

**MULTIPLEX Host Installation Guide**

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**Version 1.10**

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## Introduction

Multiplex is a networking software product which links one or more personal computers (PCs) to a larger "Host system". This *Multiplex Host Installation Guide* describes how to install the Multiplex software product on the following Host system configurations:

Host System:	Plexus P-series
Media:	cartridge tape
Extract command:	cpio
Supported DBMS:	Unify 3.1 or 3.2

This Guide is intended for use by the Host system administrator. It assumes that you have a basic familiarity with Host system commands and files.

For correct operation, Multiplex software must be installed on the Host system and on each PC. If you will also be assisting PC users with installation of Multiplex on their PCs, consult the *Multiplex PC Installation Guide*.

## Installation Overview

Installing Multiplex on the Host system is a simple, five-step procedure:

- 1: Gather the required information about your Host system and the database management software installed on it.
- 2: Copy the software from the distribution media onto the Host system.
- 3: Run the Multiplex installation script to configure Multiplex for your particular Host system.
- 4: Build a copy of the standard Multiplex demonstration database.
- 5: Clean up by erasing unneeded installation files.

## Step 1: Gather Necessary Information

Before beginning the Host system installation, you will need the following information about your Host system and the database management systems (DBMSs) that it supports:

- 1: Which of the following DBMS brands are installed on the Host system? For each installed DBMS brand, what revision of the DBMS software is installed (e.g. Rev. 3.2). What is the *home directory* where the DBMS software is installed?

DBMS Brand	Installed (y/n)	Revision	Home Directory
Informix-SQL	_____	_____	_____
Ingres	_____	_____	_____
Oracle	_____	N/A	N/A
Unify	_____	_____	_____

- 2: For each installed DBMS brand identified above, compare the revision of the DBMS software installed on your Host system to the supported revision(s) listed on the label on page 2 of these instructions. Make sure the installed revision is one of the supported revisions.
- 3: What is the name of the directory where Multiplex should create its temporary work files? (The default directory is /tmp, which is generally available for temporary file storage on UNIX-based and XENIX-based systems.) \_\_\_\_\_
- 4: If Ingres is installed, is it a full Ingres DBMS system (sometimes identified as "rtingres") or is it the Ingres/CS DBMS system (sometimes identified as "ingrescs")? \_\_\_\_\_
- 5: If Ingres is installed, what is the *database user name* to use when creating the demonstration database? \_\_\_\_\_
- 6: If Oracle is installed, what is the *database user name* and associated *database password* to use when creating the demonstration database? \_\_\_\_\_

## Step 2: Copy Multiplex onto Host System

Follow these steps to copy the Multiplex software from the distribution media onto the Host system disk:

1. Login to the Host system as **root**.
2. Make sure there is enough free disk space to hold the software. Use the **df** command to display the amount of available space (in disk blocks):

```
# df
/user      (/dev/dk1):  5124 blocks   1345 i-nodes
/          (/dev/dk0):  6798 blocks   2193 i-nodes
```

Multiplex requires approximately 200-300 Kbytes (or 400-600 disk blocks at 512 bytes per block) for installation.

3. Create a directory **/usr/mpx**, and make it your current working directory with the **cd** command:

```
# mkdir /usr/mpx
# cd /usr/mpx
```

4. Insert the distribution media into the appropriate drive.
5. Copy the Multiplex files from the distribution media onto the Host system, using the "extract command" shown on the label on page 2 of these instructions.

```
# cpio -iduvB < /dev/rpt/0m
```

The command creates three subdirectories, and copies the appropriate files from the distribution media into each of them:

```
bin      -- Multiplex executables
demo     -- Multiplex demonstration database(s) and files
etc      -- Multiplex installation scripts
```

When copying is complete, remove the distribution media from the drive, and store in a safe place, as your backup copy of the Host Multiplex software.

## Step 3: Install Multiplex

Follow these steps to customize the Multiplex software to your particular Host system, and install it:

1. The Multiplex installation script includes Bourne shell commands. If you are not running the Bourne shell, start it by entering the command:

```
# sh
```

2. While still in the `/usr/mpx` directory, type the following command to run the Multiplex installation script:

```
# ./etc/install
```

3. The installation script will ask you questions about which DBMS brands are installed, what their home directories are, etc. Use the information you gathered in Step 1 to respond to the questions.
4. When the installation script is complete, the following files will be correctly installed on your Host system:

<code>/usr/bin/hostmpx</code>	-- Multiplex startup script
<code>/usr/mpx/bin/hostmpx .</code>	-- a copy of the startup script
<code>/usr/mpx/bin/hostmpx.exe</code>	-- Multiplex server program

## Step 4: Build Demonstration Database(s)

The Host Multiplex software includes scripts and programs which build a standard Multiplex demonstration database for each DBMS brand supported by Multiplex. The demonstration database is described in the *Multiplex User's Manual*, and forms the basis for the Guided Tour and all the Examples in the manual. You should build a demonstration database for each supported DBMS brand on your Host system by repeating the procedure below for each brand.

Follow these steps to build a demonstration database for a particular DBMS brand:

1. While still in the `/usr/mpx` directory, type the command `./etc/mkdemodb` followed by the name of the DBMS brand. For example, type:

```
# ./etc/mkdemodb informix -- to build an Informix-SQL database
# ./etc/mkdemodb ingres  -- to build an Ingres database
# ./etc/mkdemodb oracle  -- to build an Oracle database
# ./etc/mkdemodb unify   -- to build a Unify database
```

2. The `mkdemodb` script prompts for the home directory where the DBMS software is installed. For some DBMS brands, it also prompts for other information (e.g. for a valid database user name and password to build an Oracle database). Respond using the information you gathered in Step 1.

The script displays status messages as it builds the demonstration database. Depending upon the speed and system load of your Host system, it may take several minutes to complete.

3. When the script is complete, a Multiplex demonstration database has been built, as follows:

**Informix-SQL:** a demo Informix-SQL database named `mpxdemo` has been built in the `/usr/mpx/demo` directory.

**Ingres:** a demo Ingres database named `mpxdemo` has been built in the default directory for Ingres databases.

**Oracle:** the four tables in the demo database have been added to the single, system-wide Oracle database (named `oracle`).

**Unify:** a demo Unify database named `unify` has been built in the `/usr/mpx/demo` directory.

## **Step 5: Clean Up**

If you have plenty of disk space on your Host system, you may want to leave the Multiplex installation scripts on your disk. This will allow you to reinstall Multiplex with support for an additional DBMS brand, or to build a demonstration database for a new DBMS brand.

If you want to remove the installation scripts from your disk, follow these steps:

1. While still in the `/usr/mpx` directory, remove all the script files from the `etc` directory with the commands:

```
# cd etc  
# rm *
```

2. Remove the `etc` directory with the commands:

```
# cd ..  
# rmdir etc
```

This completes installation of the Multiplex software on your Host system.

## Appendix A: Installation Notes

The following notes provide additional information which may be used to further customize or tailor Multiplex for non-standard Host system environments:

### 1: Installing Multiplex in an Alternate Directory

The standard installation instructions assume installation of Multiplex in the `/usr/mpx` directory. You may install Multiplex in another directory by changing the commands in Steps 1-3 appropriately. The `install` script automatically determines the current working directory and adjusts the `hostmpx` script so that it can locate the `hostmpx.exe` program.

### 2: Host Spooling Command

Multiplex uses the `SPOOLER` shell variable to determine the correct Host system command to request print spooling for Host files, and for files transferred from the PC for Host printing. The standard `/usr/bin/hostmpx` script includes the line:

```
SPOOLER="lp -c" ; export SPOOLER
```

which invokes the standard UNIX System V spooler and requests spooling of a *copy* of the requested file on the default printer.

To direct spooled output to a different printer, or to use a different spooling subsystem, modify this line in the script accordingly. Note that when Multiplex prints PC files on the Host printer, it creates a *temporary* copy of the file on the Host system, requests spooling of a copy of this temporary file, and then removes the temporary file. Therefore, the spooler command you specify **must** request spooling of a copy of the requested file, rather than the file itself.

### 3: Floating Point Number Precision

Some DBMS brands (e.g. Unify) include information about the precision of stored floating point numbers (i.e. maximum number of digits and number of decimal places) in their data dictionary. Other DBMS brands do not provide this information. For these brands, Multiplex uses the default precision specified by the `FLOATFMT` shell variable. The standard `/usr/bin/hostmpx` script includes the line:

```
FLOATFMT=14.3 ; export FLOATFMT
```

which specifies a default width of 14 total digits, including 3 decimal places. To specify a different default, edit the script. For example, to specify a width of 11 digits with 5 decimal places, change the line to:

```
FLOATFMT=11.5 ; export FLOATFMT
```

## Appendix B: List of Files

This release of Host Multiplex software contains the following files:

<b>./bin/hostmpx.exe</b>	-- Host Multiplex program
<b>./etc/install</b>	-- software installation script
<b>./etc/mkdemodb</b>	-- demo database installation script
<b>./etc/builddb</b>	-- demo database installation program
<b>./etc/control.dat</b>	-- demo database control file
<b>./etc/customer.dat</b>	-- demo database data file
<b>./etc/orders.dat</b>	-- demo database data file
<b>./etc/offices.dat</b>	-- demo database data file
<b>./etc/staff.dat</b>	-- demo database data file
<b>./etc/letter1</b>	-- sample file for File Manager
<b>./etc/letter2</b>	-- sample file for File Manager