



Solaris 8 Certification Status at CERN

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Agenda

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- ◆ **Status**
- ◆ **Work in Progress**
- ◆ **Current Problems**
- ◆ **Compilers**
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Solaris 8 Installation Protocol

- ◆ **Solaris 8 supports BOOTP/DHCP as installation protocol as well as RARP**
- ◆ **This is supported by the Open Boot PROM of all Sun UltraSPARC hardware**
 - This is all Sun modern hardware
 - The command is
OK Boot net:dhcp - install
- ◆ **Step forward as BOOTP is designed to go through routers while RARP is not**



Solaris 8 Installation Protocol (Contd.)

- ◆ **Previous versions of Solaris only supported the RARP protocol**
- ◆ **So in order to install Solaris in the CERN network through routers using RARP we had to**
 - **Modify the system in the Sun installation server**
 - **IP driver: Time to Live greater than 1**
 - **Bootparamd: Routing table**
 - **Specially configure “helper address” in routers**



Solaris 8 Installation Protocol (contd.)

Now no system hacking required

However:

- ◆ **Have to setup and configure BOOTP/DHCP server**
 - Currently in different machine as Sun DHCP server clashing with CMU BOOTP server that we run on SUN installation server for other hardware
 - Hardware DHCP “ident code” has to be found out by snooping the network and introduced manually in server for each new SUN hardware model on the site



Solaris 8 Installation Protocol (contd.)

- ◆ **Problem with sysidnet hanging in CERN network environment**
 - Use “localconfig” script called from /sbin/sysconfig in installation client to replace sysidnet
 - Before Solaris 8 we had to remove sysidnet + sysidsys + sysidconfig anyway for hands-off installation, otherwise always prompted for timezone and netmask...
 - Now `/${MOUNT_CONFIG_DIR}/sysidcfg` config file is the Sun standard way to set “site” installation parameters
 - Sysidcfg should have removed need for “localconfig” if it weren’t for sysidnet hanging...

Sysidcfg

name_service=DNS

{domain_name=cern.ch

name_server=ip-dns-1(137.138.16.5),ip-dns-2(137.138.17.5)

search=cern.ch}

network_interface=PRIMARY

{protocol_ipv6=no}

security_policy=NONE

system_locale=en_US

terminal=vt220

timezone=MET

root_password=5HkS4GWfrBCN2

timeserver=ip-time-1.cern.ch

localconfig

```
#!/bin/sh
```

```
# set up netmasks, timezone, defaultrouter, nameserver, etc and fix up  
.sysIDtool.state
```

```
STATE=/tmp/root/etc/.sysIDtool.state
```

```
echo 128.141.0.0 255.255.0.0 >/tmp/root/etc/inet/netmasks
```

```
echo 'TZ=MET' >/tmp/root/etc/default/init
```

```
cp /sbin/sysIDtool.state $STATE
```

```
HOSTNAME=`uname -n`
```

```
set `grep -w ${HOSTNAME} /sbin/hosts`
```

```
IPADDR=$1
```

```
set ` /sbin/guess_netconf ${IPADDR}`
```

```
DEFAULTROUTER=$1
```

```
NETMASK=$2
```

```
BROADCAST=$3
```

```
echo " Setting Default Router\c"
```

```
cat > /tmp/root/etc/defaultrouter <<EOFdefaultrouter
```

```
 ${DEFAULTROUTER}
```

```
 EOFdefaultrouter ...
```




Status

- ◆ **Solaris/SPARC second architecture for LHC**
 - Alternative to PCs
 - To check numerical issues
- ◆ **Over 600 installation clients**
 - Mostly Solaris 7
- ◆ **Solaris 8 (HW0401) served unofficially (~20 clients) from the SUNINST0 installation server + SUNINST1 DHCP server**
 - This was necessary as new hardware such as the 280R servers require Solaris 8
- ◆ **Obsolete Installation Server Hardware**
 - SPARC 20s with disks falling apart



Work In Progress

- ◆ **The current installation server and reference machine hardware is being upgraded**
 - From SPARC 20s to Netra T and 280R + A1000 disk box
- ◆ **An updated kit has been set up in the installation server**
 - HW0202
- ◆ **We are consolidating our CMU BOOTP server onto the SUN DHCP server**



Current Problems

- ◆ **SSH and SSHD problems**
 - With AFS authentication (mostly solved)
 - SSH client hangs (being analyzed)
 - Running out of entropy
 - Testing ANDIrand and/or /dev/random
- ◆ **JAVA update required for security**
- ◆ **XDM with PAM support not available**
 - Required for HEPiX X11 environment
 - Otherwise you can use dtlogin
- ◆ **PAM configuration for AFS with XDM**



Compilers

- ◆ **The original request from the Physics community was to keep the current SPARCcompilers V6.1 (= C++ 5.2) as the standard for Solaris 8.**
- ◆ **However this version has C++ template library compatibility problems**
- ◆ **On request of CMS we installed Sun Forte Developer 7 Early Access 2**
- ◆ **The tests have been successful**
- ◆ **The current consensus of both Atlas and CMS is to go to Forte Developer 7 (=C++ 5.4) as soon as released**



Conclusions

- ◆ **We expect the SSH problems be solved soon by the person responsible**
- ◆ **We expect to be ready for certification of Solaris 8 and provide “official” support very soon**
- ◆ **Once certification done we plan migration campaign**
 - **Although a large number of machines unable to run Solaris 8**
- ◆ **Further work required on Solaris desktop**
 - **Looking onto Gnome**
- ◆ **We are willing to cooperate on Solaris issues with interested sites**