

AIX Questions



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 identify any fixes or updates installed on my AIX 4.1 system?

Enter the following commands as root from the root prompt.

```
/usr/sbin/instfix -ic | sort -Au | awk  
-F: '{printf \  
"%-20s %s\n", $1, $6}' >file  
  
sort -u file >fixesupdates
```

Then edit or vi fixesupdates to determine what was applied.

—Wade Carlin

Where can I get the latest firmware and System Management Service (SMS) diskette for my PowerPC?

Check the following URL for the latest firmware:

<http://www.rs6000.ibm.com/support/micro/download.html>

—Wade Carlin

How can I recover from a corrupted hd8 logfile?

To correct a corrupted Journaled File System (JFS) log logical volume, use the logform command to reformat it. The syntax for the command running as root is as follows:

```
/usr/sbin/logform /dev/hd8
```

Answer “yes” when asked if you want to destroy the log.

—Wade Carlin

How do I build shared libraries with C++ code? How can I ensure that static constructors are called? I am building C shared libraries with ld; do I need to use x1C or some special ld option?

To ensure that the static constructors in a shared file are properly initialized, you must construct a library with shared file information in a special way. To do this, use `usr/lpp/x1C/bin/makeC++SharedLib`, which creates a C++ shared library from an export list and a list of object files, and also properly initializes the static constructors. This program outputs a file containing the shared part of the library, which is constructed to handle initialization correctly. Then use the `ar` command to place the file into an archive library.

The C++ User's Guide documents the steps to make a C++ shared library. If there are static constructors or a reference to a shared library with constructors (such as



Wade Carlin



Jeff Simon

iostreams), you must link with `x1C` to initialize everything correctly. Linking with `x1C` automatically brings the necessary configuration and library files needed (that is, `munch`, `/usr/lpp/x1C/lib/crt0.o`, `/usr/lpp/x1C/lib/gcrt0.o`). Be sure to look at `/etc/x1C.cfg`, which will automatically bring in these files.

—Jeff Simon

What rules govern whether source code is compiled for C or C++?

The following rules can differentiate whether the C or C++ compiler is used:

1. All files with the suffix `.c` (lower case c) are assumed to be C files unless rule 3 applies.
2. All files with the suffix `.C` (upper case C) or suffix `.cpp` are assumed to be C++ sources.
3. Option `-+` indicates that all files, regardless of the suffix, are assumed to be C++ sources.

—Jeff Simon

What is a zombie process?

A zombie process occupies a slot in the process table, but has no other space allocated to it in either user or kernel space. The process table slot that it occupies is partially overlaid with time-accounting information to be used by the `times` subroutine. (See the `sys/proc.h` file.)

A process remains a zombie until its parent issues one of the `wait` subroutines. At this time, the zombie is laid to rest (deleted) and its process table entry is released. If the child is killed but the parent is not notified of this event, then the child will remain in a zombie state indefinitely until the parent exits, at which time it will be inherited by the `init` process that has a `pid` of 1.

—Jeff Simon

How can I turn off keyboard clicking?

There are three ways to approach this problem:

1. From CDE, open the Style Manager, select Keyboard, then turn off the keyboard volume.
2. From System Management Interface Tool (SMIT), start SMIT with `smitty chgkdb` and turn off the keyboard volume.
3. From the command line, type `xset -c`.

—Gordon Thagard



Gordon Thagard

How can I install Base AIX on a PowerPC from a CD-ROM?

Follow these steps:

1. Insert the CD-ROM.
2. Reboot the machine.
3. After the boot sequence, press the PF1 key to enter System Management Services.
4. Insert the SMS diskette, if necessary.
5. Go to the Startup menu and make the CD-ROM drive the first boot device.
6. Exit from SMS and continue booting from the CD.
7. Setup the Install environment according to preferences `<console/language>`.
8. At the Installation & Settings screen, choose option 1 to define install preferences.
9. Choose Preferred Install Type and add any hdisks not in the install list (at the user's discretion).
10. Choose option 0 when done. AIX will now install from CD 1. After AIX installs, the system administrator

must decide which additional Licensed Program Products (LPPs), if any, will be installed.

—Gordon Thagard

How can I make an SLHS application run on AIX 4.1.5 or 4.2?

An executable Shared Library Hookable Symbol (SLHS) application written on AIX 4.0 through 4.1.4 must be changed slightly to run on AIX 4.1.5 or 4.2 as follows:

- ◆ To run SLHS application on AIX 4.1.5, install PTF U447112. U447112 updates `bos.rte.libc` to 4.1.5.5 corresponds to SLHS RTE 1.1.6.7.
- ◆ To run SLHS application on AIX 4.2.0, install PTF U446665. U446665 updates `bos.rte.libc` to 4.2.0.8 corresponds to SLHS RTE 1.1.6.7.
- ◆ If you want to rebuild (compile and link) a complete SLHS application written in AIX 4.0 through AIX 4.1.4 to run on AIX 4.1.5 and 4.2., then you should be aware of the following:

Since SLHS is not supported on AIX 4.2, you must use the native runtime linking and dynamic loading library on AIX 4.2. In general, the `sv` compiler

will become the normal flavor (for example, `xlc`), and `svld` becomes `ld`. The `ld` option `-G` will build modules that require runtime linking, and the `-brtl` option will build main applications that use these modules. The library option `-ldl` must also be added to resolve calls to `dlopen()`.

—Hung Dinh



Hung Dinh

How can I determine if an archive file (.a) is a shared library?

AIX archive files can contain both shared and non-shared objects. An archive is considered shared if it has at least one shared object. Using the `dump` command, you can determine whether an archive file contains shared objects.

Issuing `dump -vT mylib.a` results in the following message if no shared objects are in the archive:

```
Loader section is not available
```

—David Carew



David Carew

Compiled by **Wade Carlin and Jeff Simon**, IBM Corporation, 11400 Burnet Road, Austin, TX 78758.