

EtherController-MB Software Release Document

Software Release 2.0

Part No. 009743

Revision 00

This document describes the software for EtherController-MB, a controller that allows MULTIBUS workstations to communicate over an ETHERNET network. It describes how to install the product software, the documentation needed to use the product, and any limitations, known bugs and bug fixes that apply to the product.

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```

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CHAPTER 1

OVERVIEW OF THE ETHERCONTROLLER-MB VERSION 2.0

1.1 Product Description

The EtherController-MB software contains the driver and diagnostics for the EtherController-MB controller. EtherController-MB is an Ethernet Version 1.0, Version 2.0, and IEEE 802.3 standard communications controller for MULTIBUS systems. The controller is connected to an external transceiver and standard ETHERNET backbone cabling.

The SFW EtherController-MB software contains the following directories and files:

- o /doc/ethercontrol_mb_release_notes -- on-line documentation
- o /sys/drivers/ecmb/ether.lib -- the driver call library
- o /sys/drivers/ecmb/ether_int.lib -- the driver interrupt library
- o /sys/drivers/ecmb/build_ddf.sh -- a Shell script for building a device driver descriptor file.
- o /systest/ether1_diag -- the on-line diagnostic

EtherController-MB currently supports the TCP/IP and EtherBridge communications products software. Contact your sales or service representative for the latest information about the layered software that can use this controller.

1.2 Software Version Compatibilities

EtherController-MB software requires SR9.5 or later. The workstation can be used as a gateway with TCP/IP Version 3.0 or later software. Alternately, the workstation can be used as a DOMAIN internet bridge, with EtherBridge 1.4 or later software.

CHAPTER 2
INSTALLATION PROCEDURE

This chapter describes how to install the EtherController-MB Software Version 2.0. You can add this software on MULTIBUS workstations equipped with an EtherController-MB. The MULTIBUS workstation must be running SR9.5 or a more recent version of the AEGIS or DOMAIN/IX operating system in order to use this controller in the workstation. If the system is not running SR9.5 or a more recent version, follow the appropriate software update procedures as described in Installing DOMAIN Software (Order No. 008860) or in the appropriate release notes.

NOTE: Systems must have a minimum of 70 blocks of available disk space for a successful installation of this software.

2.1 Conventions and Terminology

Before you start, make sure you understand these terms and conventions:

Work Node The user node at which you perform the installation procedure.

Target The directory into which you're installing software. The target can be a node entry directory (for example, //target) or any subdirectory (for example, //target/product). If the target is on a user node, then the work node and the user node can be the same node.

NOTE: When you are installing software to update a diskless node, the target is the node entry directory of the partner node.

Secure network A network that uses a registry of user accounts and access control lists (ACLs) to control log-in privileges and access to files and directories. Note that an open network does not use a registry or ACLs.

Source area An on-line master area of DOMAIN software. An administrator installs software from the distribution media into the source area and users install software from the source area over the network. The source area can be a node's entry directory or any subdirectory.

Source media The media (floppy disks, magnetic tape, cartridge tape, or another node in the network) that contains the software.

< > Angle brackets (< >) enclose the name of a key on the keyboard.

2.2 Planning the Installation

There is one installation procedure. You can use the procedure in one of three modes: ADMINISTRATIVE mode, USER mode, or SPECIAL-CASE mode.

ADMINISTRATIVE mode creates a source area by copying the INSTALL program and the new software from the distribution media to the target. You use the administrative mode when no source area for this release exists in the network. See Section 2.3 for more information about administrative-mode installations.

USER mode involves copying your new software from a source area onto another node in the network; it's the simplest and most commonly used mode. You can install in user mode only AFTER an administrative-mode installation has initialized the source area with the INIT_SOURCE program.

Two default conditions apply to a user-mode installation. The defaults are:

- o The INSTALL program automatically copies the new software over the network from the initialized source area, instead of asking you to specify the source area.
- o The INSTALL program uses the SID "user.sys_admin" during the installation, rather than your own login SID.

To install in user mode, get the source area's pathname from your system administrator, then go on to Section 2.4.2.

SPECIAL-CASE mode involves special cases in which you need to override the user-mode defaults. The special cases are:

- o You want to install software from an initialized source area on the network, but your own login SID gives you more rights to a target's protected directories than the default SID "user.sys_admin"
- o You want to install software from a source other than an initialized source area (for example, source media)

- o You want to install additional software in a source area that was initialized during a previous administrative-mode installation

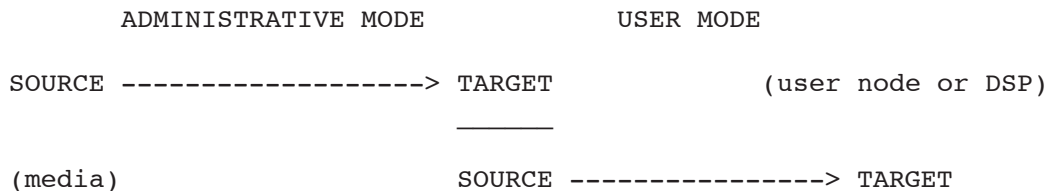
The installation procedure enters special-case mode when you invoke the INSTALL program with its `-my_sid` option. Specifying this option overrides the user-mode defaults, which means that the INSTALL program (1) uses your own login SID instead of "user.sys_admin" and (2) prompts for source media rather than automatically copying the software over the network from an initialized source area. In all other respects, special-case mode behaves like one of the other two modes of installation (your choice of source determines which one).

If you want to install software from an initialized source area on the network while using your own login SID, follow the directions for user-mode installations in Section 2.4.2. These directions include provisions for installing software in special-case mode.

If you want to install software from a source other than an initialized source area, or you want to install additional software in a previously initialized source area, follow the directions for an administrative-mode installation in Section 2.4.1. These directions also include provisions for installing software in special-case mode.

2.3 More Information About Administrative-mode Installations

The target of an administrative-mode installation generally serves as the source for subsequent user-mode installations (the administrative-mode target pathname is therefore the same as the user-mode source pathname). User-mode installations use both the INSTALL program and the software stored in the source area.



Your choice of target for an administrative-mode installation depends on whether you want the target node to RUN the software as well as act as a SOURCE for the software. If you also want the node to run the software, make the target the node's entry directory (for example, //node). If you just want the node to contain the software, you should make the target a subdirectory (for example, //node/product/source_area). In either case, users should then use the target of your administrative-mode installation as their source area.

You can install different optional software products into the same source area or into separate source areas. Whichever route you take, you can then selectively install optional products on user nodes or DSPs from the source area(s).

If you have a secure network, you must have system administrator rights to install in administrative mode. Also, during the procedure you must initialize the source area by running the INIT_SOURCE program. This program marks the installation program in the source area with special privileges for subsequent user-mode installations, such as use of the SID "user.sys_admin" during installation. The INSTALL program can then install software in protected system directories, even though the user running the program does not have rights to modify these directories. In open networks, you create a source area but you don't run INIT_SOURCE, since all users have rights to modify their system directories.

2.4 Installation Procedures

The following sections describe the administrative mode and the user mode of installation. To install software in special-case mode, consult Section 2.2 to determine which set of instructions you should follow.

2.4.1 Administrative Mode

NOTE: You can enter "q" or "quit" at any prompt in the INSTALL program to abort the installation and return to the Shell.

1. If you intend to create a source area for future installations, log on to a work node using a system administrator account (for example, my_name.sys_admin.%.%). Otherwise, log on using your own account (for example, my_name.%.%.%).
2. Set your working directory to the installation target. This target will become the source area for user installations. It can be a node entry directory (like //node) or it can be any subdirectory created prior to the installation (like //node/product/source_area). For example:

```
wd //node (AEGIS Shell)
```

or

```
cd //node (DOMAIN/IX Shell)
```

3. Insert the source media into the drive and enter the RBAK command shown below. If you are using a tape cartridge, use the CT option shown in the example. If you are using a magnetic tape, use the M0 (Mzero) option. If you are using a floppy disk, use the F0 (Fzero) option.

NOTE: If you are using multiple floppy disks, insert the floppy disk with the numeral 1 at the end of its label (for example, "FLP8_product_n.n_1").

All of the RBAK commands shown below create an INSTALL directory on the target and write the installation software to the directory. When entering the RBAK command, use lower-case characters to ensure visibility of the install directory in case-sensitive environments. Note that you can leave the source media in the drive for use in a later step: if you remove the source media after executing the RBAK command, the INSTALL program will later prompt you to re-insert the media.

```
RBAK -DEV CT -F 1 install -AS install -L -MS -FORCE -SACL -DU
```

```
RBAK -DEV M0 -F 1 install -AS install -L -MS -FORCE -SACL -DU
```

```
RBAK -DEV F0 -F 1 install -AS install -L -MS -FORCE -SACL -DU
```

4. Set your working directory to the INSTALL directory on the target. For example:

```
wd //node/install (AEGIS Shell)
```

or

```
cd //node/install (DOMAIN/IX Shell)
```

5. Execute the INSTALL program and follow the prompts. If you are installing software in special-case mode, use the `-my_sid` option.

For ADMINISTRATIVE MODE, type:

```
install
```

For SPECIAL-CASE MODE, type:

```
install -my_sid
```

6. The program may prompt you to enter an installation type, based on what products already exist in the source area. If it does, answer OPT and proceed. For example:

```
*****  
* SOFTWARE INSTALLATION -- Version n.n *  
*****
```

Software installation TYPES are:

```
STD      --   Install standard software  
RESTART  --   Restart the software installation  
ACL      --   Set ACLs for existing software  
CLEANUP  --   Run the Cleanup Procedure for ADD MODE installations  
OPT      --   Install optional software (e.g., Pascal, FORTRAN)
```

Please enter installation TYPE: OPT

7. When the program displays the names of one or more optional products, enter the name of the optional product that you want to install. For example, to install EtherController-MB software you would type "ecmb", as shown in the sample menu below.

Name	Description	Disk Blocks Needed (Adding New Software)
ecmb	SFW_EtherController-MB	70
OTHER	If the optional product that you would like to install is not listed above, choose OTHER. *Note: When you choose OTHER, you are asked a few questions then shown a display of Apollo's optional products. Check with your system administrator to determine which products your site has purchased and in which directory these products have been installed.	

Enter the name of a single product you would like to install: ecmb

8. When prompted for the name of the target, enter the appropriate pathname (that is, the node entry directory or subdirectory that you specified in Step 2). For example:

The TARGET is the node or subdirectory on which you are installing software. (e.g., '//my_node' or '//my_node/subdirectory')
Enter Target: //node

9. The INSTALL program prompts for the source media. Enter your choice.

```
Source MEDIA is one of:
  CTAPE  -- Cartridge Tape
  MTAPE  -- Magnetic Tape
  FLOPPY -- 8" or 5 1/4" Floppies
  NET    -- An area on the network with valid Software
Enter Source Media:
```

10. The INSTALL program may ask you to insert the media into the drive. Insert the media and press <RETURN>.
11. The INSTALL program installs the software, listing each file it copies from the source media. Since the software resides on multiple floppy disks, the program prompts you to mount (that is, insert) the next disk and to press <RETURN> to continue.

When the INSTALL program finishes installing the software, it displays the following menu:

Options:

```
RERUN  -- There were errors in the transcript
        pad and you wish to rerun the installation.

FINISH -- The installation ran to completion error free.
        There is no additional optional software you
        wish to install.

CONTINUE -- Install additional optional software.
```

If you encountered any errors during the installation, correct the problem(s) and select RERUN. To locate error messages issued during installation, search backwards for the characters @? (an at sign followed by a question mark) in the installation's transcript pad.

If there were no errors, choose CONTINUE or FINISH. Selecting CONTINUE brings you back to the beginning of the INSTALL program; selecting FINISH terminates the program. If you were installing software from magnetic tape, cartridge tape, or floppy disks, you can now remove the media from the drive.

12. If you have a secure network and you want the target of your installation to be used as a source area for future installations, run the INIT_SOURCE program (also run the program if you are adding software to a previously initialized source area). You must be logged in as a system administrator to perform this step.

Invoke INIT_SOURCE at the Shell prompt. When prompted, enter the pathname of the new source area (which is currently the target of your administrative-mode installation). Here is an example:

```
init source
```

```
Please enter the name of the SOURCE AREA
for your network (e.g., '//NODE/SOURCE AREA'):
//node
```

```
The source area for your network
has been set to: //node
```

This is the end of the administrative-mode installation procedure.

2.4.2 User Mode

NOTE: You can enter "q" or "quit" at any prompt in the INSTALL program to abort the installation and return to the Shell.

1. Log on to a work node using your own account (for example, my_name.%.%.%).
2. Set your working directory to the INSTALL directory in the source area (if necessary, ask your system administrator for the pathname). For example:

```
wd //node/install      (AEGIS Shell)
```

or

```
cd //node/install      (DOMAIN/IX Shell)
```

3. Execute the INSTALL program and follow the prompts. If you are installing software in special-case mode, use the -my_sid option.

For USER MODE, type:

```
install
```

For SPECIAL-CASE MODE, type:

```
install -my_sid
```

4. The program may prompt you to enter an installation type, based on what products already exist in the source area. If it does, answer OPT and proceed. For example:

```
*****  
* SOFTWARE INSTALLATION -- Version n.n *  
*****
```

Software installation TYPES are:

```
STD      --   Install standard software  
RESTART  --   Restart the software installation  
ACL      --   Set ACLs for existing software  
CLEANUP  --   Run the Cleanup Procedure for ADD MODE installations  
OPT      --   Install optional software (e.g., Pascal, FORTRAN)
```

Please enter installation TYPE: OPT

5. When the program displays the names of one or more optional products, enter the name of the optional product that you want to install. For example, to install EtherController-MB software you would type "ecmb", as shown in the sample menu below.

Name	Description	Disk Blocks Needed (Adding New Software)
ecmb	SFW_EtherController-MB	70
OTHER	If the optional product that you would like to install is not listed above, choose OTHER. *Note: When you choose OTHER, you are asked a few questions then shown a display of Apollo's optional products. Check with your system administrator to determine which products your site has purchased and in which directory these products have been installed.	

Enter the name of a single product you would like to install: ecmb

6. When prompted for the name of the target, enter the appropriate pathname (that is, a node entry directory or subdirectory). For example:

The TARGET is the node or subdirectory on which you are installing software. (e.g., '//my_node' or '//my_node/subdirectory')
Enter Target: //node

7. The INSTALL program may prompt for the source media. If so, enter NET.

Source MEDIA is one of:

CTAPE -- Cartridge Tape

MTAPE -- Magnetic Tape

FLOPPY -- 8" or 5 1/4" Floppies

NET -- An area on the network with valid Software

Enter Source Media: net

8. The INSTALL program may prompt for the source area. If so, enter the pathname (if you don't know it, ask your system administrator). For example:

The SOURCE AREA is the node or subdirectory from which you are copying software. (e.g., '//node' or '//node/subdirectory')

Enter Source Area: //node

9. The INSTALL program installs the software, listing the name of each file it copies from the source area. Upon completion, the INSTALL program displays the following menu:

Options:

Options:

RERUN -- There were errors in the transcript pad and you wish to rerun the installation.

FINISH -- The installation ran to completion error free. There is no additional optional software you wish to install.

CONTINUE -- Install additional optional software.

If you encountered any errors during the installation, correct the problem(s) and select RERUN (if necessary, consult your system administrator for assistance). To locate error messages issued during installation, search backwards for the characters @? (an at sign followed by a question mark) in the installation's transcript pad.

If there were no errors, choose CONTINUE or FINISH. Selecting CONTINUE brings you back to the beginning of the INSTALL program; selecting FINISH terminates the program.

This is the end of the user-mode installation procedure.

CHAPTER 3
DOCUMENTATION

The Unpacking and Installing the EtherController-MB manual reflects the latest revisions to the software except where noted.

You install the SFW EtherController-MB as part of the EtherController installation. Refer to the manual for information on how to install the controller.

CHAPTER 4

BUGS AND BUG FIXES

4.1 Known Limitations in Release 2.0

The ether1_diag diagnostic test, which tests the controller's multicast/broadcast across the entire ETHERNET network, may not run properly if there is traffic on the Ethernet and may disrupt service on the Ethernet. Ensure that there is no traffic on the ETHERNET backbone before you start the test. (Check with the system administrator.)

The gateway or router node can support only one EtherController-MB. Note that the AC/DC switch on the controller enables connection to an old cable or transceiver. On some ETHERNET transceivers, you may have to set a jumper to select the 802.3 SQE (heartbeat) function. If you use this type of transceiver with EtherController-MB, follow the manufacturer's instructions to set the jumper for SQE (heartbeat).

4.2 Bugs in Release 2.0

If you run TCP/IP or EtherBridge software in a window, you may see the following message:

```
... -- too many collisions (library/Ethernet driver)
```

This message, which results from a known limitation of the system, is primarily dependent on total system loading. Infrequent displays of this message are not a cause for concern. However, if the output becomes continuous, restart the software that is running in the window.



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