



| z/VM System Test

z/VM: Linux AutoYast Demo

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Objectives

- **Share findings on the AutoYast feature**
- **The idea of automation from z/VM to Linux**

AutoYast: The foundation

- **Pre-configuration stages**
- **Creating the parm file**
- **Creating the .xml file**
- **Tested on SP3 Beta 3 patch**
 - Local patch, not yet available in service stream
 - (LTC Bugzilla # 16817)

Newly Installed Linux

■ **Get the boot files**

- Ftp to an installation file server (SUSE)
 - VMRDR IKR The Linux kernel built for use with a ram disk
 - INITRD The initial ram disk image
 - PARM FILE The generic parm file for use with the ram disk system.
- Punch files to reader
- IPL (boot) Linux from virtual reader

System requirements

- **Minimum system requirements**
 - Approx. 50 cylinders (25MB) of disk space for the boot files
 - 512 MB of memory
 - Minidisk – Linux root file system

Parm File

- **AUTOYAST=ftp://userid:pwd@1.23.45.678//linuxImages/autoinst.xml**
- **ramdisk_size=65536 root=/dev/ram1 ro init=/linuxrc**
- **AUTOINSTALL=yes IP_INTERFACE=qeth IP_HOST=linux02.endicott.ibm.com**
- **IP_ADDR=9.60.27.213 IP_NETMASK=255.255.255.0 IP_BROADCAST=9.60.27.255**
- **IP_GATEWAY=9.60.27.1 IP_DNS=9.0.3.1 IP_SEARCH=endicott.ibm.com**
- **READ_DEVNO=600 WRITE_DEVNO=601 DATA_DEVNO=602 PORTNAME=suselin7**
- **INST_PASSWORD=pword INST_INFO=ftp INST_IP_ADDR=9.60.25.249**
- **INST_IP_DIR=/linuxImages/SuSE/sles-9/s390x/installroot FTPUSER=userid**
- **FTPPASSWORD=pword INST_SCREEN=VNC VNC_PASSWORD=secure IP_MTU=1500**

-
-

X E D I T 1 File

Creating the XML file

- **SUSE autoyast tool**
- **From a Linux machine command line**
 - Linux:~ # `yast2 autoyast`
- **Customize as needed**
- **Save .xml file on the installation file server**

YaST @ linmstr

Press F1 for Help

[File] [View] [Classes] [Tools] [Preferences]

Available modules

- Software
 - Online Update
 - Package Selection
- Hardware
 - DASD
 - Partitioning
 - Printer
 - Zfcp
- System
 - General Options
 - Reporting Logging
 - Restore system
 - Runlevel Editor
 - /etc/sysconfig Editor
- Network Devices
 - Network Card
- Network Services
- Security and Users
 - CA Management
 - Firewall
 - VPN
 - Security settings
 - Edit and create users
- Misc
 - Complete Configuration Files
 - Custom Scripts

Online Update
Get patches to correct and improve your existing installation

Package Selection
Configure Package Selection and Software Settings

YaST @ linmstr

Configured DASD Disks

In this dialog, manage DASD disks on your system.

To filter disks that you want to have displayed, set the Minimum Channel and the Maximum Channel and click Filter.

To configure a new DASD disk, click Add.

To remove a configured DASD disk, select it and click Delete.

DASD Disk Management

Minimum Channel

0x0000

Maximum Channel

0xffff

[Filter]

Channel	Format	Use DIAG
0.0.0150	Yes	No
0.0.0151	Yes	No

Configure Drives

Drive

<db>

- Use available free space only
- Reuse all existing partitions
- Use the following (comma separated) partitions

Partition Numbers (i.e., 3,4,5)

 Initialize hard drive

Partition Plans

Device	Mount	Size	Type	File System	Region
/dev/dasdb	swap	max	Linux swap	Swap	
/dev/dasda	/	max	Linux native	Ext3	

[Add New Disk] [Delete Disk]

[Cancel]

[Next]

YaST @ linmstr

[File] [View] [Classes] [Tools] [Preferences]

XML Layout

Source

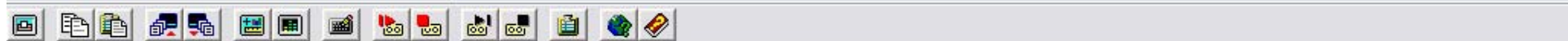
- Software
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```
<?xml version="1.0"?>
<!DOCTYPE profile SYSTEM "/usr/share/autoinstall/dtd/profile.dtd">
<profile xmlns="http://www.suse.com/1.0/yast2ns" xmlns:config="http://www.suse.com
  <configure>
    <dasd>
      <devices config:type="list">
        <listentry>
          <channel_id>0.0.0150</channel_id>
          <diag config:type="boolean">>false</diag>
          <format config:type="boolean">>true</format>
        </listentry>
        <listentry>
          <channel_id>0.0.0151</channel_id>
          <diag config:type="boolean">>false</diag>
          <format config:type="boolean">>true</format>
        </listentry>
      </devices>
    </dasd>
  </configure>
  <install>
    <general>
      <clock>
        <hwclock>localtime</hwclock>
        <timezone>US/Eastern</timezone>
      </clock>
      <language>en_US</language>
      <mode>
        <confirm config:type="boolean">>false</confirm>
        <forceboot config:type="boolean">>false</forceboot>
      </mode>
      <mouse>
        <id>none</id>
      </mouse>
    </general>
    <partitioning config:type="list">
      <drive>
        <device>/dev/dasdb</device>
        <initialize config:type="boolean">>true</initialize>
        <partitions config:type="list">
```

Check point

- **Boot files are loaded**
- **Parm file customized**
- **.xml file is on the installation server**
- **Next: punch files and IPL Linux**

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
PUNCH VMRDR IKR A (NOH
RDR FILE 0051 SENT FROM LINUX02 PUN WAS 0051 RECS 060K CPY 001 A NOHOLD NOKEEP
Ready; T=0.02/0.13 11:15:42
PUNCH PARM FILE A (NOH
RDR FILE 0052 SENT FROM LINUX02 PUN WAS 0052 RECS 0009 CPY 001 A NOHOLD NOKEEP
Ready; T=0.01/0.01 11:15:45
PUNCH SUSE INITRD A (NOH
RDR FILE 0053 SENT FROM LINUX02 PUN WAS 0053 RECS 178K CPY 001 A NOHOLD NOKEEP
Ready; T=0.05/0.40 11:15:53
order rdr 51 52 53
0000003 FILES ORDERED
Ready; T=0.01/0.01 11:16:03
i c clear
NO FILES CHANGED
Linux version 2.6.5-7.232-s390x (geeko@buildhost) (gcc version 3.3.3 (SuSE Linux
)) #1 SMP Tue Oct 11 15:51:30 UTC 2005
We are running under VM (64 bit mode)
On node 0 totalpages: 131072
DMA zone: 131072 pages, LIFO batch:31
Normal zone: 0 pages, LIFO batch:1
HighMem zone: 0 pages, LIFO batch:1
Built 1 zonelists
-
HOLDING ZVMV5R20
MA b 23/001
```

Yes/No:Which terminal do want to use?

- 1) X-Window
- 2) VNC (VNC-Client or Java enabled Browser)
- 3) ssh

Choice:Please enter the Password for VNC-Access (6 to 8 characters):

ramdisk /dev/ram0 freed

>>> SUSE LINUX Enterprise Server 9 installation program v1.6.49 (c) 1996-2004 SU
SE LINUX AG <<<

SCSI subsystem initialized

st: Version 20040318, fixed bufsize 32768, s/g segs 256

Starting hardware detection...

Searching for

info file...

Loading data into RAM disk.....

.....
.....
.....
.....
.....

VM READ ZVMV5R20

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
.....
Loading data into RAM disk.....
Driver Update: Service Pack 3
creating device nodes ... done
integrating the shared objects of the installation system...
integrating kernel modules of the installation system...
starting slpd to announce VNC...
starting yast...
Unpacked extension disk...OK

starting VNC server...
a log can be found in /tmp/vncserver.log ...

***
***      You can connect to 9.60.27.213, display :1 now with vncviewer
***      Or use a Java capable browser on http://9.60.27.213:5801/
***

(When YaST2 is finished, close your VNC viewer and return to this window.)

VM READ  ZVMV5R20
b 23/001
Connected to remote server /host gdlgst1.endicott.ibm.com using port 23
```

root's Installation desktop (linux02:1) - Mozilla


File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop Search Print

Home Bookmarks mozilla.org mozillaZine mozdev.org

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

YaST



Preparing System for Automatic Installation

- ✓ Language
- ➔ Autoinstall Settings
- Perform Installation

Base Installation

- ✓ pre probing stage
- ✓ Probe hardware
- ✓ Retrieve & Read Control File
- Process Profiles and Rules

Configuration

- Perform Installation
- System Configuration
- Clean Up

Formatting /dev/dasda: cylinder 1229 of 3088 done

39%

0%

Initial Configuration

71%

Abort Accept

Applet VncViewer started

root's Installation desktop (linux02:1) - Mozilla

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop <http://9.60.27.213:5801/> Search Print

Home Bookmarks mozilla.org mozillaZine mozdev.org

Disconnect Options Clipboard Send Ctrl-Alt-Del Refresh

Current Package

tar-1.13.25

100%

Current Package

- tar-1.13.25

Description

- GNU implementation of tar ((t)ape (ar)chiver)

Size

- 1.02 MB

Installation

	Time remaining (estimated)
SUSE SLES 9 Service-Pack	
CD 1:	12:18
CD 2:	06:32
CD 3:	---
SUSE SLES	
CD 1:	---
SUSE CORE	
CD 1:	02:47
47%	
CD 2:	---
CD 3:	---
CD 4:	---
CD 5:	---
Total:	24:43

[Slide Show...](#)

Installation Log (Extract)

```

grep-2.5.1 --- GNU Grep
pam-0.77 --- A security tool that provides authentication for applications
pam-32bit-9 --- A security tool that provides authentication for applications
recode-3.6 --- A character set converter
sed-4.0.9 --- A stream-oriented non-interactive text editor
tar-1.13.25 --- GNU implementation of tar ( (t)ape (ar)chiver )

```

Back [Abort Installation](#) Next

Applet VncViewer started

Congrats on your newly installed Linux

- **Reboot**
- **Login**
- **Make changes if needed**

U R Good 2 Go

Documentati on:

SUSE Linux 9 Bible

Preparation.pdf (SP#/CD1/docu)

AutoYast html file (usr/share/doc/packages/autoyast2)

The idea of automation from z/VM to Linux

- **Objective: eliminate as many steps in the Getting Started with Linux (GSWL) book as possible**
- **GSWL as the playbook for design flow**
- **Cloning is out of scope**

A few areas to investigate

- **When the feature will be in Linux service stream**
- **Using secondary user or SMAPI**
- **Appliance selection xml file**
- **Maintenance from release to release**
- **Directory Managed (Dirmaint)**

Thank you