

AMX/FSTM

File System

TOOL GUIDE

First Printing: July 1, 1995
Last Printing: November 1, 2007

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1. Supported Toolsets

AMX/FS™ was initially developed on a PC with MS-DOS® v6.22. It is currently supported on a PC with Windows® using the software development tools listed below. Check the currently supported toolset versions in the relevant chapter of the AMX Tool Guide. If you are not using one of these toolsets, you may have to rebuild the AMX/FS library in order to use your out-of-date or updated tools.

AMX 68000

- Diab-SDS, Inc. compiler and assembler
- Mentor Graphics' Microtec Division compiler and assembler
- Metrowerks, Inc. compiler and assembler
- TASKING, Inc. (formerly Intermetrics) compiler and assembler

AMX CFire

- Diab-SDS, Inc. compiler and assembler
- Metrowerks, Inc. compiler and assembler

AMX PPC32

- Diab-SDS, Inc. compiler and assembler
- MetaWare Incorporated High C/C++ compiler and assembler
- Metrowerks, Inc. compiler and assembler

AMX 4-ARM and AMX 4-Thumb

- ARM Ltd. compiler and assembler
- IAR Systems AB compiler and assembler
- MetaWare Incorporated High C/C++ compiler and assembler
- Metrowerks, Inc. compiler and assembler

AMX MA32

- MetaWare Incorporated High C/C++ compiler and assembler

AMX 386/ET

- Paradigm Systems, Inc. C++ compiler and assembler

2. Filename Conventions

AMX and AMX/FS files are identified by their 3-digit KADAK part number. Each part number uniquely identifies the target processor(s) on which a specific version of AMX or AMX/FS will operate. For example, the AMX/FS 68000 Library module is named *FJ538.LIB*.

Since this AMX/FS Tool Guide describes the use of AMX/FS on several target processors, the explicit 3-digit KADAK part numbers cannot be used. Therefore, AMX and AMX/FS part numbers are replaced by the strings *mmm* and *nnn* respectively. For example, the AMX 68000 installation subdirectory *AMX532* is referred to as *AMXmmm* and the AMX/FS 68000 Library module *FJ538.LIB* is referred to as file *FJnnn.LIB*.

The following table summarizes the AMX and AMX/FS part numbers to which this AMX/FS Tool Guide applies.

Product	AMX Part Number	AMX/FS Part Number
	<i>mmm</i>	<i>nnn</i>
AMX PPC32	382	388
AMX 4-ARM	402	408
AMX 4-Thumb	422	428
AMX MA32	442	448
AMX CFire	512	518
AMX 68000	532	538
AMX 386/ET	722	728

When AMX and AMX/FS are installed, generic header files *CJZZZ.H*, *FJZZZ.H* and *FJZZZINC.H* are created from their part numbered counterparts. For example, if you install AMX/FS 68000, the generic file *FJZZZ.H* will be a copy of file *FJ538.H*. By referencing the generic header file in your application C source file, the appropriate target-dependent, part numbered AMX and AMX/FS header files are automatically included.

3. Application Construction

Environment Variables

You must set the Windows environment variables listed in your AMX Tool Guide. There are no additional environment variables required to provide access to the AMX/FS header files, object files and libraries.

Compiling the FS Configuration Module

To compile the FS Configuration Module, you must have access in the current directory to ALL of the AMX/FS and AMX header files delivered with AMX/FS and AMX, including the AMX/FS file *FJZZZINC.H* and the AMX file *CJZZZ.H*. The compilation process is then as for any other application module as described in the AMX Tool Guide.

Compiling Application Modules

To compile any application module which references AMX/FS, you must have access in the current directory to the AMX/FS header files *FJZZZ.H* and *FJnnnKF.H* and to ALL of the AMX header files delivered with AMX, including the file *CJZZZ.H*. The compilation process is then as described in the AMX Tool Guide.

Preparing the AMX/FS Floppy and IDE Driver

To use either the AMX/FS Floppy or IDE Driver, you must first assemble the AMX/FS board support module *FJnnnBRD.ASM*. Follow the directions in the AMX Tool Guide for assembling the AMX Target Configuration Module.

To use the AMX/FS Floppy Driver, you must first compile the following Floppy Driver C source files: *FJnnnFLP.C*, *FJnnnFLB.C* and *FJnnnFLC.C*. Follow the directions given for compiling the FS Configuration Module.

To use the AMX/FS IDE Driver, you must first compile the following IDE Driver C source files: *FJnnnIDE.C* and *FJnnnIDB.C*. Follow the directions given for compiling the FS Configuration Module. You must also assemble the IDE Driver assembler source file *FJnnnIDA.ASM*. Follow the directions in the AMX Tool Guide for assembling the AMX Target Configuration Module.

Linking for AMX/FS Use

To use AMX/FS, your Link Specification File must include a properly ordered list of AMX object and library modules as specified in the AMX Tool Guide. To this list, add the AMX/FS Library *FJnnn.LIB* following all object modules but prior to any AMX Libraries.

If you are using the AMX/FS Floppy or IDE Drivers, you must add to your Link Specification File all of the object modules which you compiled and assembled during the driver preparation process. Include these object modules prior to the AMX/FS Library module *FJnnn.LIB*.

AMX/FS is provided in library form, ready to link with your AMX application. Simply copy the AMX/FS Library file *FJnnn.LIB* into your link directory. Your AMX/FS system is ready to be linked in the manner described in the AMX Tool Guide.

The AMX/FS RAM Disk driver is provided in the AMX/FS Library *FJnnn.LIB*. There are no separate object modules required.

Note

Toolset dependent filename extensions *ASM*, *OBJ* and *LIB* may appear as *S*, *O* or *A* respectively.

4. Making the AMX/FS Library

The AMX/FS File System Library is delivered prebuilt, thoroughly exercised and ready for use with the toolsets supported by KADAK. There should be no need to remake the AMX/FS Library although some developers do so just to confirm that they can. Obviously, if you have altered the AMX/FS source code, you will have to rebuild the AMX/FS Library. In some cases, you may be using an out-of-date toolset which requires a rebuild of AMX/FS for backwards compatibility.

If you rebuild AMX/FS with a new set of tools that has not yet been tested by KADAK, it is possible that you will encounter toolset warnings or errors. For example, the tool vendor may have changed the syntax for some assembly language directives or revised the definition of its archive or link or locate specification files. In the worst case, the vendor may have introduced a code generation fault which produces an invalid code sequence within some AMX/FS module. If you suspect such a fault, revert to the AMX/FS Library shipped with AMX and report the problem to KADAK's technical support staff.

Let *xx* be the toolset id for the toolset combination for which you wish to remake AMX/FS. A list of supported toolset ids is provided in your AMX Tool Guide.

It is assumed that AMX has been installed into directory `... \AMXmmm` ready for use with toolset *xx*.

It is assumed that AMX/FS has been installed into directory `... \AFSnnn` ready for use with toolset *xx*.

Before constructing the AMX/FS Library, you must first set several Windows environment variables which are needed to build AMX/FS. These environment variables are described in Appendix D.1 of the AMX User's Guide. They are listed in the header of toolset dependent batch file `ENmmmXX.BAT` in AMX directory `... \AMXmmm\MAKE`. Be sure to build your AMX/FS Library with the same endian characteristics as your AMX Library.

To construct the AMX/FS Library, you must first open a Windows Command Prompt window. From the Windows Start, Run... menu, type `cmd` and press Enter. Alternatively, select Command Prompt from the Windows Start menu or any of its sub-menus.

To begin, make AMX directory `... \AMXmmm\MAKE` the current directory and run toolset dependent batch file `ENmmmXX.BAT` in that directory. You must do this to specify the version number of the toolset *xx* tools that you are using to rebuild AMX/FS. In most cases, the version number for the C/C++ compiler is used to indicate the toolset version.

In the following example, the toolset version number is given the name `toolver` for illustration purposes. Use the value which corresponds to the version of the tools which you are using. Allowable values are documented in the header of the toolset dependent batch file `ENmmmXX.BAT`.

```
... \AMXmmm\MAKE>ENmmmXX toolver
```

There are two toolset dependent files which are used to build the AMX/FS Library.

Within AMX/FS directory `...\AFSnnn\MAKE` you will find file `FJnnnXX.MAK`, the make specification file which will be used by your `MAKE` utility to build the library. This file purposely avoids constructs and directives that tend to vary among make utilities. You may have to edit this file to meet the requirements of your particular make utility.

Within AMX directory `...\AMXmmm\MAKE` you will find file `CJmmmXX.BAT`, the batch file used by the make specification file to run the command line tools for toolset `XX`.

To build AMX/FS, you will need a make utility such as Microsoft `NMAKE.EXE`. Your Windows `PATH` environment variable must provide access to this utility. Before starting the make process, delete all header files (`*.DEF` and `*.H`), if any, which previous builds may have left in directory `...\AFSnnn\MAKE`. Then issue the following command. Replace the `"C:\KADAK"` in the command with your AMX `drive:path` specification.

```
! Make AMX/FS using Microsoft NMAKE
...>NMAKE -fFJnnnXX.MAK "TOOLSET=XX" "CJPATH=C:\KADAK\AMXmmm"
```

When the make is complete, directory `..\TOOLXX\LIB` will contain your updated AMX/FS Library and object modules.

Directory `..\ERR` will contain zero or more text files which summarize the error messages, if any, produced during the make process.

Note that if you add the Microsoft `/N` switch immediately following the `NMAKE` directive on the command line, the make utility will list the make operations on the screen but will not actually do the make. This can be helpful in locating path problems if you have not properly installed AMX or AMX/FS or have not provided correct Windows environment variables.