

AIX Questions

Compiled by Brad Townley



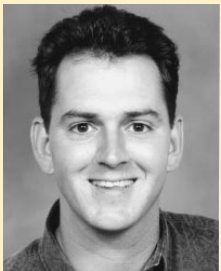
The AIX Solution Provider Technical Support Group in Austin, Texas, supports software vendors who are developing or porting applications to AIX. This article is a compilation of questions that are frequently asked by vendors. The name of the responding Technical Support Group staff member appears after each response.

How can I load OpenGL™ extensions in Common Desktop Environment (CDE) on AIX 4.1.2?

Add the extensions in the `/usr/lpp/X11/defaults/xserverrc` file. For example,

```
EXTENSIONS=-x mbx -x abx -x GLX.
```

—Brad Townley



Brad Townley

My modem supports speeds up to 38400 baud. Even though I set the TTY port for 38400, it always connects at 9600. How do I get it to connect at a faster speed?

Most Hayes®-compatible modems have a register that controls maximum line speed. The general rule of thumb is to set the TTY port to the fastest setting that your modem supports, then make sure that the value in that register is set to correspond to the speed at which you want to make a connection. See the owner's manual for your modem for two items: to locate the specific register number that will need to be set and to determine which register values correspond to which modem speeds.

—Daryl Green



Daryl Green



Viral Shah

I use my RISC System/6000 (RS/6000) as a gateway. Since upgrading from AIX 3.2.5 to 4.1.1, it will not forward packets. How do I fix this?

One of the configurable options in the AIX kernel is `ipforwarding`, which specifies whether the kernel should forward packets. An `ipforwarding` value of 1 forwards packets when they are not for the local system, while a value of 0 prevents forwarding. In AIX 3.2.5, this value was set to 1 by default; in AIX 4.1, it is set to 0 by default. Although you can change this with the command `no -o ipforwarding=1`, you will also need to configure the `/etc/rc.net` file to set this value at boot time. This prevents it from being reset to the default value of 0.

—Daryl Green

Why does pinging a local machine take about 1.5 minutes when it should take only about 1 to 3 milliseconds?

If you have `/etc/resolv.conf` but you are not using domain name server, then delete the file. If you are using domain name server, make sure that the name of domain name server and domain are correct. Also ensure that `/etc/hosts` file does not contain any invalid entries.

—Viral Shah

I am having trouble logging in as a Network Information Service (NIS) user using Desktop login.

APAR IX47158 fixes this problem. You can also use the following workaround.

```
1. cp /etc/rc.boot /etc/rc.boot.orig
```

2. Comment out the DTRUN assignment line in /etc/rc.boot:

```
#DTRUN="/usr/bin/grep " dt:"  
/etc/inittab | /usr/b
```

The next time you boot the machine, the graphical boot sequence will be disabled and <dtlogin> will be started after NIS.

—Viral Shab

When `lslv` is run on a logical volume, the Mirror Write Consistency field is always set to on. Does this mean that mirroring has been enabled even though the number of copies is just 1?

The Mirror Write Consistency field is part of the standard output of the `lslv` command. It defaults to ON, but this has meaning only when the number of copies is greater than 1. When the number of copies is 1, mirroring is not enabled. From a performance standpoint, mirroring is costly; mirroring with Write Verify is even more costly (extra disk rotation per write); and mirroring with both Write Verify and Mirror Write Consistency is the most costly of all (disk rotation plus a seek to Cylinder 0). Although an `lslv` command will usually show Mirror Write Consistency to be on

for non-mirrored logical volumes, no actual processing occurs unless the copies value is greater than 1. Write Verify, on the other hand, defaults to OFF, since it does have meaning (and cost) for non-mirrored logical volumes.

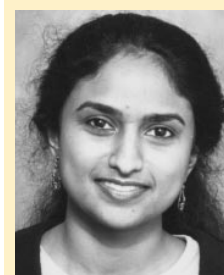
—Priyamvada

Is it acceptable to have paging space of different sizes on several volumes?

All paging logical volumes should be approximately the same size. Paging spaces of different sizes may create problems. As the smaller ones become full, paging activity will no longer be spread evenly across all the physical volumes.

All processes started during the boot process are allocated paging space on the default paging space logical volume. After the additional paging space logical volumes are activated, paging space is allocated in a round-robin manner in 4 KB chunks. If you have paging space on multiple physical volumes and more than one paging space on one physical volume, you will no longer be spreading your paging activity over multiple physical volumes.

—Priyamvada



Priyamvada



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Why are the special “box” characters not appearing on an N40 when I use smitty?

To make graphics characters (in this case, box characters), the font must be an IBM-850 font. Entering `aixterm -fn Rom11` will open a window with the correct font. Look in `/usr/lib/X11/fonts/fonts.dir` for a list of all the available fonts.

—Sai Ramanath



Why is the VPATH variable not being evaluated by make on AIX 3.2.5?

The VPATH usage for targets has been withdrawn from AIX 3.2.5 and later versions. Use `$?` instead of the prerequisite names, which forces `make` to look for them in the current directory.

—Sai Ramanath



Can I use the HeapView Debugger with a threaded program?

You cannot use HeapView Debugger with a threaded program. The HeapView Debugger is statically bound with `libc.a`, so a threaded program will not work as expected. It also does not do any interlocks; therefore, it runs the risk of corrupting its own memory.

—Darshan Patel



I am using the C Set++ compiler. Is there a flag that specifies the architecture on which the executable program will be run? (See POWER Notes in AIXpert, February 1995, page 65 for more information.)

Use the `-qarch=option` flag to specify the architecture on which the executable program will be run. Use the following suboptions to produce an object containing instructions that will run on the specific hardware platform:

- ◆ **-qarch=com**: All the POWER, POWER2, and PowerPC hardware platforms (default)
- ◆ **-qarch=pwr**: Any POWER hardware platform
- ◆ **-qarch=pwr2**: POWER2 hardware platform

◆ **-qarch=pwrx**: POWER2 hardware platform (same as `-qarch=pwr2`)

◆ **-qarch=ppc**: 32-bit PowerPC hardware platform

—Darshan Patel



How can I determine how much space an install requires?

In AIX 4.1 and later, one of the install options is to go through the install without actually installing AIX. This option displays the required space.

—Fred Arnold



How much available space is required in /tmp when installing or creating a mksysb?

The system should have at least 8 MB of available space in `/tmp`.

—Fred Arnold



How can I change the number of processes assigned per user?

Change the number of processes assigned per user (as root) as follows:

1. Enter `<smit/smitty>`.
2. Select System Environments.
3. Select Change/Show Characteristics of Operating System.
4. Select Maximum number of processes allowed per user.

This can also be done from the command line where `n` is a number between 40 and 10,000:

```
chdev -E -l sys0 -a maxuproc=n
```

—Jeff Simon



How can I build shared libraries with C++ code? How do I ensure that the static constructors are called? I am building C shared libs with `ld` and do not know if I need to use XLC or some special `ld` option.

To ensure that the static constructors in a shared file are properly initialized, construct a library



Sai Ramanath



Darshan Patel



Fred Arnold

with shared file information by using `/usr/lpp/xlC/bin/makeC++SharedLib`. This will create a C++ shared library from an export list and a list of object files and ensure that static constructors are properly initialized. The output of this program is a file containing the shared part of the library, constructed so that initialization will be done correctly. This file can then be placed into an archive library using the `ar` command.

The steps to use `makeC++SharedLib` are documented in the *C++ User's Guide*:

- ◆ *C Set++ User's Guide Version 2.1* (SC09-1605, pages 247—251)
- ◆ *XLC++ User's Guide Version 1.1.1* (SC09-1472, pages 144—146)

If there are static constructors or a reference to a shared library with constructors (such as `iostreams`), you must link with XLC for everything to be initialized correctly. Linking with XLC automatically brings the necessary configuration and library files needed (that is, much,

`/usr/lpp/xlC/lib/crt0.o`, and `/usr/lpp/xlC/lib/gcrt0.o`). To see which flags are automatically brought in by XLC, look at `/etc/xlC.cfg`.

—Jeff Simon



How can I change the logo for CDE in AIX 4.1.2?

Set the `Dtlogin*logo*bitmapFile` in the `/usr/dt/config/C/Xresources` file to `Dtlogin*logo*bitmapFile: /usr/local/dt/bitmaps/Mylogo.bm`. This can be a bitmap or pixmap.

—Brad Townley



Jeff Simon

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Open Software Foundation Certifies AIX/DCE

The Open Software Foundation (OSF) named IBM's AIX Distributed Computing Environment (AIX/DCE) as the industry's first certified implementation.

The certification process assures customers that any implementation of DCE—a base for open, distributed, client/server computing—fully interoperates with other certified DCE solutions.

"IBM's fundamental goal is open, distributed client/server computing across multiple systems. DCE provides a widely used infrastructure across multiple systems, and OSF certification of IBM's AIX/DCE assures interoperability," said Don Haile, general manager, IBM Networking Software Division.

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