

Ten Tips for VM and VSE

The Best They Can Be



Background

- VM VSE and OS/390 are all Dinosaurs
- Originally coded back in the 1960's
- Each followed a separate development path
- VM and VSE have long been viewed as complementary
- Each adds strengths that the other is missing



How Have Things Changed?

- Both CPU and DASD are Bigger and Cheaper
- But the same is true of PCs in Spades.
- The PC is now The vehicle for end-user computing
- Mainframes are now largely restricted to "serious" corporate computing



How Are They The Same?

- Mainframe applications are often unchanged - some up to 20 years old.
- Mainframes are still more expensive - but worth it!
- Mainframes still require professional supervision. That is why there is WAVV.



Copyright © 2003 iIllustro Systems International, LLC

WAVV2003-4

Why VM and VSE?

So why do we want to run both?



Copyright © 2003 iIllustro Systems International, LLC

WAVV 2003
Winston-Salem, NC

VSE Strengths

- Robust Batch System
- Full CICS support
- Full complement of High Level Languages
- Robust VSAM file system



Copyright © 2003 iIllustro Systems International, LLC

WAVV2003-6

VM Strengths

- Ability to Run Multiple Guest Operating Systems
- Complete Independence of Guests
- Very Strong Interactive Support - CMS
- Native TCP/IP and VTAM Support
- Time-Sharing Base



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-7

Why Run VM/VSE?

- Inherited systems
- Merger/Acquisition Scenarios
Multiple levels of VSE Simultaneously
- New Linux/390 Shops
- High-availability Requirements



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-8

Some Practical Tips

- Assume your major load consists of multiple VSE guests.
- Assume you have plenty of CPU and plenty of DASD
- Caution: Your mileage may vary
- I have had a fair amount of experience, but every system, is different



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-9

Tip 0: Training

- You will need System Programmer level skills for both VM and VSE
- I'm not sure where you get VM basic training. Most of us learned in the gutter.
- There are VSE SP classes available - check with CPR



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-10

Tip 0: Training

- To maintain VSE you need to know how it works.
- To maintain VM you need to “think virtually”



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-11

Tip 1: Separate VSEs by Workload

- Run heavy batch in separate virtual machines from heavy CICS
- Do tests and development in separate virtual machines
- Remember: Additional virtual machines are both easy and cheap.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-12

TIP 2: Use Minidisks

- Allocate DASD using MDISKS as opposed to Attach or Dedicate.
- Link where desirable to support DASD sharing.
- Make VSE MDISKS full-pack less cylinder 0. Have unique volids on cylinder 0.
- Let MAINT own all "real" volumes



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-13

TIP 3: Share Queues

- Share POWER queues between all VSEs at the same level.
- Share POWER queues between VSEs at different levels with PNET and virtual CTCAs
- You will probably want to dedicate real printers to a VSE.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-14

Tip 3: Share Queues

- Set up a VM to POWER link using PNET and RSCS over a virtual CTCA.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-15

TIP 4: Ownership of TCPIP

- All VSEs as well as VM will need TCPIP
- If you have plenty of physical interfaces (OSAs) dedicate them to the VSE stacks.
- If you are constrained for physical interfaces (MP3000) let VM own the real interface and link via virtual CTCAs. Use Proxyarp.
- Or even better use Hipersockets



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-16

TIP 4: Ownership of TCPIP

- Access network printers via LPR
- If you have heavy TCP/IP traffic between VSEs, set up a secondary link with a v-CTCA
- Map your IP addresses carefully and save the documentation!



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-17

Tip 5: Upgrades

- Do Upgrades during normal working hours when IBM support is available.
- Do both VM and VSE the IBM way - don't get fancy.
- Upgrade VM as a 2nd level VM system. Move to 1st level when thoroughly tested.
- Upgrade VSE in a test machine, move to production when thoroughly tested.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-18

Tip 5: Upgrades

- What is “thorough” testing? Let your conscience be your guide.
- Invest in VM definitions to let your test VSEs share with production and with VM.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-19

Tip 6: Backups

- This is for system areas only.
- Back up VM with DDR.
- Back up VSE with Fastcopy
- There are better packages available for application backups, but DDR and FTP are fast, cheap, and supported.
- Backups are like Chicago votes - Early and Often.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-20

Tip 6: Backups

- Keep a separate VM available for Disaster Recovery on DISK. It needs enough access to get everything else back if necessary.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-21

Tip 7: Disaster Recovery

- This is assuming you do disaster recovery, which is a management decision.
- A properly set-up VM and VSE system is easily recovered
 - Step 1: Recover VM
 - Step 2: Recover VSEs
 - Step 3: Recover applications and data



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-22

Tip 8: Tuning

- Tune at the VM level
- Invest in a VM performance measurement tool otherwise you are tuning blind.
- There are lots of VM tuning knobs, but many are for very specialized situations.
- The two you will use most often are SET SHARE and SET QUICKDSP



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-23

Tip 8: Tuning

- Remember, VM tuning is biased toward CMS-intensive workloads. That is probably not your situation.
- Use SET QUICKDSP for interactive (CICS) workloads. Use SET SHARE for batch machines.



Copyright © 2003 i!lustrO Systems International, LLC

WAVV2003-24

TIP 8: Tuning

- **Do not overture**
It is very hard to make miracles happen, but quite easy to foul things up horribly.
- Check measured performance after each tuning change.



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-25

Tip 9: Resources

- IBM: You pay for support - use it!
- RTFM and where appropriate RTF Red-books
- Use <http://www.vm.ibm.com/> for VM
- Use <http://www.s390.ibm.com/vse/> for VSE



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-26

Tip 9: Resources

- Listserv VMESA-L
Mail to
LISTSERV@LISTSERV.UARK.EDU
SUBSCRIBE VMESA-L (your name)
- Listserv VSE-L
mail to: listproc@Lehigh.EDU
SUBSCRIBE VSE-L (your name),company



Copyright © 2003 iIllustrro Systems International, LLC

WAVV2003-27

Tip 9: Resources

- And last but not least
<http://www.wavv.org/>



Copyright © 2003 iIllustro Systems International, LLC

WAVV2003-28

WAVV 2003
Winston-Salem, NC

As we say on the web,
“Hope This Helps”

Any questions?



Copyright © 2003 iIllustro Systems International, LLC

This document was created with Win2PDF available at <http://www.daneprairie.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.