



# Virtual Software Systems, Inc.

ShadowDisk/Z



# ShadowDisk/Z Product Summary

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1

Implements database technology which virtualizes all data processing performed by the Linux image. A single Linux base image can be shared among multiple users.

2

Supports:

- . multi-level (concatenated) SDISK databases
- . Booting SDISK databases without an underlying base FS (NOBASE option).

3

Is transparent to guest virtual machines

# ShadowDisk/Z Product Summary

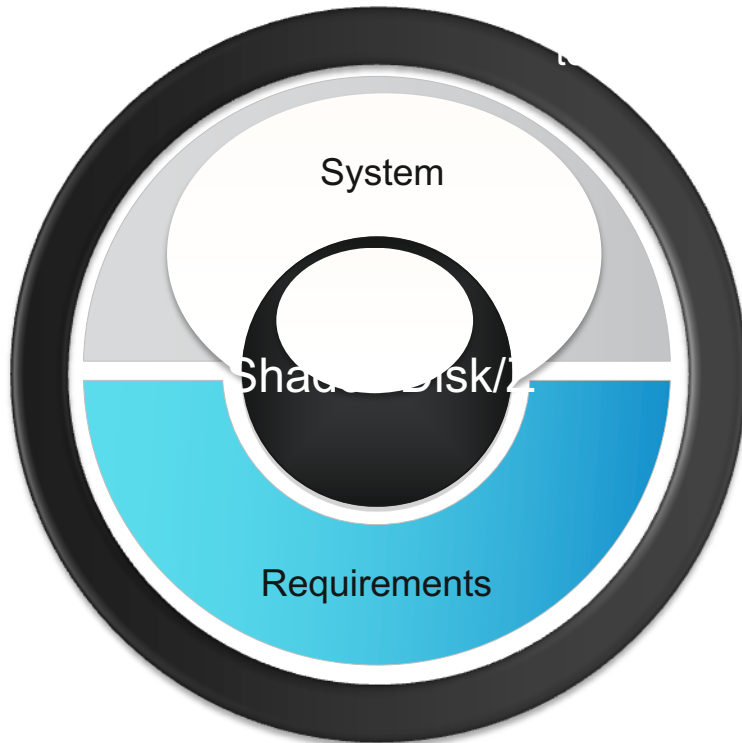
## Customer Benefits



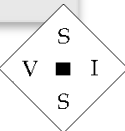
- Significantly reduces test/developer hardware and management requirements for the support of multiple-user Linux application testing environments
- Provides developers with freedom and flexibility in testing scenarios.
- Databases (and hence work) can be shared among multiple users.
- Utilities provided to query, backup, and restore ShadowDisk/Z databases.
- Provides for the creation of databases which do not require a base FS (NOBASE option).

# ShadowDisk/Z Product Summary

## System Requirements



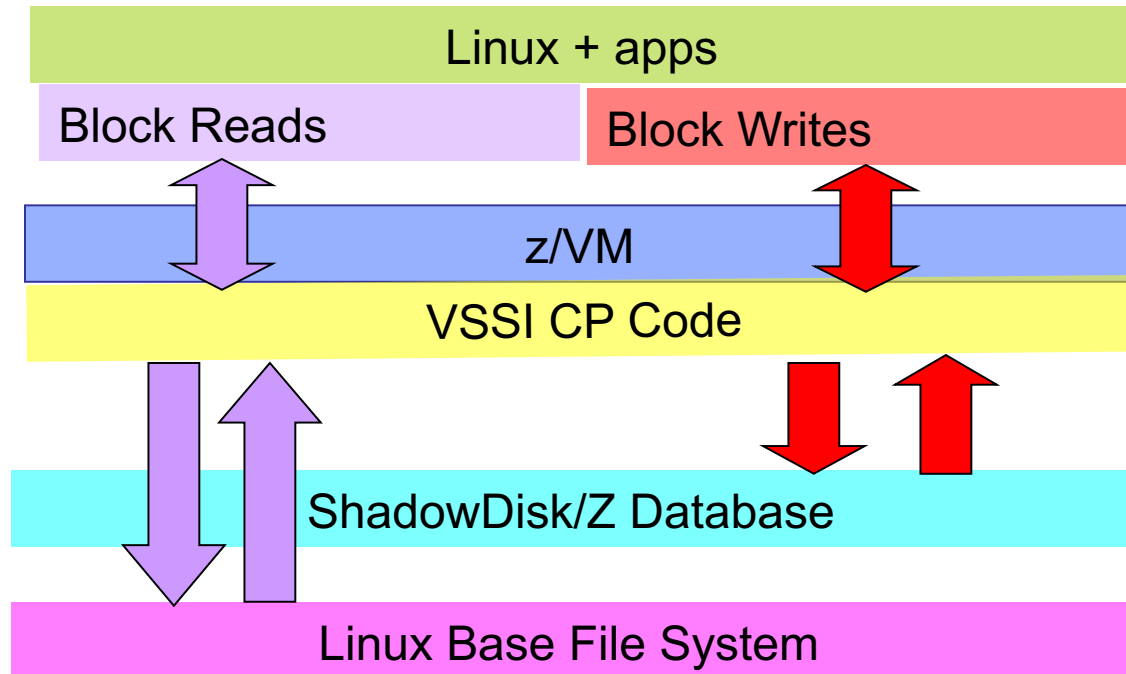
- Z/VM 6.4 or higher
- 200 3390 Cyls or equivalent for Install disk
- 10 3390 Cyls or equivalent VSSI CP PARM disk
- Sufficient disk storage to hold user ShadowDisk/Z databases (ECKD or FBA)



# ShadowDisk/Z Product Summary



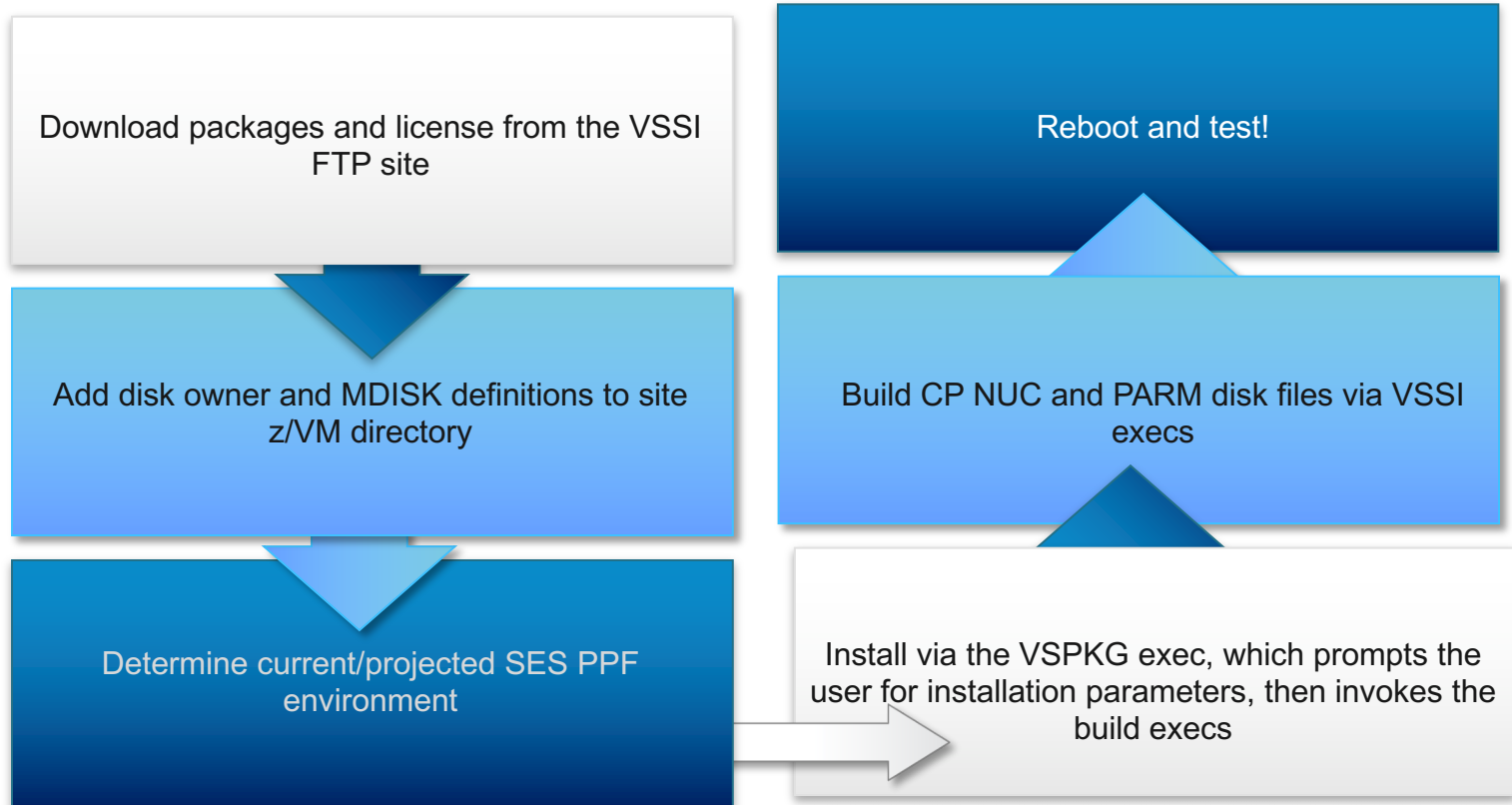
## I/O Processing Flow



NOTE: Base Linux file system is never modified!

# ShadowDisk/Z Product Summary

## Installation



# ShadowDisk/Z Product Summary

```
x3270-4 ftp.vsoftsys.com <4>
File Options
-----*-----*
* VSSI Product Installation EXEC
* Program Property of Virtual Systems, Inc (VSSI)
* All Rights Reserved.
* Copyright (c) 2011-2014, Virtual Systems, Inc (VSSI)
-----*-----*

Package Description:
. Product ID -----> ShadowDisk/Z
. VSSI Product Version --> Version 55
. VSSI Product Build ID -> Build 5518
. VST00LS Build Time ----> 2014-01-01 10:02:41

This EXEC will perform the following actions:
. Gather installation-specific variables from the current
  system (you will be prompted if necessary).
. Build or update a Response File to be used to drive the
  package install.
. Extract other BUILD execs from the package file.
. Pass control to the extracted BUILD execs.

Do you wish to continue at this time?

Reply (Yes|No|Quit):
```

```
x3270-4 ftp.vsoftsys.com <4>
File Options
/*-----*/
/* VSSI Install Disk Identification */
/*-----*/

You can specify either an MDISK or an SFS directory,
as follows:

user_id vdev      (MDISK owner and vdev)
filepool:dir      (SFS filepool and directory)

This disk requires 100 3390 cylinders or the equivalent
space on other devicetypes. It holds the VSSI code base
and BUILD execs. The information specified below is
used to build a VSSI $PPF override file on this disk
for VM/SES-related BUILD procedures. Subsequent INSTALL
and BUILD activities will require you to access this disk
at the same virtual address (MDISK) or directory (SFS).

You can enter the location of an existing VSSI Install disk here:
however, you should backup that disk prior to proceeding
with the actual install.

This disk is typically owned by the VSSMDISK user
directory entry (recommended). However, you are free to
specify an MDISK owned by another ID, such as MAINT
(although we don't recommend this).

Enter (owner vdev | filepool:dir | Quit):
```

1. User invokes VSPKG exec.
2. VSPKG prompts user for site parameters.



# ShadowDisk/Z Product Summary

```
x3270-4 ftp.vsoftsys.com <4>
File Options

vspkg: Current Response File Contents

*-----*
* VSSI Install Response File
*
* Program Property of Virtual Systems, Inc (VSSI)
* All Rights Reserved.
* Copyright (c) 2011-2014. Virtual Systems, Inc (VSSI)
*
* Generated at 1 Jan 2014 19:08:38
*
* This file contains user responses generated by the VSPKG exec.
* and is used by subsequent Install execs.
*-----*
:INQDONE      YES          * Response file complete (YES or NO)
:INQCPREL     620          * Target z/VM release
:INQVSB LD    5518         * Target VSSI Build number
:INQTUID      VSSMDISK     * VSSI Install Disk owner
:INQTVDEV     2B01        * VSSI Install Disk virtual address
:INQPUID      VSSMDISK     * VSSI PARM Disk owner
:INQPVDEV     A001        * VSSI PARM Disk virtual address
:INQPFM       D           * VSSI PARM Disk CPACCess filemode
:INQPPT       VSZVM62      * Installation top-level PPF fname
:INQPPF       ZVM         * Installation base PPF filename
:INQDTFMT     MM/DD/CCYY   * Installation default date format
:INQD TDL M    /          * Installation default date field delimiter
:INQVMDUS     8           * VMD user field number - VPARS/VDISK use
:INQVDSYS     VDSYSTEM    * Default VDISK CONFIG filename

If these responses are OK, the current installation will be
executed using the current responses.

Enter:
. Y if the above responses are OK:
. N if you wish to change any of the above responses:
. Q to quit this Install session.

Reply (Yes|No|Quit):
```

```
x3270-4 ftp.vsoftsys.com <4>
File Options

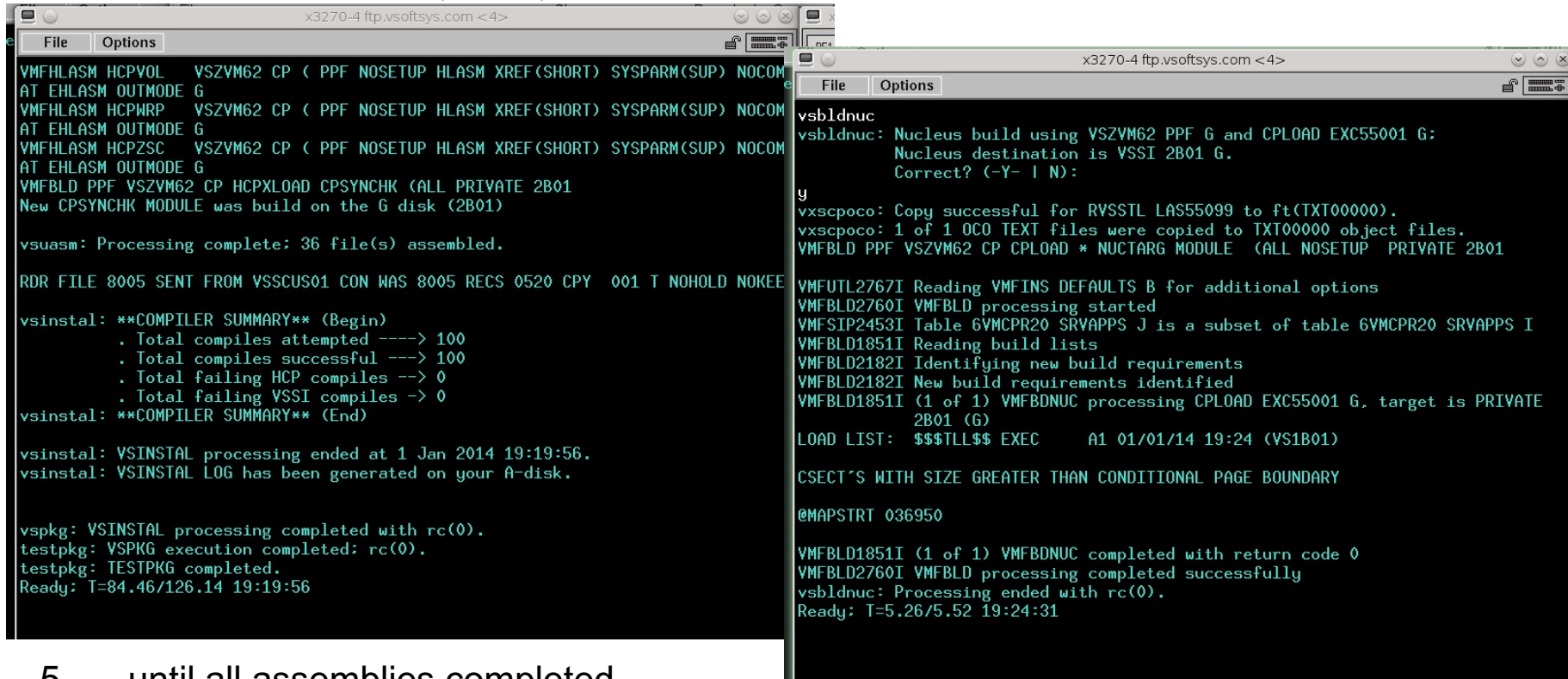
vsinstal: VSINSTALL processing started at 1 Jan 2014 19:13:54.

vsinstal: Validating target disk (filemode G)...
vsinstal: Install disk 2B01(G) is ready.
vsinstal: Validating package ZVM620 VD5518 A...
vsinstal: Package ZVM620 VD5518 A is ready.
vsinstal: Building package manifest...
vsinstal: Package manifest contains 1631 elements.
vsinstal: VSINSTALL MANIFEST has been generated on your A-disk.
vsinstal: Building file deletion list...
vsinstal: Deletion list generated.
vsinstal: 0 HCP AUX objects processed.
vsinstal: 0 VSSI AUX objects processed.
vsinstal: 0 total AUX objects processed.
vsinstal: Deleting elements to be loaded from the package...
vsinstal: File deletion completed for 0 elements.
vsinstal: Loading package ZVM620 VD5518...
```

3. After all prompts satisfied,  
4. Installation begins...

# ShadowDisk/Z Product Summary

- Installation Scenario (3 of 3)



```
x3270-4 ftp.vsoftsys.com <4>
File Options
VMFHLASM HCPVOL VSZVM62 CP ( PPF NOSETUP HLASM XREF(SHORT) SYSPARM(SUP) NOCOM
AT EHLASM OUTMODE G
VMFHLASM HCPWRP VSZVM62 CP ( PPF NOSETUP HLASM XREF(SHORT) SYSPARM(SUP) NOCOM
AT EHLASM OUTMODE G
VMFHLASM HCPZSC VSZVM62 CP ( PPF NOSETUP HLASM XREF(SHORT) SYSPARM(SUP) NOCOM
AT EHLASM OUTMODE G
VMFBLD PPF VSZVM62 CP HCPXLOAD CPSYNCHK (ALL PRIVATE 2B01
New CPSYNCHK MODULE was build on the G disk (2B01)

vsuasm: Processing complete: 36 file(s) assembled.

RDR FILE 8005 SENT FROM VSSCUS01 CON WAS 8005 RECS 0520 CPY 001 T NOHOLD NOKEE

vsinstal: **COMPILER SUMMARY** (Begin)
. Total compiles attempted ----> 100
. Total compiles successful ---> 100
. Total failing HCP compiles --> 0
. Total failing VSSI compiles -> 0
vsinstal: **COMPILER SUMMARY** (End)

vsinstal: VSINSTALL processing ended at 1 Jan 2014 19:19:56.
vsinstal: VSINSTALL LOG has been generated on your A-disk.

vspkg: VSINSTALL processing completed with rc(0).
testpkg: VSPKG execution completed: rc(0).
testpkg: TESTPKG completed.
Ready: T=84.46/126.14 19:19:56

x3270-4 ftp.vsoftsys.com <4>
File Options
vsbldnuc
vsbldnuc: Nucleus build using VSZVM62 PPF G and CLOAD EXC55001 G:
Nucleus destination is VSSI 2B01 G.
Correct? (-Y- I N):
Y
vxscpoco: Copy successful for RVSSL LAS55099 to ft(TXT00000).
vxscpoco: 1 of 1 OCO TEXT files were copied to TXT00000 object files.
VMFBLD PPF VSZVM62 CP CLOAD * NUCTARG MODULE (ALL NOSETUP PRIVATE 2B01

VMFUTL2767I Reading VMFINS DEFAULTS B for additional options
VMFBLD2760I VMFBLD processing started
VMFSIP2453I Table 6VMCPR20 SRVAPPS J is a subset of table 6VMCPR20 SRVAPPS I
VMFBLD1851I Reading build lists
VMFBLD2182I Identifying new build requirements
VMFBLD2182I New build requirements identified
VMFBLD1851I (1 of 1) VMFBDNUC processing CLOAD EXC55001 G, target is PRIVATE
2B01 (G)
LOAD LIST: $$$TLL$$ EXEC A1 01/01/14 19:24 (VS1B01)

CSECT'S WITH SIZE GREATER THAN CONDITIONAL PAGE BOUNDARY

@MAPSTRT 036950

VMFBLD1851I (1 of 1) VMFBDNUC completed with return code 0
VMFBLD2760I VMFBLD processing completed successfully
vsbldnuc: Processing ended with rc(0).
Ready: T=5.26/5.52 19:24:31
```

5. ... until all assemblies completed.
6. User invokes VSBINDNUC to build CP NUC with VSSI modifications.
7. VSCOPY command (not shown) builds VSSI TXTLIB and configuration files, then copies objects to appropriate CP PARM disks.

## Product Configuration

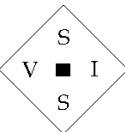
1

- **Build SDISK Configuration Files**
- **Format SDISK database MDISKs**
- **Issue SDINIT command to initialize configuration**
- **User issues SDOPEN to connect to the specified DB**
- **Run/test configuration**

## Product Configuration Specs

2

- Each SDISK database is open in WRITE mode to the specified user instance
- Users can configure multiple concatenated SDISK databases to be accessed at SDOPEN time (primary DB is R/W; secondary DBs are R/O)
- Database usage permissions (R/W, R/O, etc) can be assigned to the user population by user name prefix or CP directory class (default permissions apply to all unless overridden via prefix or class)



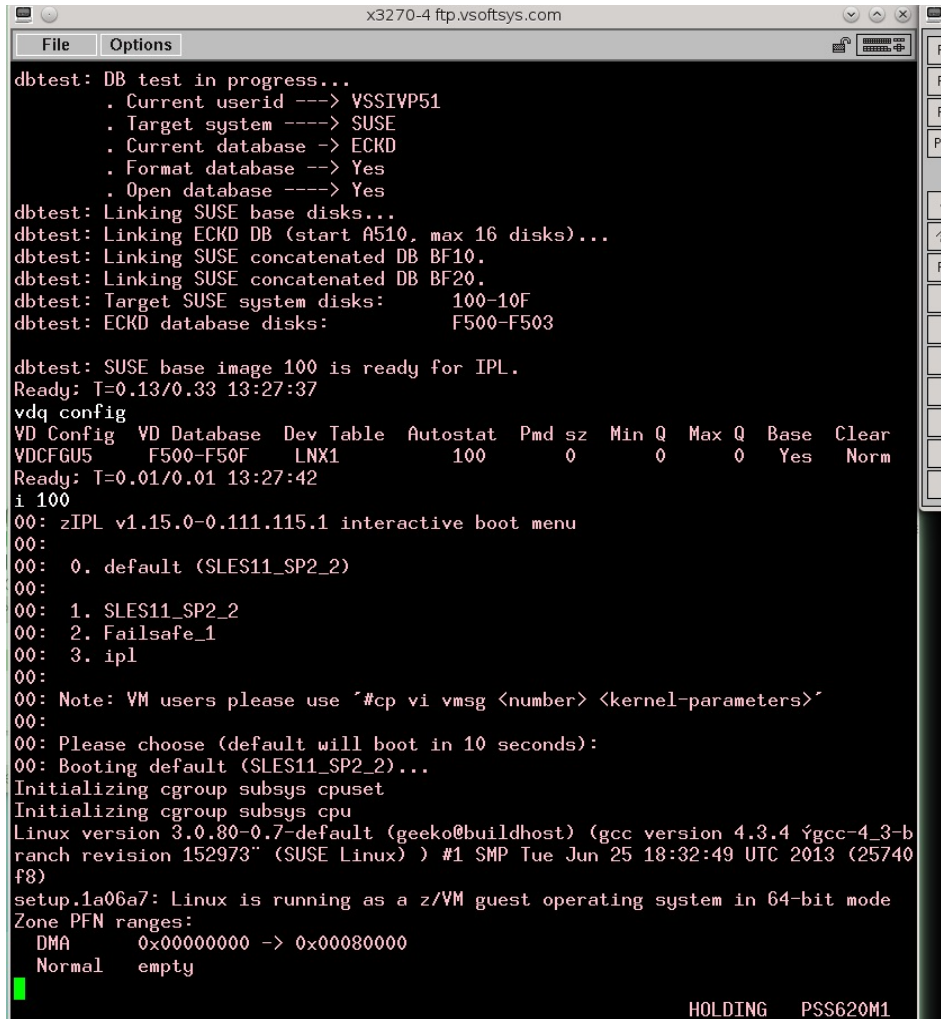
# ShadowDisk/Z Product Summary

- Usage Scenario (1 of 2)

CONFIG Filename	Statement(s)	Usage
SDSYSTEM DEFAULTS	USER_CONFIG VSSIP5 SDCFGU5	Specifies that all users with prefix VSSIP5 (VSSIP51, 52, 5A, etc.) will use the database configuration specified by SDCFGU5 SDCONFIG below.
SDCFGU5 SDCONFIG	BASE F500 SDMD_MAX 16 BASE_SYSTEM YES SDDEVICE LNX1	Specifies that the ShadowDisk/Z database consists of from 1 to 16 MDISKs, starting at virtual address F500. A base Linux file system exists, and is defined in LNX1 SDDEVICE below.
LNX1 SDDEVICE	DEVTBL 100-10F LNX001	Specifies a base Linux file system of 16 MDISKs at virtual addresses 100 thru 10F (linked R/O by all users), as well as the track format table describing the disk geometry. Multiple DEVTBL statements can be specified.
LNX001 SDFORMAT	(binary)	Block geometry data generated by the SDBLDFMT command against the base disk(s).

# ShadowDisk/Z Product Summary

- Usage Scenario (2 of 2)



```
x3270-4 ftp.vsoftsys.com
File Options
dbtest: DB test in progress...
. Current userid ---> VSSIVP51
. Target system ----> SUSE
. Current database -> ECKD
. Format database --> Yes
. Open database ----> Yes
dbtest: Linking SUSE base disks...
dbtest: Linking ECKD DB (start A510, max 16 disks)...
dbtest: Linking SUSE concatenated DB BF10.
dbtest: Linking SUSE concatenated DB BF20.
dbtest: Target SUSE system disks: 100-10F
dbtest: ECKD database disks: F500-F503

dbtest: SUSE base image 100 is ready for IPL.
Ready: T=0.13/0.33 13:27:37
vdq config
VD Config VD Database Dev Table Autostat Pmd sz Min Q Max Q Base Clear
VDCFGU5 F500-F50F LNX1 100 0 0 0 Yes Norm
Ready: T=0.01/0.01 13:27:42
i 100
00: zIPL v1.15.0-0.111.115.1 interactive boot menu
00:
00: 0. default (SLES11_SP2_2)
00:
00: 1. SLES11_SP2_2
00: 2. Failsafe_1
00: 3. ipl
00:
00: Note: VM users please use '#cp vi vmmsg <number> <kernel-parameters>'
00:
00: Please choose (default will boot in 10 seconds):
00: Booting default (SLES11_SP2_2)...
Initializing cgroup subsys cpuset
Initializing cgroup subsys cpu
Linux version 3.0.80-0.7-default (geeko@buildhost) (gcc version 4.3.4 'gcc-4.3-b
ranch revision 152973' (SUSE Linux)) #1 SMP Tue Jun 25 18:32:49 UTC 2013 (25740
f8)
setup.1a06a7: Linux is running as a z/VM guest operating system in 64-bit mode
Zone PFN ranges:
DMA 0x00000000 -> 0x00080000
Normal empty
HOLDING PSS620M1
```

1. Logon as VSSIVP51
2. The DBTEST exec (in-house):
  - . Links Linux base system disks as virtual addresses 100-10F (R/O)
  - . Links SDISK database disks as virtual addresses F500-F503 (R/W)
3. User boots Linux (vdev 100)

- SDINIT

- SDOPEN

- SDCLOSE

- SDADD

Adds minidisks



- SDIPL
- SDLINK
- SDQUERY
- SDSET



- SDBKUP

- SDREST

- SDUNLOAD

Backup a SDISK DB to tape media (logical backup)

- SDLOAD

- SDUTIL

Copy/move/print/delete data



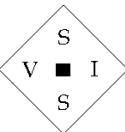


# ShadowDisk/Z Product Summary

## About us



- Established in 1982
- Located in Gainesville GA (USA)
- Customer base is typically Fortune 100
- Established solid reputation for product support
- Support cost included in yearly license cost
- Support requests handled via toll –free (855-411-VSSI), local number (770-781-3200), and email ([support@vsoftsys.com](mailto:support@vsoftsys.com))





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