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open

USE   IMPROVE   EVANGELIZE

OpenSolaris 2009.06 preview

Nick Todd
Sun Microsystems

SPARC

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Supported SPARC hardware

All currently shipping CMT systems:

Sun SPARC Enterprise T5xxx Server

Sun SPARC Enterprise T2000 Server

Sun SPARC Enterprise T1000 Server

Sun Fire T1000 Server

Sun Fire T2000 Server

Low and midrange M-series systems:

Sun SPARC Enterprise M[345]000 Server

SPARC hardware that should work

Needs to support WAN boot

OBP >= 4.17 (Forth)

OBP >=5.20.3 (C)

#eeprom | grep network-boot-arguments

Examples:

Sunblade 1000, 2000, 2500

Ultra 25, 45, 80

E6900

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Check for existing systems:

eeprom | grep network-boot-arguments

:
If the network-boot-arguments parameter is set or if the following output is displayed

network-boot-arguments: data not available.

then the OBP can be used with the Automated Installer.

C OBP is for Serengeti systems, Forth for other sun4u/sun4v systems.

Automated Installer

Only method of installing SPARC

Also available for x86 (as well as live CD).

Limited pre-configuration.

Use Distro Constructor to build custom AI images.

See:

http://opensolaris.org/os/project/caiman/auto_install/

caiman-discuss to join in the discussions.

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Needs OBP capable of handling WANboot.

Initially AI on x86 to install SPARC.

Instructions at website. In a nutshell:

Install OS on x86
Download SPARC AI ISO
Setup x86 box as install server
On SPARC system
boot net:dhcp

Subject of future LOSUG presentation.

Supported SPARC Xorg drivers

XVR-50

On board graphics

XVR-100

PCI

XVR-300

PCI-E

XVR-2500

PCI-E

AST2100

Service Processor/Remote KVM

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XVR-50 and AST2100 are built in to certain servers.
XVR-100 is a PCI bus card (ATI Radeon 7000 ME based)
XVR-300 and XVR-2500 are PCI-Express.

FOX Fully Open X project

http://opensolaris.org/os/project/fox

See xwin-discuss for more details of porting effort.

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Merge of:
        Current OpenSolaris X Code Drop
        Xorg SPARC driver sources
        X11R7.2 source builds

SPARC Xorg compatibility matrix link on that site.

Ldoms 1.1

Now available on OpenSolaris based CMT systems

Warm and Cold Migration

Virtual I/O Dynamic Reconfiguration

See:

http://opensolaris.org/os/community/ldoms

Unique SPARC based technology
Partition system resources to generate multiple discrete systems within a single box.

Used by RPE/Services to provide multiple OS instances in a single box for testing.
Many new features in Ldoms 1.1.

Migration => Move domain from one physical platform to another.
Cold Migration => Moving inactive domain
Warm Migration => Active domain suspended, entire state moved to target platform, domain resumed.

VIO DR allows virtual services and devices to be dynamically added to a domain without requiring a domain reboot.

x86

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Intel Nehalem

OpenSolaris support for Nehalem

Announcements 1st and 14th April

SSE 4.2

Performance counters

System Locality Information Table

Power Aware Dispatcher

PowerTop

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OpenSolaris 2009.06 has been enhanced (in conjunction with Intel) to support Nehalem from the outset.

SSE 4.2 instructions are supported in latest Sun Studio compilers. Sun Studio Express 3/09. SSE (Streaming SIMD Extensions).

SLIT in conjunction with the System Resource Affinity Table (SRAT) allows OpenSolaris to optimise MPO within NUMA (non-uniform memory access) systems such as Nehalem

SLIT stores node-to-node latency info.
SRAT – System Resource Affinity Table: Topology info.

PAD - allows us to have finer grained control over power consumption. Integrated with dispatcher to allow this.

PowerTOP – command line tool ported to OpenSolaris with Intel's help allowing the analysis of the systems power consumption using the Dtrace framework.

Intel Atom

OpenSolaris support for Atom

Intel 945GME graphics support

Performance counters

MOVBE instruction.

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Support for processor pre OS 2008.11
Intel 945GME graphics used in many netbooks.
6719310 'Expose availability of MOVBE instruction' allows flip of byte order in 32 or
64-bit words. Useful for handling peripherals that need a different byte order in
embedded devices. (snv_106).

Performance counters allow us to analyse and optimise performance on processor.

Toshiba laptops

Tecra M10 and R600

Supported by Sun.

Available with OS 2008.11 preinstalled.

BIOS update

Avoid 110 and 111.

See http://opensolaris.toshiba.com

BIOS update on M10 is best done with Windows Vista as the update assumes that's the installed OS. If like me, you installed OS upgrading BIOS you need to get the update onto a floppy, attach a USB floppy drive to the Toshiba and boot. Select F12 to choose floppy and follow instructions from Toshiba.

6818652 cpu_acpi_cache_cst panics with _CST objects on Tecra M9, M10 and Portege R600.

Adobe Reader

Now available for x86

www.adobe.com/go/getreader

Networking changes - Clearview

IPMP rewrite

Vanity naming unification

    eg: # dladm rename-link bge0 mgmt0

IP Observability

http://opensolaris.org/os/project/clearview/

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IPMP rewrite simplifies admin

Vanity naming allows assignment of meaningful names, legacy interfaces to use GLDv3 interface features such as VLAN and dladm to admin the datalink

IP Observability means that IP traffic is monitored at IP layer so loopback and inter/intra zone traffic can be snooped.

Networking changes - Crossbow

Network Virtualisation

MAC layer

Virtual NICs

VNIC admin via dladm(1M)

Bandwidth and flow management via dladm(1M) and flowadm(1M)

http://opensolaris.org/os/project/crossbow/

Virtual NICS allow allows a single physical NIC to be subdivided into several virtual NICS which can be assigned to zones and have resource limits applied to them.

IPS

Fat Packages

Variants and Facets

http://mail.opensolaris.org/pipermail/pkg-discuss/2008-December/009092.html

Different repositories (in order of stability)

Support

Release

Dev

Contrib

Pending

Extras – VirtualBox, Flash, RealPlayer.

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Variants and facets are tags on IPS actions that allow a finer degree of control over pkg installation.

Variants are mutually exclusive such as:
    arch = SPARC|x86
    zone = global|local

Facets are options that can be selected in different combinations such as locale, documentation, SPARC arch (sun4u,sun4v).

Means less individual packages.

Support repository contains updated packages available to customers with a support contract.

Extras repository needs registration.

Other goodies

Sun Studio Express 3/09

Sun Studio 12 Update 1

Support for Nehalem/SSE 4.2

OpenDS 1.2.0

Directory server based on LDAP and DSML.

Netbeans 6.5.1

OpenOffice 3

Glassfish 2.1

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Sun Studio Express
        HW support for specific x86 and SPARC instruction sets
        support to optimise code for specific processor such as Nehalem, Fujitsu
        SPARC64 VII processor.

OpenDS
DSML – Directory Service Markup Language.
Written in JAVA
Started as internal Sun project but now completely Open Source (CDDL).

NetBeans provides support for PHP, Javascript and AJAX

Glassfish opensource application server which implements Java EE 5. It will be
used as the basis for Sailfin SIP AppServer project.

Building ON on OpenSolaris

Need extra packages on top of OS2009.06

Sun Studio 12 compiler tarball.

Requires access to dev and extras repo

Extras repo needs registration.

See http://opensolaris.org/os/project/indiana/building_on for more details.

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Beyond OS 2009.06

Boomer

Improved audio support.

Currently available as a tarball.

Targeted at build 115 (end of May).

Fast reboot enabled by default

In build 112 available in the next few weeks.

Will perform fast reboot on panic too.

http://www.opensolaris.org/os/community/on/flag-days/pages/2009032403/

Fast reboot capable if:

        x86
        All drivers implement quiesce(9E) function.
        System is not blacklisted platform
                Vbox guests
                Vmware guests
                Tyan MCP55 reference whitebox.

See the flag day for more details.

Track RFE 6830088 for SPARC.

OpenSolaris 2009.06 Preview

Questions?

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