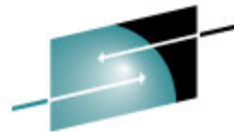


System uPDT™

zPDT® as it was meant to be



S H A R E

Technology • Connections • Results

2012 Atlanta

Presented by:

Stan H. King, PE

C.M. (Mike) Hammock



Overview: What is it?

- From IBM® (z1090)
- Software based System z®
- Runs on Intel architecture processors (IBM System x®)
- Provides almost all System z processor functions (z10™ & z196™ level)
- Currently aimed at development/testing



zPDT History

- Descendent of P/390
- Developed within IBM since approx. mid 2000s
- Internal Redbooks® in fall of 2006
- Used internally at IBM since early 2007
- Announced to developers fall of 2009
 - GA – Oct 2009
- ITC shipped first uPDT system Nov 2009



Availability

- ISVs: Approved members of IBM PartnerWorld® for Developers developing products for use on System z
 - Similar to FLEX-ES® program for ISVs
- Developers using IBM Rational® for System z
 - RDz UT (Rational Developer for System z Unit Test) utilizes the zPDT system
 - ITC is a certified Rational business partner for RDz UT
 - ITC Solution: System ReDD™ (Rational Enhanced Development Device)
- ITC is the exclusive worldwide distributor of IBM zPDT technology and ships worldwide
 - SVA GmbH is the ITC reseller for zPDT in Europe



Financial

1090 Technology is not free but most definitely cost justified

Four cost components:

1. IBM 1090 License
 - L01 - \$3,750 per year
 - L02 - \$7,500 per year
 - L03 - \$11,250 per year
2. IBM ADCD Fee - \$900 per year
3. ITC Fulfillment Fee - \$450 per year (waived for uPDT customers)
ITC provides all order processing for z1090, initial ADCD qualification processing, z1090 packaging and shipping, web site for z1090 code distribution
4. Compatible Hardware Platform
 - Roll-your-own: variable cost based on on-hand technology
 - ITC uPDT: \$14K - \$31K



zPDT Features

- Most System z processor features
 - z196 level
 - CP, IFL, zAAP, zIIP, and Crypto processors
- Improved performance & capacity
 - Think in terms of 150 – 200 MIPS per processor (max 3)
 - 16 – 32+ GB memory feasible and practical (\$25 per GB)
 - about 1 TB of disk (server base) is starting point
- More advanced I/O features
 - Emulated OSA adapters, QDIO, z/VM[®] VSWITCH, Parallel Sysplex, device attachment via FCP
- Future features
 - What does the future hold for emulation?
 - Constant upgrades and feature enhancements planned



uPDT Product Philosophy

- Complete, packaged, ready-to-run systems
- Optimized for zPDT use
 - Based on extensive experience
- Multiple Ease-of-Use features
- Configured to user specifications
- Customized user documentation
- Ongoing support

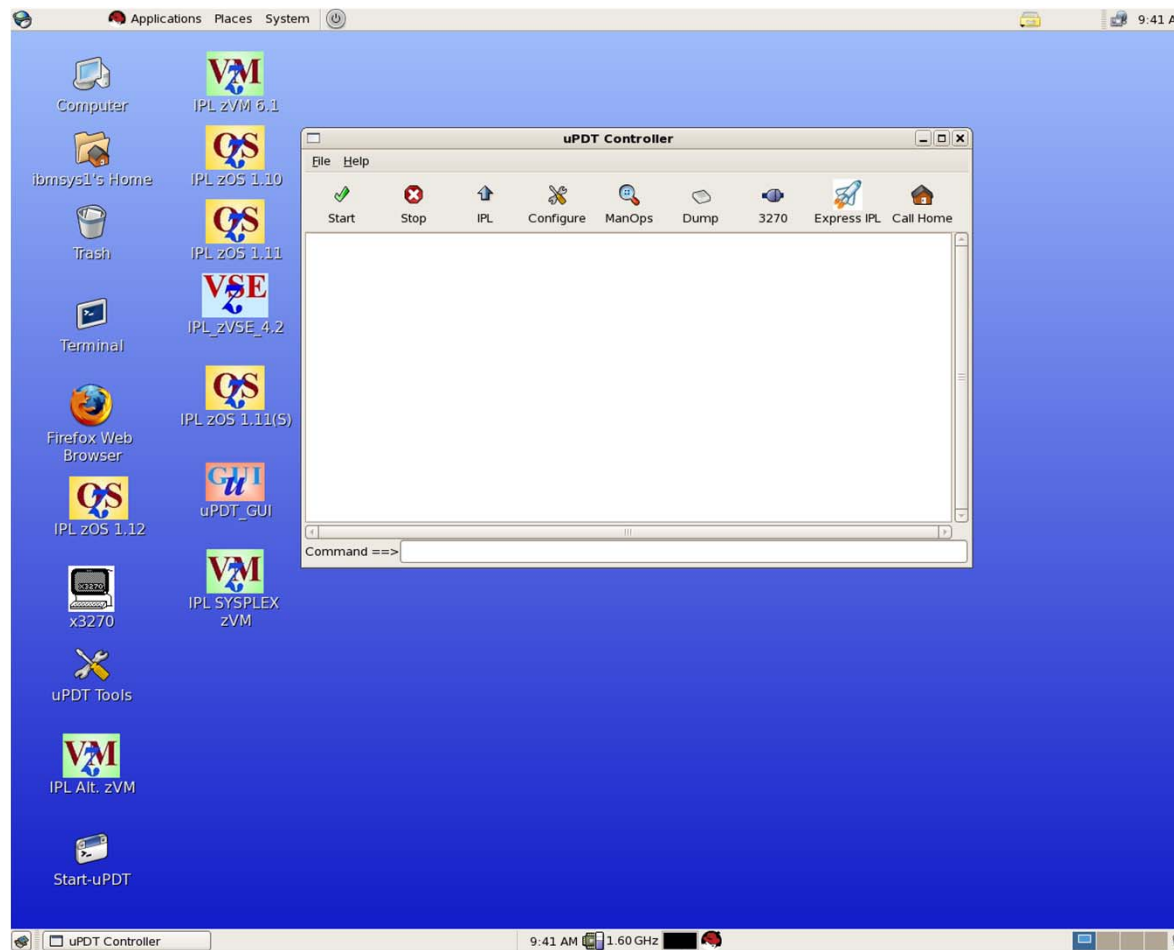
System
uPDT™



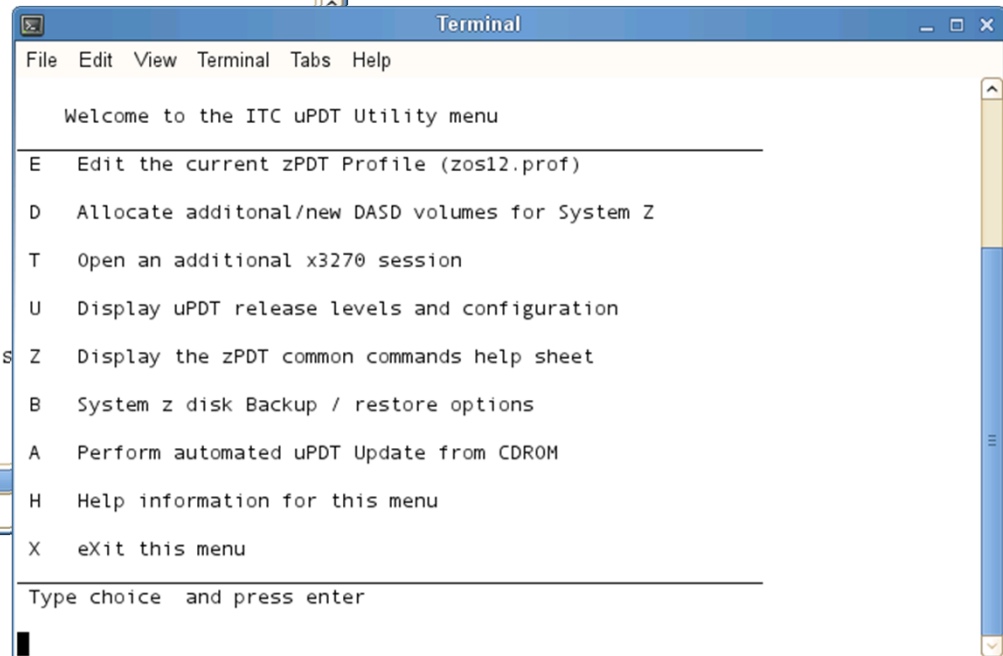
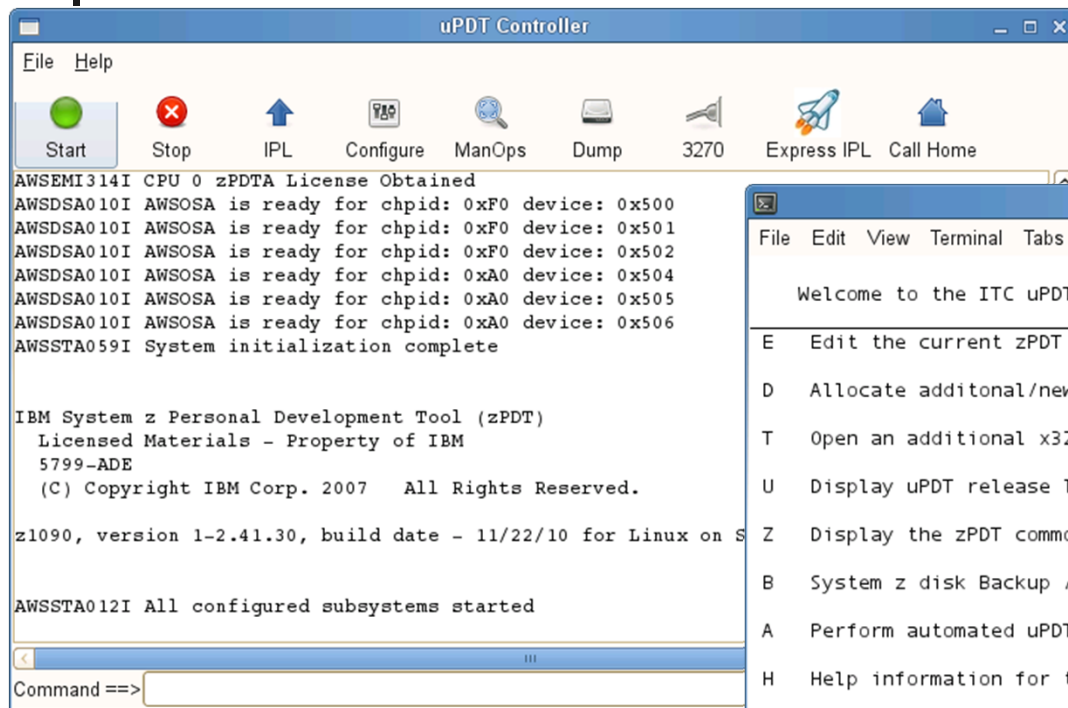
All uPDT Systems

- Custom backup/restore function to external USB disk (Linux and System z environments)
- Ease of use features
 - Full function GUI with “express IPL”
 - “One-click-IPL” programs
 - Tools: 3270 sessions, allocate disks, backup, etc.
- CallHome feature sends diagnostic data to ITC
- ITC support & assistance

uPDT Desktop



GUI & Tools





Common zPDT Problems

Some of the problems we (ITC Support) have seen most often (and we have seen a lot!)

System
uPDT™



System will not BOOT

- Message: “Invalid system disk” (or equivalent)
- Result: User Panic!
 - My hard drive is busted
 - I need to restore my system disk
 - I lost all my data!



System will not BOOT

- Message: “Invalid system disk” (or equivalent)
- Result: User Panic!
 - My hard drive is busted
 - I need to restore my system disk
 - I lost all my data!
- Problem: Non-Bootable USB memory stick
 - System set to boot from USB
- Fix: Unplug the USB memory stick and reboot



Unable to Log in

Or, if logged in, remains in line mode, unable to start desktop

- Result: User panic!
 - My Linux system has been clobbered/destroyed!
 - I need to reinstall Linux and zPDT.



Unable to Log in

Or, if logged in, remains in line mode, unable to start desktop

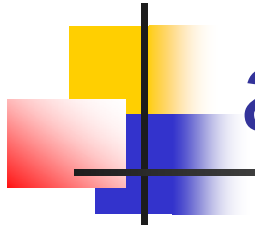
- Result: User panic!
 - My Linux system has been clobbered/destroyed!
 - I need to reinstall Linux and zPDT.
- Problem: Filesystem (probably /) is full
- Fix: find the offending file(s) and remove them



awsstart: strange errors

Unable to start zPDT. Messages change each attempt

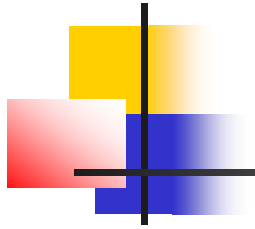
- Result: User panic!
 - My zPDT system has been clobbered/destroyed!
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awsstart: strange errors

Unable to start zPDT. Messages change each attempt

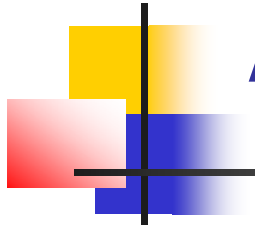
- Result: User panic!
 - My zPDT system has been clobbered/destroyed!
 - I need to reinstall Linux and/or zPDT.
- Cause: The /home filesystem is full
- Fix: Find the offending file(s) and remove them



Finding Large Files

“Find and remove large files” is easier said than done

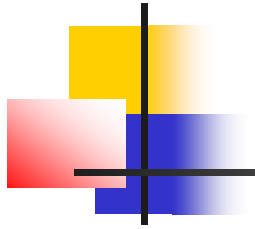
- Wandering around the file system looking for large files takes a long time.
- You might not look in the right place(s)
- To list all large files (>500MB) in system:
 - `su -` to root
 - `find / -size +500M`
 - Ignore known large files, like emulated 3390



"Invalid License" message

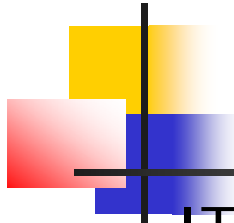
After applying token update (SecureUpdateUtility -u):

- awsstart fails
- "token" command gives "confusing" response.
- Redbooks suggest update can be run while zPDT is active ...
 - Sometimes it works, but not always
 - We recommend awsstop, then SecureUpdateUtility
 - This always works



Technology Issues

- ❖ Red Hat Linux upgrades V5 to V6
- ❖ SuSE Linux upgrades V11 to V12
- ❖ SafeNet SecureUpdate application change incompatibilities
- ❖ zIIP, zAAP, and Crypto emulation AWSSTART processing
- ❖ Wireless Ethernet Adapter issues
- ❖ Non-QDIO OSA issues
- ❖ zPDT – Linux interactions (pipes, VNC, USB use, etc.)



References

ITC's uPDT Information page:

www.p390.com/updt.htm

zPDT Overview/Comparison whitepaper (M. Hammock)

www.hammocktree.us/zpdt/zpdt_whitepaper.pdf

IBM's zPDT "Home page"

www-304.ibm.com/partnerworld/wps/servlet/ContentHandler/pw_com_zpdt

IBM zPDT **Red**books: (www.ibm.com/redbooks)

SG24-7721: System z Personal Development Tool Volume 1: Intro. and Reference

SG24-7722: System z Personal Development Tool Volume 2: Installation and Basic Use

SG24-7723: System z Personal Development Tool Volume 3: Additional Topics

SG24-7859: System z Personal Development Tool: Coupling & Parallel Sysplex



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uPDT Wrap-Up

Questions ?

Comments ?

Discussion ?

