



# Opensolaris 2009.06 Automated Installer

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**RPE Sustaining**

# Automated Installer

- Provides hands-free install for Sparc systems: sun4v, sun4u systems
- Provides (almost) hands-free install for x86 systems
- Configuration options stored in XML files

# Automated Installer Sparc requirements

Uses wanboot derived dhcp boot-support present on OBP versions 4.17.1 or higher

```
#prtdiag -v | grep OBP
```

```
OBP 4.17.1 2005/04/11 14:31
```

# Automated Installer x86 requirements

Any PX/E capable network interface connected to the AI network

# AI configuration mantra

***“Lasciate ogni speranza, voi ch'entrate.”***

***“Necessità 'l ci 'nduce, e non diletto”***

## Issues to be aware of “pre-installation”

- 'out of the box' AI server settings will have default settings for hostname (“opensolaris”) and default privileged user (“jack/jack”) and default root password set to “opensolaris”
- These need to be modified to avoid inadvertent confusion for multiple install clients...

# AI server configuration

- Install SUNWinstalladm-tools
- Configure a dhcp server (by default the Sun dhcpmgr provided one is used)
- Configure install services for each architecture
- Configure install clients for each candidate machine
- Modify the AI manifests as required

# AI manifest

- These drive the installation choices made by the autoinstall process.
- Stored in XML in `<service-path>/auto_install/...` (where `<service-path>` is the pathname specified by the `installadm create-service` call)



# AI manifest modification

- Criteria files allow choice of ai\_manifest and system configuration to be determined based on IP address, MAC address or architecture
- Can be located anywhere on the AI server and are added to the configuration using

```
# installadm add -m ./criteria -n service
```

- Associates a particular manifest with an installation service.  
Displayed by

```
# installadm list -n service
```

## Issues to be aware of “post-installation”

- Old sparc graphics chipsets no longer supported
- Power management needs to be disabled on these machines
- X86 grub boot entries need to be modified to support serial console booting and menu selection

# Don't Panic!

```
File Edit View Terminal Help
[root@server]# cat crit_SS.xml
<ai_criteria_manifest>
  <ai_criteria name="MAC">
    <value>00:03:ba:5b:9d:3b</value>
  </ai_criteria>
  <ai_manifest_file URI="./ai_manifest_sparc_1.xml"/>
  <sc_manifest_file name="AI" URI="./sc_critSS.xml"/>
</ai_criteria_manifest>
[root@server]#
```



# Don't Panic!

```
File Edit View Terminal Help

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-->

<!DOCTYPE service_bundle SYSTEM "/usr/share/lib/xml/dtd/service_bundle.dtd.1">
<service_bundle type="profile" name="name">
  <service name="ai_properties" version="1" type="service">
    <instance name="default" enabled="true">
      <property_group name="ai" type="application">
        <propval name="username" type="astring" value="rpeuser"/>
        <propval name="userpass" type="astring" value="$5$MqdDwTUG$YwFrp
n3uUecuUF70o8UR0Ero.QPplB4jlcZ8S0lewd6"/>
        <propval name="description" type="astring" value="default_user"/
>
        <propval name="rootpass" type="astring" value="$5$MqdDwTUG$YwFrp
n3uUecuUF70o8UR0Ero.QPplB4jlcZ8S0lewd6"/>
        <propval name="timezone" type="astring" value="GB"/>
        <propval name="hostname" type="astring" value="client-t"/>
      </property_group>
    </instance>
  </service>
</service_bundle>
[root@server]#
```

# Sparc installation

```
File Edit View Terminal Help
ok reset-all
Resetting ...

Sun Blade 150 (UltraSPARC-IIe 650MHz), No Keyboard
Copyright 2005 Sun Microsystems, Inc. All rights reserved.
OpenBoot 4.17.1, 2048 MB memory installed, Serial #56335675.
Ethernet address 0:3:ba:5b:9d:3b, Host ID: 835b9d3b.

ok boot net:dhcp
Boot device: /pci@1f,0/network@c,1:dhcp File and args:
Timed out waiting for BOOTP/DHCP reply
<time unavailable> wanboot info: WAN boot messages->console
<time unavailable> wanboot info: configuring /pci@1f,0/network@c,1:dhcp

<time unavailable> wanboot info: Starting DHCP configuration
<time unavailable> wanboot info: DHCP configuration succeeded
<time unavailable> wanboot progress: wanbootfs: Read 366 of 366 kB (100%)
<time unavailable> wanboot info: wanbootfs: Download complete
Wed Jul 15 15:41:15 wanboot progress: miniroot: Read 38712 of 175868 kB (22%)
```

# Sparc power management changes

```

File Edit View Terminal Help
# fields enclosed by brackets "[" replaced with your own identifying
# information: Portions Copyright [yyyy] [name of copyright owner]
#
# CDDL HEADER END
#
# Copyright 2007 Sun Microsystems, Inc. All rights reserved.
# Use is subject to license terms.
#
#pragma ident "%Z%M% %I% %E% SMI"
#
# Power Management Configuration File
#
# This entry keeps removable media from being powered down unless the
# console framebuffer and monitor are powered down
# (See removable-media(9P))

device-dependency-property removable-media /dev/fb

autopm                disable
statefile /dev/zvol/dsk/rpool/dump
# Auto-Shutdown      Idle(min)      Start/Finish(hh:mm)      Behavior
autoshutdown          30              9:00 9:00                noshutdown
[rpeuser@client-t]$

```

# AI Example client-x

```
File Edit View Terminal Help
HTTP request sent, awaiting response... 200 OK
Length: 49 [text/plain]

100%[=====>] 49          ---K/s

03:34:40 (3.20 MB/s) - `/tmp/.image_info' saved [49/49]

Done mounting automated install image
Configuring devices.
Reading ZFS config: done.

opensolaris console login: Service discovery phase initiated
Service name to look up: 0906x86
Service discovery finished successfully
Process of obtaining configuration manifest initiated
Configuration manifest obtained
Automated Installation started
The progress of the Automated Installation can be followed by viewing the logfile at /tmp/install_log
Jul 15 02:35:03 opensolaris genunix: WARNING: Time of Day clock error: reason [Reversed by 0xe0e]. -- Stopped tracking Time Of Day clock.
Jul 15 02:35:04 opensolaris mDNSResponder: mDNSPlatformRawTime went backwards by 3683226 ticks; setting correction factor to 1564693803
```

# X86 grub problem

```
File Edit View Terminal Help
jack@opensolaris:~$ bootadm list-menu
the location for the active GRUB menu is: /boot/grub/menu.lst
default 0
timeout 10
bootadm: no matching entry found
jack@opensolaris:~$ cat /rpool/boot/grub/menu.lst
splashimage /boot/grub/splash.xpm.gz
background 215ECA
timeout 30
default 0
#----- ADDED BY BOOTADM - DO NOT EDIT -----
title OpenSolaris 2009.06
findroot (pool_rpool,0,a)
bootfs rpool/ROOT/opensolaris
splashimage /boot/solaris.xpm
foreground d25f00
background 115d93
kernel$ /platform/i86pc/kernel/$ISADIR/unix -B $ZFS-BOOTFS,console=graphics
module$ /platform/i86pc/$ISADIR/boot_archive
#-----END BOOTADM-----
jack@opensolaris:~$
```



# X86 grub fix-up for serial console boot

```
File Edit View Terminal Help
jack@opensolaris:~# cat /rpool/boot/grub/menu.lst
#splashimage /boot/grub/splash.xpm.gz
#background 215ECA
timeout 30
default 0
#----- ADDED BY BOOTADM - DO NOT EDIT -----
title OpenSolaris 2009.06
findroot (pool_rpool,0,a)
bootfs rpool/R00T/opensolaris
#splashimage /boot/solaris.xpm
#foreground d25f00
#background 115d93
kernel$ /platform/i86pc/kernel/$ISADIR/unix -B $ZFS-BOOTFS,console=ttya
module$ /platform/i86pc/$ISADIR/boot_archive
#-----END BOOTADM-----
jack@opensolaris:~#
```

## Further Information

- [caiman-discuss@opensolaris.org](mailto:caiman-discuss@opensolaris.org)
- #caiman-discuss IRC channel at [irc.freenode.net](http://irc.freenode.net)
- <http://defect.opensolaris.org/bz/buglist.cgi?quicksearch=installadm>



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