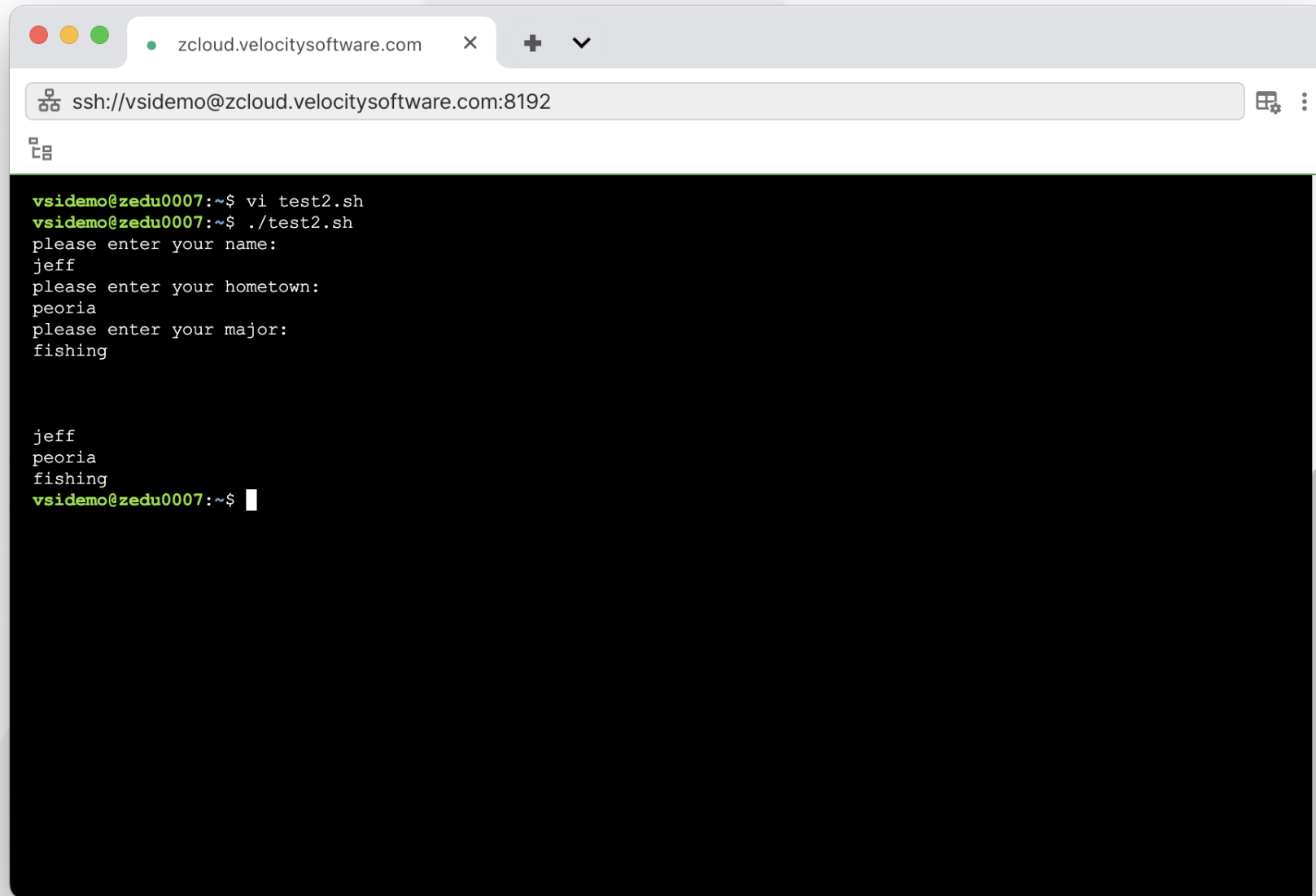
lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop txqueuelen 1000  (Local Loopback)
    RX packets 6  bytes 516 (516.0 B)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 6  bytes 516 (516.0 B)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

vsidemo@zedu0007:~$ ./test.sh
this is a test and only a test!
vsidemo@zedu0007:~$
```

EMMA and VSI - zLOV - Ubuntu Shell Script Source

[illegible]

EMMA and VSI - zLOV - Ubuntu Shell Script Execution

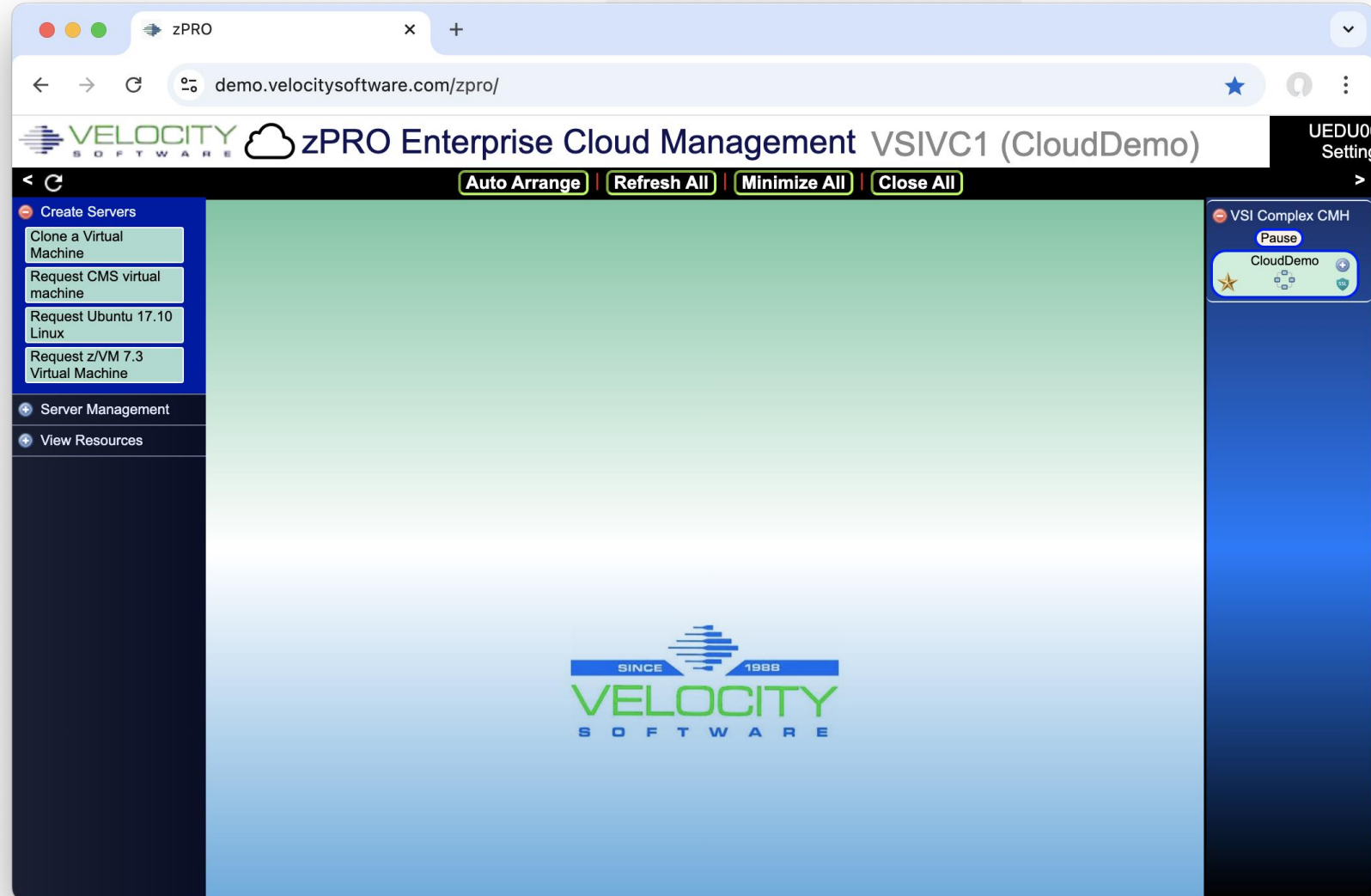


The screenshot shows a web browser window with the address bar displaying 'zcloud.velocitysoftware.com'. The main content area shows an SSH session with the following text:

```
vsidemo@zedu0007:~$ vi test2.sh
vsidemo@zedu0007:~$ ./test2.sh
please enter your name:
jeff
please enter your hometown:
peoria
please enter your major:
fishing

jeff
peoria
fishing
vsidemo@zedu0007:~$
```

EMMA/VS1 - Second Level VM



EMMA/VSI - Second Level VM

The screenshot displays the zPRO Enterprise Cloud Management interface in a web browser. The browser tab is labeled 'zPRO' and the address bar shows 'demo.velocitysoftware.com/zpro/'. The page title is 'zPRO Enterprise Cloud Management VSIVC1 (CloudDemo)'. The interface includes a sidebar with navigation options: 'Create Servers', 'Server Management' (with sub-options 'Change a Guest's Password' and 'Manage Owned Servers'), and 'View Resources'. The main content area shows a 'Server List for UEDU0002' window. This window has a toolbar with 'Auto Arrange', 'Refresh All', 'Minimize All', and 'Close All' buttons. Below the toolbar, there are status indicators: 'Line 1 of 2', 'Running', 'Down', and 'Changing State', along with a search bar. The server list is a table with columns: Sel, Server, Description, Hostname, IP Address, Owner, Group, and Expiration. It contains two entries: ZEDU0007 (UBUNTU 17.10 Linux for UEDU0002) and ZEDU0010 (z/VM 7.3 Guest for UEDU0002). At the bottom of the window, there are buttons for 'Actions', 'View Log', 'Details', 'Edit', and 'Chg Password'. On the right side of the interface, there is a 'VSI Complex CMH' section with a 'Pause' button and a 'CloudDemo' button.

Sel	Server	Description	Hostname	IP Address	Owner	Group	Expiration
☐	ZEDU0007	UBUNTU 17.10 Linux for UEDU0002	zedu0007	10.0.0.19	UEDU0002	SEAYEDU	8 May 2025 - 16:35:57
☐	ZEDU0010	z/VM 7.3 Guest for UEDU0002	zedu0010	10.0.0.28	UEDU0002	SEAYEDU	10 Jun 2025 - 12:15:44

EMMA/VS1 - Second Level VM

The screenshot displays the zPRO Enterprise Cloud Management interface in a web browser. The browser's address bar shows the URL `demo.velocitysoftware.com/zpro/`. The page title is "zPRO Enterprise Cloud Management VS1VC1 (CloudDemo)". The interface includes a sidebar with navigation options: "Create Servers", "Server Management" (with sub-options "Change a Guest's Password" and "Manage Owned Servers"), and "View Resources". The main content area is titled "Server List for UEDU0002" and features a table with the following data:

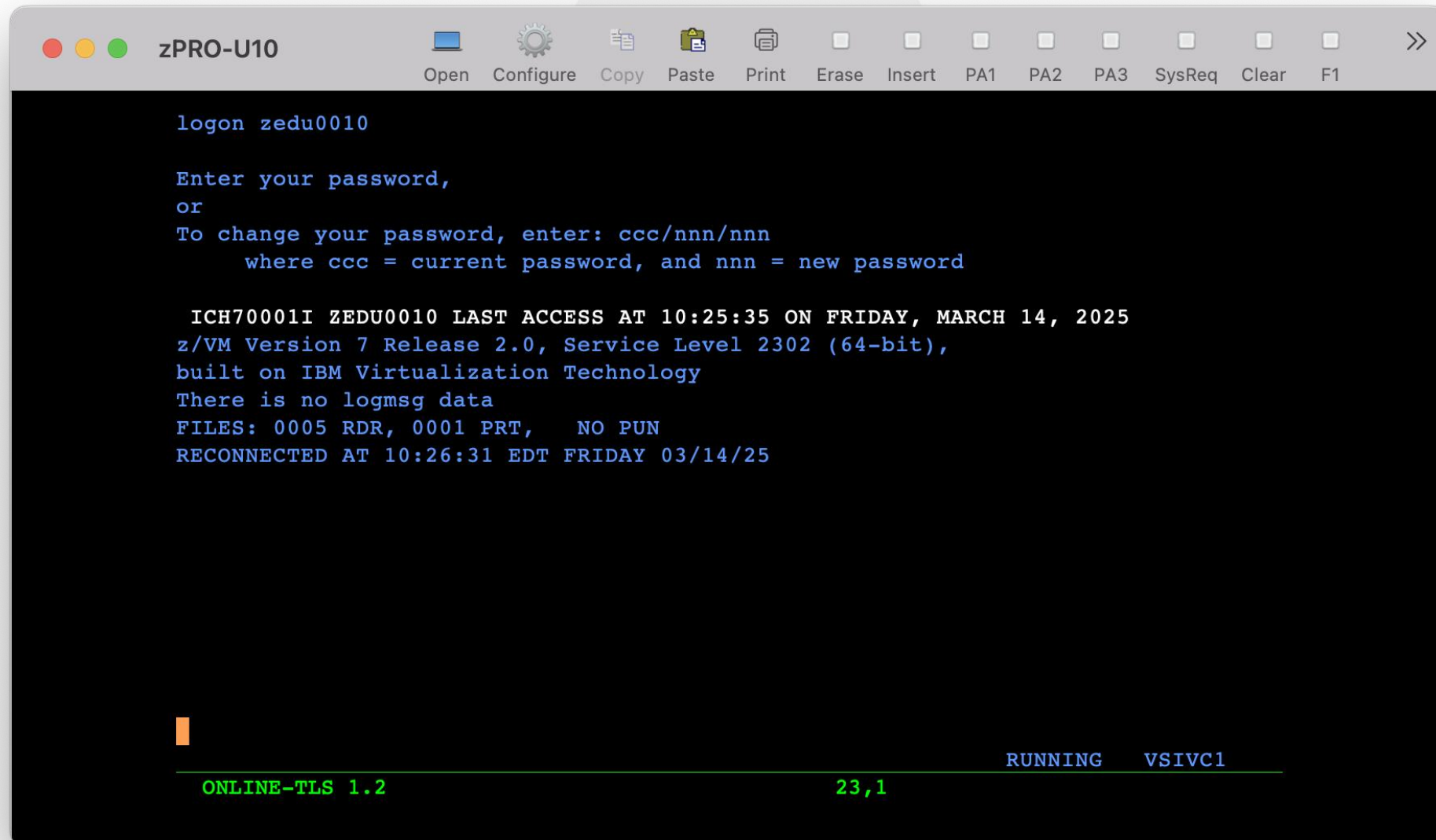
Description	Hostname	IP Address	Owner	Group	Expiration	System	Status
BUNTU 17.10 Linux for UEDU0002	zedu0007	10.0.0.19	UEDU0002	SEAYEDU	8 May 2025 - 16:35:57	VS1VC1	Running
VM 7.3 Guest for UEDU0002	zedu0010	10.0.0.28	UEDU0002	SEAYEDU	10 Jun 2025 - 12:15:44	VS1VC1	Running

Below the table, there are buttons for "Actions", "View Log", "Details", "Edit", and "Chg Pass". A "zPRO notifications" window is open in the foreground, displaying two messages:

- 09:26:17 VS1VC1 - Guest ZEDU0010 started
- 09:26:17 Start request has been submitted to VS1VC1

The notification window also includes a "Delete All" button at the bottom.

EMMA/VSI - Second Level VM



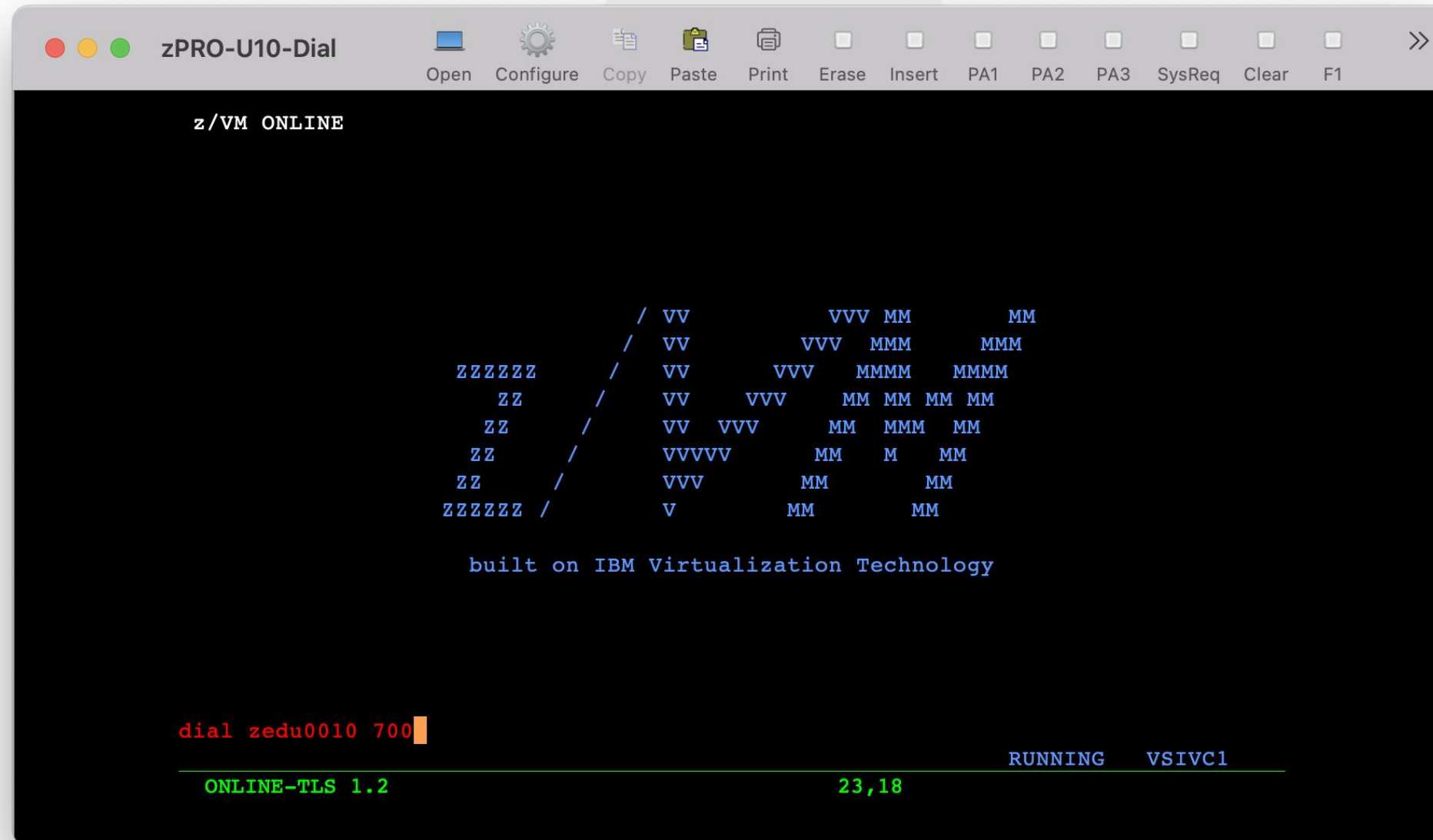
```
logon zedu0010

Enter your password,
or
To change your password, enter: ccc/nnn/nnn
    where ccc = current password, and nnn = new password

    ICH70001I ZEDU0010 LAST ACCESS AT 10:25:35 ON FRIDAY, MARCH 14, 2025
    z/VM Version 7 Release 2.0, Service Level 2302 (64-bit),
    built on IBM Virtualization Technology
    There is no logmsg data
    FILES: 0005 RDR, 0001 PRT,    NO PUN
    RECONNECTED AT 10:26:31 EDT FRIDAY 03/14/25

ONLINE-TLS 1.2                23,1                RUNNING VSIVC1
```

EMMA/VSI - Second Level VM



EMMA/VSI - Second Level VM

```
zPRO-U10-Dial  Open  Configure  Copy  Paste  Print  Erase  Insert  PA1  PA2  PA3  SysReq  Clear  F1  >>

z/VM ONLINE - Velocity Software - ZEDU0010

      ZZZZZZ  EEEEE  DDDDD  UU  UU  000  000  11  000
        ZZ  EE  DD  DD  UU  UU  00 00  00 00  111  00 00
        ZZ  EE  DD  DD  UU  UU  00 000  00 000  11  00 000
        ZZ  EEEEE  DD  DD  UU  UU  00 0 00  00 0 00  11  00 0 00
        ZZ  EE  DD  DD  UU  UU  000 00  000 00  11  000 00
        ZZ  EE  DD  DD  UU  UU  00 00  00 00  11  00 00
      ZZZZZZ  EEEEE  DDDDD  UUUUU  000  000  1111  000

              //  VV  VV  MM  MM  7777777  33333
              //  VV  VV  MMM  MMM  77  33  33
              //  VV  VV  MMMMMMMM  77  33
      zzzzzz  //  VV  VV  MM  MM  MM  77  3333
        zz  //  VV  VV  MM  MM  77  33
        zz  //  VV  VV  MM  MM  77  ... 33 33
      zzzzzz  //  VVV  MM  MM  77  ... 33333

built on IBM Virtualization Technology

ONLINE-TLS 1.2 23,1 RUNNING VM2LV73
```

EMMA/VSI - Second Level VM - MAINT User

```
LOGON MAINT730
ENTER PASSWORD (IT WILL NOT APPEAR WHEN TYPED):

HCPLNM108E MAINT 0122 not linked; valid M01SPD not mounted
z/VM Version 7 Release 3.0, Service Level 2302 (64-bit),
built on IBM Virtualization Technology
There is no logmsg data
FILES: 0003 RDR, NO PRT, NO PUN
LOGON AT 10:32:59 EDT FRIDAY 03/14/25
z/VM V7.3.0 2024-01-30 11:38
Profile: Spooling console to user ID: MAINT730
Profile: Performing default setup...
Profile: Performing installation customization logic...
Profile: <No customization>
Profile: PF Key Settings:
PF11 RETRIEVE FORWARD
PF12 RETRIEVE BACKWARD
PF23 RETRIEVE FORWARD
PF24 RETRIEVE BACKWARD

Ready; T=0.01/0.01 10:32:59

ONLINE-TLS 1.2 23,1 RUNNING VM2LV73
```


EMMA/VSI - Second Level VM - MAINT User

```
zPRO-U10-Dial
Open Configure Copy Paste Print Erase Insert PA1 PA2 PA3 SysReq Clear F1

q dasd
DASD 0320 CP OWNED M01RES 109
DASD 0321 CP OWNED M01SPG 0
DASD 0323 CP OWNED VMCOM1 16
DASD 0324 CP SYSTEM 730RL1 26
Ready; T=0.01/0.01 10:33:41
q disk
LABEL VDEV M STAT CYL TYPE BLKSZ FILES BLKS USED-(%) BLKS LEFT BLK TOTAL
MNT191 191 A R/W 200 3390 4096 99 526-01 35474 36000
MNT5E6 5E6 B R/W 20 3390 4096 141 1604-45 1996 3600
PMT2CC 2CC C R/W 10 3390 4096 3 166-09 1634 1800
MNT51D 51D D R/W 26 3390 4096 216 1168-25 3512 4680
PMT551 551 E R/W 40 3390 4096 14 151-02 7049 7200
MNT190 190 S R/O 207 3390 4096 686 21067-57 16193 37260
MNT19E 19E Y/S R/O 500 3390 4096 1106 36826-41 53174 90000
Ready; T=0.01/0.01 10:33:44

ONLINE-TLS 1.2 23,1 RUNNING VM2LV73
```

EMMA Apprenticeship

Client post job descriptions to EMMA staff

EMMA staff forwards candidate resumes to client

Client schedules interviews with the candidate

Client accepts a candidate into an apprenticeship position

Client, Apprentice, and EMMA staff communicate weekly to continue training and coaching. Apprenticeship reporting follows Department of Labor standards

Questions?

Anybody have any questions?

EMMA



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