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## Nothing Hotter Than VM and VSE



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## VM and VSE - Dead Operating Systems?

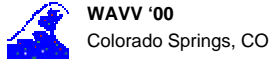

- Quite a Nice Turn-Out for the Wake!
- But the important thing is...

### Where Do You Want to Be?




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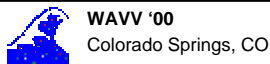

## Where Do You Want to Be?

- Running IBM's Latest and Most Glorious - OS/390?
- In a World Without PCs?
- In a world with Nothing but PCs?
- In a nice stable world where Nothing Changes?
- Doing the best you can in a complex and changing environment?




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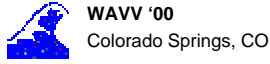
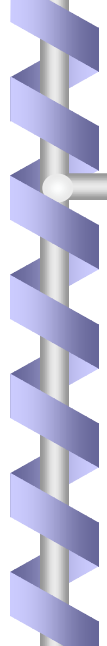
## Where Do You Want to Be?

- OS/390? Remember that IBM is not a monolith. You can get any answer you want if you dig long enough. What answer is right for you?.




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## Where Do You Want to Be?

- A World Without PCs (and Unix)?  
Ain't Going to Happen.
- A World with Nothing But PCs?  
That Ain't Going to Happen Either.
- That nice stable world?  
That isn't where we are going.



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## Where Do You Want to Be?

- Doing the Best You Can?

Here VM and VSE can Help

- So What's New?



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## What's New?


- The biggest though not the newest News:  
**Moore's Law Lives!**  
Priced an MP3000 or an IFrame Lately?  
**Hardware is Cheap!**


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## What's New - VSE New Release

- We should be thankful for Y2K Hysteria
- VSE is Compliant Back to 1.4.2
- Current Release 2.3.2 is Nice and Stable
- But 2.4 and 2.5 are available now - what's new in 2.4?

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## What's New? VSE 2.4

- CICS Transaction Server - a port of the OS/390 version to VSE

**Better:**

- Online system changes
- Better Storage Control
- More Complete SP Interface
- Some support for Web-Enabling


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## What's New - VSE 2.4

- CICS Transaction Server - The Dark Side
- No more Macro support - they warned us!
- No more BTAM terminal support.
- No more Internal Security


This is likely to be a BIG conversion


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## What's New - VSE 2.4


- Other topics:
- Turbo-dispatcher now the only choice
- New Version of Ditto
- New Version of DL/1
- CA Top-Secret Pre-Loaded
- New Maintenance Facility


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## What's New - VSE 2.5

- Connectors: Code fragments that allow accessing VSE resources from Java applications  
What will they do and how will you use them?
- VSAM extensions for RVA exploitation
- FSU available from VSE 2.4


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## What's New - VM 2.4

- Significant Improvements in VM TCP/IP
- Lots of New Hardware Support
- Sysplex Guests
- VM available on CD-ROM - great for Integrated Server. MP3000 too?


Not that much else, and maybe that's good

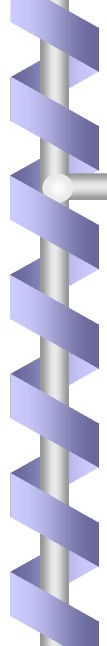
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## What's New - VIF

- Virtual Image Facility for Linux
- A "stripped down" version of VM
- Optimized for Linux and only supports Linux guests.
- Consult IBM for details of what it will and won't do.

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
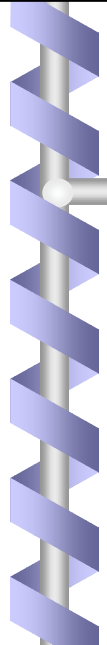
## What's New - VM 2.5

- Well, Where is it?
- 64-bit Guest Support rumored.
- 64-bit Hardware Support rumored.
- But IBM is playing their cards close to the vest.



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## What's New - VM 2.5

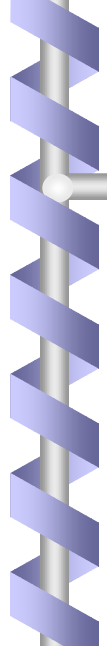
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## What's New - Z/VM

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- Available 1st Quarter 2001
- 64-bit Guest Support included.
- Z-Server Hardware Support included.
- Also supports existing hardware and Operating Systems.

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## What's Not So New?


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## What's Not So New?


- In the old days, VM could be justified for VSE simply by additional features. Those days are gone now, and good riddance.
- The cost is not only in \$ but in the learning curve of an additional system.
- But given that, there are very real benefits to running VSE under VM


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## Benefits to Running VSE under VM


- Much more flexible system test facilities.
- Simpler and Powerful Workload isolation.
- Improved online system.
- UNIX compatibility
- E-Commerce
- Database Strengths
- Simplified Migration to OS/390


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## Benefits: System Testing


- We are all used to thinking about the requirements (Y2K).
- You can run multiple VSEs in LPARs,
- **But** it is much easier to create and run test systems under VM.
- An example, a 2nd-level VM install and upgrade from 1000 miles away.


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## Benefits: Workload Isolation


- You can run as many jobs as you want in a native VSE system.
- But do you really want your production CICS to coexist with a heavy batch load?
- VM allows separation by Virtual Machine for tuning purposes.
- And, of course, test environments can be kept totally separate.


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## Benefits: Online Flexibility.


- Unlike VSE, VM was developed as an online system.
- CICS is great for online production, but is less friendly in a development environment. One mistake can bring the entire system down.
- Under VM, a programming error generally only crashes yourself.


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## Benefits: Online Flexibility


- Most CICS development is done with traditional HLLs (COBOL, PL/1).
- VM supports these, but also includes rapid-development tools:  
XEDIT  
REXX  
DMS/CMS  
PIPES


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## Benefits: Online Flexibility


- "Native" VSE shops must suffer with ICCF and the IUI system - both obsolescent.
- Either that or they must invest in 3d party tools,
- VM's built in features are superior
- Most VM shops generally move program development and library management right to CMS. Use VSE for Production!


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## Benefits: Online Flexibility


- Of course, if you are going to all PCs or SAP maybe you don't need a development environment.
- This is a common belief among executives but less so among practitioners.
- Get the best toolkit with VM/CMS and make development less painful.


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## Benefits: UNIX Compatibility


- This is really two questions:
- Do you want to run Unix apps on your mainframe?
- Do you want to interchange data with Unix or Microsoft systems?


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## Benefits: Running UNIX Apps


- VM POSIX system allows you to compile and run Unix applications directly.
- VM even includes a UNIX-style byte file system.
- VSE isn't there yet, but under VM it doesn't need to be.


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## Benefits: Running UNIX Apps


- And now, LINUX is also an option.
- Linux is a true Unix version that runs on a 390. It is easily implemented under VM.
- Hundreds of packages are already ported to Linux and more are coming.
- For VM users, THE and Regina Rexx offer a familiar environment.


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## Benefits: Unix Data Interchange


- Transfer Files between Mainframe and Client
- Transfer printouts to LAN printers (or mainframe printer)
- Easy 3270 connectivity


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## Benefits: UNIX Data Interchange


- **TCP/IP** is the answer
- FTP and NFS for file interchange
- LPR/LPD for printouts
- TN3270 for Connectivity

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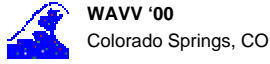
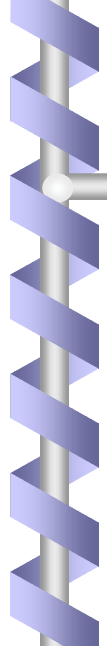
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## Benefits: UNIX Data Interchange

- Two Choices: TCP/IP for VM from IBM and TCP/IP for VSE from CSI.
- TCP/IP for VM is more feature-rich
- TCP/IP for VSE is easier to install
- The choice depends on your requirements - which environment do you need to get-to.
- For some, the right choice is both.


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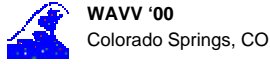
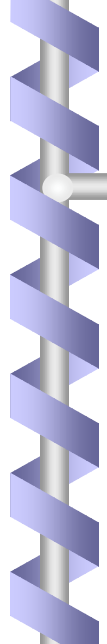
## Benefits: Migration Environments

- From 2000 feet it may seem easy to simply replace everything.
- Developing a practical migration plan though implies coexistence.
- TCP/IP provides the “glue” to make a practical migration plan possible.




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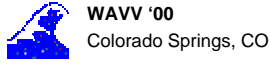
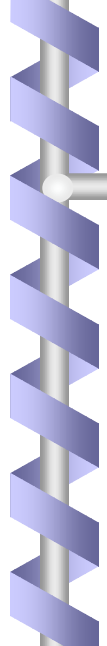
## Benefits: E-Commerce

- This would be easier to address if better defined.
- OS/390 support for E-Commerce carries over to some extent to Transaction Server
- Meanwhile, there are lots of partial solutions available out there for VM and VSE.




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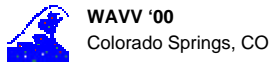
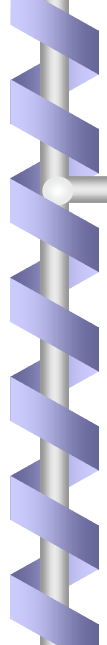
## Benefits: E-Commerce

- An example - Web/VSE Host from IntelliWare allows CICS transactions to be viewed from a browser (IE-5 or Netscape).
- There are lots of alternatives depending on what you want to do.
- Both VM and VSE have many of the necessary tools. How do you want to use them?




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## Benefits: Database

- DB/2 for VM and VSE offers a full-function solution that is compatible with DB/2 for OS/390.
- Guest-sharing offers a single database shared between two environments.
- Performance is enhanced by putting the actual database in VM and accessing it as required from VSE Batch or CICS




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## Benefits: Database


- If ODBC connectivity is critical, consider Datacom/DB from CA.
- This is a native VSE implementation, and connectivity to PCs is excellent.

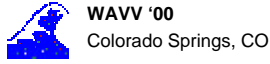
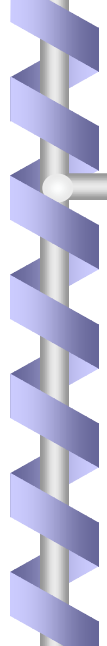
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## Benefits: Database


- What about your old VSAM files?
- VSAM transparency is available for both DB/2 and Datacom DB.
- Consider Cross Access or Viaserv
- These are VSE packages.

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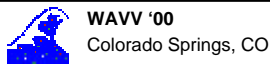
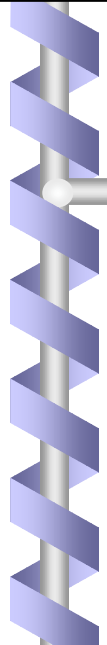
## Benefits: OS/390 Migration

- Well, if you must.
- VM permits OS.390 and VSE to coexist on the same system and (to some extent) share data.
- This lowers the complexity and risk of developing a successful migration plan.




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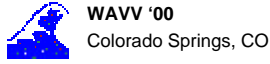

## What About Linux?

- Be prepared for interesting times!




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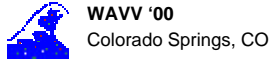

## Linux Benefits:

- Easy and cheap to set up under VM.
- Install vehicles available from marist.edu SuSE and TurboLinux.
- Tons of downloadable application code available at S390.LINUX.ORG.
- Informal support available from IBM and pay-for support from distributors.
- Lots of IBM packages being ported to Linux.




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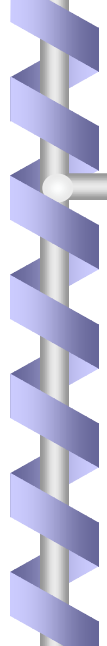
## Linux Concerns:

- Development in a general state of chaos.
- IBM development historically featured careful planning and standards.
- Linux development is done by semi-informal groups of brilliant amateurs.
- New releases are frequent, and frequently broken.
- This is a consequence of the Open Source philosophy and will not change.



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
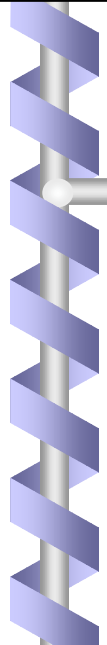
## IBM and Linux:

- IBM is highly interested, but not in control. They are fellow travelers.
- A large part of the Linux community consider Linux for S/390 to be interesting, but not particularly germane.



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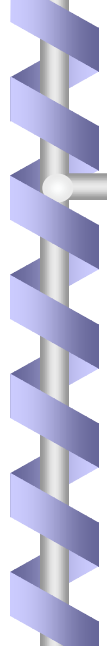
## Linux Plusses and Minuses


- A chance to bring a great deal of additional function to your enterprise at relatively low cost.
- Do not expect turn-key installation and code stability.
- Dust off your System Programmer skills
- And Have Fun!



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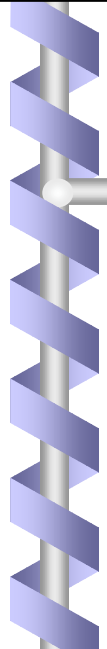
## Practical Hints


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## Practical Hints

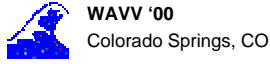
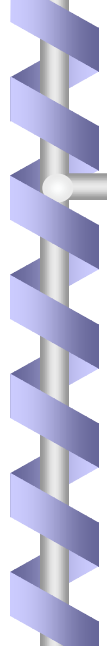
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- Just a collection on practical hints from someone who has dealt with VM/VSE environments for many years.




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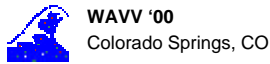
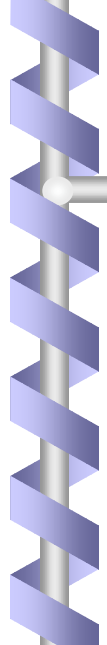
## Practical Hints: VM Maintenance

- SESS is not an ogre any more
- It still works by black magic, but now it works.
- And, it works for most VM products.
- The "trick" - don't second-guess it.
- "Trust the Force, Luke."




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## Practical Hints: VSE Maintenance

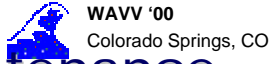
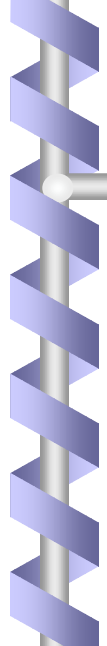
- Hate ICCF and the IUI, you're not alone!
- But it's the only practical way to install VSE.
- So once it's in - leave it installed  
Disk is cheap!
- You may be able to do better than the IUI,  
but do you really need to?



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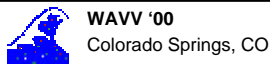
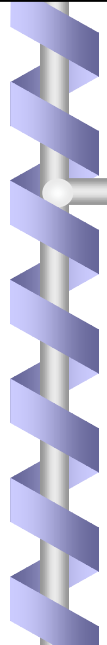
## Practical Hints: Maintenance Schedule

- Try to convince management that your system needs a one-or twice a year maintenance schedule.
- It's just a cost of doing business in a mainframe world (PCs aren't that different).
- Point to Y2K as a prime example of the costs of deferred maintenance




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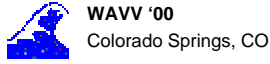
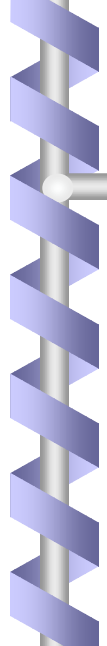
## Practical Hints: Minidisks

- The minidisk versus dedicated argument is as old as VM and VSE.
- But now, the cost of MIPS is low enough that it doesn't really matter.
- So use minidisks and get the flexibility
- Keep dedicated volids like DOSRES on cylinder 1 of minidisks.




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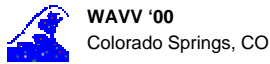
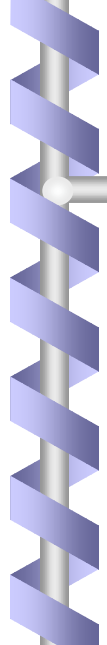
## Practical Hints: V-CTCA

- The cheapest and lowest-overhead way to connect multiple systems in a VM/VSE environment.




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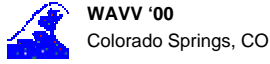
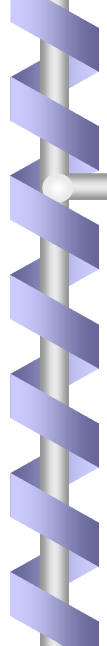
## Practical Hints: TCP/IP

- If you run both VSE and VM TCP/IP...
- Among multiple images, who owns the LAN adapter hardware?
- Proxyarp APAR allows VM TCP/IP to be the host.
- Alternatively, keep a separate VSE image as the TCP/IP host. Virtual machines are cheap!




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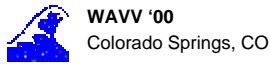
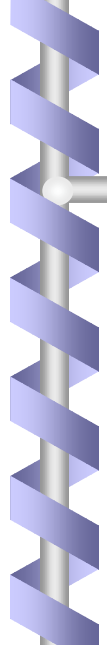
## Practical Hints: Test-Systems

- Always keep a test VSE system around.
- Why let programmers play in a production system?
- The extra cost is low




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## Practical Hints: Tuning

- Tune at the VM level - VSE tools may give misleading results under VM.
- Learn to use the VM tuning commands - and practice with them.
- Don't tune too heavily before checking results.
- Get a VM monitor (RTM, Explore or ESAMON) so you can see the results of what you do.



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## Synopsis:


- VM and VSE work well together - better than ever.
- And with Linux we now have a whole new dimension.
- The whole can be greater than the sum of the parts.
- Learn the strengths of all environments and use them to complement each other.

Have Fun!

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## Questions? Discussion?

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