



# NetMizer Administration Guide

Release 3.6.0

**UNICOM**  
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# About This Manual

This manual describes NetMizer, an optional PIE/CICS product that optimizes 3270 data streams. It contains chapters that describe the various optimization methods available with NetMizer, how they may be used, and instructions to collect optimization statistics.

## Audience

This book is intended for system administrators responsible for installing and implementing PIE/CICS at their site. Readers are expected to understand CICS and MVS concepts.

## How This Manual is Organized

This manual consists of three chapters and an appendix. Listed below are the titles and a brief description of each chapter and appendix.

- Chapter 1 PIE Network Optimization  
Explains NetMizer optimization methods and how they operate within a PIE/CICS environment.
- Chapter 2 Customization  
Describes customization procedures to implement NetMizer after it has been installed.
- Chapter 3 Operations  
Describes how to change NetMizer run-time optimization and how to run the Statistics Utility.
- Appendix A Customer Service  
Describes procedures to report problems with PIE/CICS to UNICOM Systems, Inc. Customer Service.

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## Recommended Reading

The title and a brief description of all PIE/CICS manuals are shown in the following lists. Some manuals provide common information that applies to both the common and optional components of PIE/CICS. Other manuals pertain only to optional PIE/CICS components. These manuals need to be read only if these products are part of the PIE/CICS system installed at your site.

### Common Manuals

These manuals provide common information that applies to both the shared and optional components of the PIE/CICS family.

- *PIE/CICS Installation Guide*  
Includes a series of procedures to install PIE/CICS.
- *PIE/CICS Release Notes*  
Describes new features or enhancements to PIE/CICS that are part of Release 3.6.0
- *PIE/CICS Command Reference*  
Describes PIE/CICS Application and Environment commands.
- *PIE/CICS Customization Guide*  
Describes common procedures to adapt PIE/CICS to your site's requirements.
- *PIE/CICS Operation and Administration Guide*  
Describes common features or facilities that are available to all PIE/CICS products. Performance tuning techniques and implementing security also are described.
- *REXX for PIE/CICS User Guide*  
Describes how to write, compile, and execute SAA-compliant REXX programs that operate within a PIE/CICS external environment.
- *PIE/CICS Custom Menus Administration Guide*  
Describes how to create custom MultiCICS and Dynamic Menu screens that provide alternate language support.

## Optional Manuals

These manuals describe optional PIE/CICS components.

- *PIE/CICS MultiCICS Administration Guide*  
Provides customization procedures and usage information to support multiple PIE/CICS sessions with MultiCICS.
- *PIE/CICS Dynamic Menus Administration Guide*  
Describes how to create custom PIE/CICS menus that provide extended security and enhanced transaction processing.
- *PIE/CICS NetGate Administration Guide*  
Explains how to access multiple VTAM applications through a PIE/CICS session with NetGate.
- *PIE/CICS NetMizer Administration Guide*  
Describes how to use NetMizer to optimize 3270-based data streams.
- *PIE/CICS Availability Plus Administration Guide*  
Explains how to use Availability Plus to distribute and balance work across multiple CICS regions.
- *PIE/CICS NonStop CICS Administration Guide*  
Describes how to use NonStop CICS to route work across CICS regions to balance the workload and minimize down time in the event of a region failure.

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## Syntax Conventions

A syntax diagram is part of the description of each PIE/CICS command included in this manual. A diagram shows the possible parameters, values, and variables associated with a command.

Syntax diagrams adhere to common conventions. The physical appearance of a diagram's elements indicates whether a command parameter, variable, or other values are required, optional, or included by default.

- An underlined parameter is the default assigned to the command.
- Command names are presented in MIXed case. The uppercase portion of a command name is the requisite abbreviated form. Lowercase letters represent the optional remainder of the command name that need not be specified to execute the command.
- An *italicized lowercase* parameter represents a value assigned by the user.
- A vertical bar ( | ) separates two or more mutually exclusive parameter values. Only one value can be specified for each parameter.
- Parameters enclosed within brackets [ ] are optional. Only one value can be specified to a parameter.
- Parameters values enclosed within braces { } are required. If unspecified, the parameter default is assigned to the command.



---

# Chapter 1 PIE Network Optimization

NetMizer reduces the size of 3270 data streams before they are sent across a network. NetMizer uses a combination of data compression techniques and optimization methods to reduce the overall volume of network traffic. As a result, network congestion is reduced and the average transaction response time improves at most sites with less inherent delay.

NetMizer uses a combination of compression and optimization algorithms. Compressed data streams can be as much as 60% to 95% smaller than their original size. NetMizer also uses a variety of optimization methods that reduce the number of data streams required to sustain current screen images on user terminals.

You can specify any of the following optimization methods to compress data streams:

- Repetitive character optimization
- Imaging optimization
- Semantic imaging
- Inbound suppression optimization

Each of these optimization techniques are described separately in the following sections of this chapter.

You can set NetMizer's optimization methods at different levels within PIE/CICS. This chapter includes sections that describe how to set NetMizer optimization by the following methods:

- Default for all terminals
- Default for individual terminals or terminal groups
- Specific optimization for applications executed from a session or menu
- Specific optimization for an application executed at a command line or blank screen
- Specific optimization for specific data streams

## Optimization Methods

This section describes each NetMizer optimization method to compress data streams.

### Repetitive Character Optimization

A typical 3270 data stream is composed of commands, orders, and data. Commands dictate the operation to be performed with data such as ERASE WRITE, WRITE, READ, or READ BUFFER. Orders specify the format of the data as it appears on a screen. For example, the Set Buffer Address (SBA) order tells the terminal to display the subsequent data at the location specified by the SBA order. Data, of course, is the information displayed on a screen.

NetMizer detects any characters within the data stream that repeat more than four consecutive times. All repetitive strings are replaced by a four byte Repeat to Address (RA) order. This is a standard 3270 order and is supported by all 3270 devices. Any valid data character, including null and space, can be repeated.

Depending upon the type of screen being displayed, repetitive character optimization alone can compress the volume of data streams by as much as 10-30%.

### Imaging Optimization

With imaging optimization, NetMizer maintains an image map of the current screen and compares it to pending information that will be displayed on the screen. NetMizer computes the difference between the current and pending screen. It sends only the data required to construct the pending screen from the current screen.

In most cases, the terminal ERASE WRITE command sequence is no longer required. Only a WRITE command is needed, which reduces the amount of screen flickering that occurs when a screen is updated.

### Semantic Imaging

A variation of imaging optimization is called Semantic Imaging. This compression method regards uppercase and lowercase characters as the same when comparing outbound data stream against the current screen image. This further reduces the size of an outbound data stream without affecting the meaning of data displayed on the screen. Hence, the term semantic imaging. Depending on screen content, this technique can reduce the size of data streams by as much as 20-30%.

## Inbound Suppression Optimization

Formatted screens send only modified fields from the terminal to an application. A modified field is indicated by two methods:

- User changes the field at the terminal
- Application marks the field as modified

Applications mark modified fields to ensure they are returned from the terminal, whether the field is changed by a user or not. Usually, this is done to avoid the coding required to keep the fields in a commarea. There is a significant amount of network overhead to send unchanged modified fields back and forth between an application and a terminal.

NetMizer reduces the overhead of sending an inbound data stream from the terminal to an application. On the outbound data stream from the application to the terminal, NetMizer records the fields the application marked as modified. It then resets the fields to non-modified and sends the data stream to the terminal. Users perform their processing and press an AID key to return the data stream. As always, only changed fields are returned over the network. NetMizer then intercepts the data stream. If any of the fields the application marked as modified are missing from the data stream, they are added back to the data stream and returned to the application. Inbound Suppression Optimization results in the following:

- All data is sent to the terminal.
- Only changed fields are received back from the terminal.
- All marked fields are returned to the application.

The application receives all requested fields, but the network sends only the modified data.

## Read Buffer Suppression

Some applications issue READ BUFFER requests to the terminal. In response, the terminal sends a copy of the buffer's contents back to the application. For 3270 model 2 terminals, this is always 1,920 characters. A copy of the entire buffer's contents is sent, including all blank and null characters.

NetMizer can intercept READ BUFFER requests and send a copy of the terminal buffer stored in memory. All read buffer requests by applications are suppressed, reducing the amount of network traffic.

## Implicit Benefits of Data Stream Optimization

The previous types of optimization techniques have the net effect of reducing the size and number of data streams sent over a network. In addition, there are other implicit benefits to overall system performance by reducing the size and number of data streams.

- **Reduced RU chaining**  
VTAM network data streams are transmitted in packets known as Request Units or RUs. Each RU contains VTAM control information as well as the data being sent to or from a device. RU sizes vary, depending on the network configuration. For example, an installation might specify RU sizes of 256 bytes, while another installation specifies RU size of 1024. Thus, when an application or device prepares to send data across a network, it must first divide the data into multiple RU packets and chain them together. This chaining process requires some CPU processing. Also, sending chained packets is slower than the total time to send all individual packets. Sending smaller data streams across a network reduces the amount of required of RU chaining and consequent CPU processing.
- **Reduced VTAM data buffering**  
Data stored within an application's address space must be sent to VTAM before being distributed by a network. The longer the message, the more buffering is required. The shorter the message the less buffering will be required.

## NetMizer Optimization Levels

NetMizer provides several levels of data stream compression based upon different combinations of optimization methods. PIE/CICS provides a set of *state* commands that determine the optimization environment before issuing a command or transaction. The following table summarizes NetMizer optimization levels and their corresponding state commands

Level of Optimization	Description	State Command
Full	Both inbound and outbound optimization plus semantic imaging	OPT
Level-3	Both inbound and outbound optimization plus normal imaging	OP3
Level-2	Outbound optimization and semantic imaging	OP2
Level-1	Outbound optimization and normal imaging	OP1
No optimization	Suppress optimization	NOOPT
Non-3270	All optimization methods are suppressed because the data stream is regarded as non-3270.	NON3270

Read buffer suppression can be used with any type of NetMizer of optimization.

## Optimization Controls

You can control NetMizer's data compression methods at a number of different levels.

- Default for all terminals
- Default for specific terminals or terminal groups
- Specific optimization for applications executed from a session or menu
- Specific optimization for an application invoked from a command line or blank screen
- Specific optimization for specific data streams

Instructions for implementing these controls are included in ["Customization"](#), beginning on [page 7](#) and ["Chapter 3 Operations"](#) on [page 21](#).

## Terminal Optimization

The Terminal Directory lists all terminals recognized by PIE/CICS. A terminal must be included in the Terminal Directory to be eligible for NetMizer optimization.

Terminals can be defined with wildcards. You can have a single definition in the Terminal Directory that is assigned to all terminals recognized by PIE/CICS. Alternatively, you can create different terminal groups with specialized operating attributes and include them in the Terminal Directory.

The Terminal Directory includes a model entry that serves as a default definition for subsequent entries. If an entry has a blank field, PIE/CICS assigns the corresponding value from the model entry as the default for the field. You can specify a default NetMizer optimization level for all terminals with the model entry. Other entries can have different optimization values for a selected terminal or terminal group.

## Session and Menu Optimization

You can define particular applications to execute in predefined MultiCICS sessions and PIE/CICS menus. If you want unique NetMizer optimization for applications that run in a specific session, you can change the optimization from the session's execution string.

- When you define optimization on a session's execution string, that optimization method remains in effect until the session is ended or until a different type of optimization is specified.

You can also set up optimization in the **Default Application** field of the PIE/CICS Profile utility. The default application executes if the user opens a session that has not been predefined, or an application that has not been specified to run in the session.

- When you set the optimization method for a menu, it is specified for that menu and its subordinate submenus. When you change the optimization on an execution string for an application, that optimization remains in effect for that application only. When you change the optimization level on the execution string for a submenu, that optimization remains in effect for every option on that menu, including all submenus.

When the user returns to a higher menu from a submenu with a specific optimization, NetMizer restores the optimization level originally in effect for the higher menu.

Using these techniques, you can specify different optimization at each level of your Dynamic Menu hierarchy. NetMizer maintains the optimization in effect for each group of menus. As users move up and down the menu hierarchy, NetMizer restores the optimization defined for each menu level.

## Application Optimization

In addition to predefined sessions and menu lines, there are other methods to set NetMizer optimization for specific applications:

- With the ATTACHX table. Every time the application is executed under PIE/CICS it will have the optimization specified here.
- With the PIEEXEC API when you execute the application using that API.
- Manually, at a blank screen. If the user executes an application from the CICS blank screen, NetMizer commands can be added to the beginning of the transaction string.

## Omitting Data Stream Optimization

You can prevent NetMizer optimization for individual outbound data streams sent by user programs. To do so, you must code the program to send the NetMizer escape sequence in the first 6 bytes of the data stream. Data streams that do not begin with the escape sequence are optimized by the current NetMizer optimization method in effect.

---

## Chapter 2 Customization

This chapter describes customization procedures that prepare NetMizer to run under PIE/CICS. For many of these procedures, refer to the *PIE/CICS Customization Guide* for more information.

Before you continue, you must install PIE/CICS using the procedures described in the *PIE/CICS Installation Guide*.

## Step 1: Accessing PIE as an Administrator

You need PIE/CICS system administrator authority to complete the customization procedures described in this chapter. System administrator authorization is specified in the User Directory. The default directory shipped with PIE/CICS authorizes all users as system administrators.

Most customization options are selected from the PIE/CICS System Administrator menu shown in the following figure. To access this menu, perform one of the following:

- If your PIE/CICS system is new, access PIE/CICS by entering the PIE transaction. Sign on at the Logon Director screen. You will be presented with the PIE/CICS Master menu. Select option 1, the System Administrator menu.
- If your PIE/CICS system has already been customized, enter PEXE MENU PIEMADM at a CICS blank screen or MENU PIEMADM at the Sessions menu command line. You will receive the System Administrator menu.

```

System Administration Facility -----
Option ==>                               Scroll ==> CUR
..#.. Name.... Title..... Arguments.....
User=USR1 Terminal=PIE10015
_ 1 NEWS      - Edit System News on Tue 09/10/98 8:02:13
_ 2 TERMINAL  - Update Generic Terminal Directory
_ 3 USER      - Update Generic User Directory

_ 4 LOGON     - List/Edit Logon Panels
_ 5 SCRIPT    - List/Execute/Browse Script files      *
_ 6 TEXT      - List/Edit Text Files;          GROUPID ==> *
_ 7 MENU      - List/Edit Dialog Manager Menus      *
_ 8 PROFILE   - List/Edit Profiles                *

_ 9 LICENSE   - Specify License Information for PIE
_10 OPTIONS   - Customize PIE System Options
_11 LOAD      - Upload/Download PIE objects

_ C CICS      - Native CICS MZW1 Environment
_ X EXIT      - Terminate This Menu
**END**

F1=Help      F2=SElect  F3=END      F4=RETurn  F7=UP      F8=DOWn

```

Throughout this manual, an assumption is made that you are working on a newly installed system with default options shipped with PIE/CICS. If your system has already been installed, the options and directories will be somewhat different.



## Step 2: Edit the User Directory

Users must be signed on to PIE/CICS in order to have their data streams optimized by NetMizer. The User Directory determines which users have access to PIE/CICS. The User Directory also determines the run-time PIE/CICS characteristics of these users, such as their profiles and administrative authority.

If your site uses other PIE/CICS components, such as MultiCICS, refer to those product manuals for information on customizing your User Directory. If NetMizer is your only PIE/CICS product, complete the following procedure.

It is important to edit the User Directory as soon as possible after installing PIE/CICS. The default directory shipped with PIE/CICS grants system administrator authority to all users. You need to restrict system administrator authority to only appropriate users after customizing your PIE/CICS products.

Be careful making changes to the User Directory. If you inadvertently delete all entries, nobody can access PIE/CICS. If you delete all administrator entries, nobody has the authority to change the User Directory. In either case, the User Directory must be reloaded from a backup Repository to correct the problem.

1. **Select option 3, USER, from the System Administrator menu to access the PIE Generic Users Directory screen shown in the following figure.**

```

PIE Generic Users Directory ----- (C) TSC, Inc 1995
Command ==>                               Scroll ==> DATA
... Userid.. Terminal Password Groupid. MenuName Profile. Updated.
___ (MODEL) (MODEL) (MODEL) PIEMMAIN USER 03/17/99
___ * * * * PIEMADM ACCOUNT 03/17/99
___ * * * * PIEMMAIN USER 01/27/99
**END**

```

2. **Tab to the first \* entry and type your user ID in the User id field.**

This is the system administrator entry. If you want to authorize more system administrators, place the cursor in the command field of the entry you just modified, type R, and press ENTER. Now you have two identical entries. Again, enter the new user ID in the User id field. Continue this procedure until you have defined all system administrators for your site.

The remaining \* entry (there should be only one now) authorizes all users to access PIE/CICS as standard users without administrative authority. Leave this entry unchanged.

3. **Save your changes and exit after you have finished editing.**

## Step 3: Edit the Terminal Directory

The Terminal Directory authorizes the terminals that can access PIE/CICS. It also determines PIE/CICS characteristics for those terminals, including the default NetMizer optimization.

When you edit the Terminal Directory, you are customizing NetMizer for the majority of PIE/CICS operations. Unless explicitly overridden by another control method, the optimization level specified in the Terminal Directory is used for all applications that execute on these terminals.

The default Terminal Directory setting includes an asterisk entry that does the following:

- Authorizes all terminals to sign on to PIE/CICS
- Specifies full NetMizer optimization

You can accept the Terminal Directory defaults or modify them. The following procedure explains how to change NetMizer optimization. There are several other attributes to change, including whether or not a terminal can sign on to PIE/CICS. See [“Terminal and User Directories” on page 43](#) of the *PIE/CICS Customization Guide* for information about other Terminal Directory fields.

Be careful when making changes to the Terminal Directory. If you inadvertently delete all entries, nobody will have access PIE/CICS, including system administrators. If this occurs, you must reload the Terminal Directory from a backup Repository.

1. **Select option 2, TERMINAL, from the System Administrator menu to access the Terminal Directory utility.**

The following figure shows an example of the Terminal Directory.

```
PIE Generic Terminal Directory ----- (C) TSC, Inc 1995
Command ==>                               Scroll ==> DATA
... Terminal Userid.. Password Logon  Logoff PIE Dial Opt SLM TRM RST Updated.
___ (MODEL)                               PIELMAIN USE  YES NO  FUL          03/37/99
___ *                                     PIELMAIN     YES NO  FUL NO  FUL NO  01/27/98
___ **END**
```

2. **Edit the model entry.**
3. **Specify the default NetMizer optimization on the Opt field.**

This field sets the global default optimization for all terminals. Valid values are:

FUL	Full optimization includes inbound and outbound optimization plus semantic imaging.
YES	Level-3 optimization includes inbound and outbound optimization plus normal imaging.
OP2	Level-2 optimization includes outbound optimization and semantic imaging.
OP1	Level-1 optimization includes outbound optimization and normal imaging.
NO	Suppresses optimization.
N32	Non-3270 data stream. All optimization methods are suppressed because the data stream is regarded as non-3270.

Read buffer optimization is specified when you execute the transaction. You can specify it in a session or menu line execution string. You can also specify read buffer suppression with the ATTACHX table. These alternative methods are discussed later in this chapter.

**4. Make a copy of the asterisk entry if you want to specify different optimization values for a specific terminal or group of terminals.**

Place the cursor in the entry's command field, type **R**, and press ENTER. Specify the new nodename or CICS terminal ID in the `Terminal` field. You can use wildcards. If you specify a CICS terminal ID, follow it with a colon (e.g., 1234:).

Change the optimization value on the `Opt` field if you want to use other than the default optimization. You can leave the `Opt` field blank and this terminal entry assumes the default optimization value from the model entry.

If you add entries, be sure to see ["Directory Entries" on page 45](#) of the *PIE/CICS Customization Guide* for information about entry order.

**5. Edit the asterisk entry. (It should be the last entry in the directory.)**

Change the `Opt` field, as you like. You can leave it blank to accept the value from the model entry.

**6. Save your changes and exit after completing your changes.**

## Step 4: Edit Profiles (Predefined Sessions)

If you have other PIE/CICS products, you can predefine sessions to run specific applications. Even if you do not have multiple sessions through MultiCICS, you may have session 1 defined to run a menu or some other application.

This step defines specific NetMizer optimization for applications running in predefined sessions. You can also set up a special optimization for the PIE default application. In most cases, applications do not require a special optimization level, and all applications can run with the defaults set in the Terminal Directory. If your applications have no specific requirements, you can skip this step and proceed to [“Step 5: Edit Menus \(Optional\),” on page 15](#).

As you complete the following procedure, refer to [“Profiles” on page 29](#) of the *PIE/CICS Customization Guide* for more information about user profiles and the Profile Utility.

1. **Access the Profile Utility.**
2. **Select option 8, PROFILE, from the System Administrator menu.**

The following figure shows an example of the List of Profiles menu.

```
PIE Utility list of PROFILES -----(C) TSC, Inc 1995
Command ==>                               Lines 1 to 18 of 33

Sel. Group... Name.... Changed..... By..... Size. Title.....
* * * * *
__ SYSTEM ACCOUNT 96/07/18 11:56 DEMO      8 System Administrator profi
__ SYSTEM DEMO   91/11/14 19:25 SD080BB   6 Demo user profile from Pri
**END**
```

3. **Select a profile from the list by entering an S line command field next to an entry listed on the screen**

The following figure shows an example of the primary Profile screen.

```
PIE Profile (SYSTEM.TECH) ----- (C) TSC, Inc 1987
Option ==>

      1 Terminal - Specify Terminal Characteristics      Update History:
      2 Defaults - Specify defaults for PIE (reserved)  Name: SYSADMN
      3 Keys     - Specify Global PIE keys              Term: PIE1002
      4 Sessions - Specify Sessions Configuration       Date: 08/03/96
                                                    Time: 9:34:50

PIE profile group ==> SYSTEM
PIE profile name  ==> TECH
PIE profile title ==> System Maintenance

Default Application ==> MENU MENUA
Initial PIE command ==> sessions
Final PIE command  ==> exit

Administrator ==> SYSADMN      Terminal ==> *
```

4. Add the appropriate optimization command to the beginning of the execution string entered on the `Default Application` field if you want the default application to run with a specific type of optimization.

Valid optimization commands are:

OPT	Full optimization.
OP3	Level-3 optimization.
OP2	Level-2 optimization.
OP1	Level-1 optimization.
NOOPT	No optimization.
NON3270	Non-3270 optimization.

Do **not** follow the command with a delimiter, such as a semi-colon (;). For example, suppose your default application is the dynamic menu ACCNTS. You are running full optimization by default, but you want to turn off optimization for all applications that are selected from this menu. You change the execution string from

```
Default Application ==> MENU ACCNTS
```

to

```
Default Application ==> NOOPT MENU ACCNTS
```

These optimization commands are PIE state commands. They set the state or operating environment for the application specified in the `Default Application` field. There are other state commands. The most common state command is `AutoEnd (AE)`. If there are multiple state commands in an execution string, you can code them in any order. Simply enter all state commands before the CICS transaction or PIE Application command on the execution string.

For example, suppose you are running `MENUA` with the `AE` state command. All applications running under `MENUA` end automatically when they are completed. The following example shows how the `Execute` field of `MENUA` is defined.

```
Default Application ==> AE MENU MENUA
```

You can enter a state command on the same field to change the default optimization for `MENUA`:

```
Default Application ==> NOOPT AE MENU MENUA
```

or

```
Default Application ==> AE NOOPT MENU MENUA
```

To specify read buffer suppression, precede the tranid with the **RBS** state command. Code the **RBS** command just as you would any other NetMizer state command.

5. Enter option 4 from the primary Profile screen to access the Sessions Configuration screen shown in the following figure.

```

PIE Profile Sessions Configuration ----- (C) TSC, Inc 1987
Command ==>
      Name....  Title.....  Hide
 1 Name ==> ADMINSTR - System Administration Functions  &ZLname -
Execute ==> menu piemadm (&arg

 2 Name ==> SYSTEM   - System Management Functions      &ZLname -
Execute ==> menu piemsys (&arg

 3 Name ==> CICS     - Native &ZSYSID facilities          &ZLname -
Execute ==> system prompt

 4 Name ==> NOTEPAD  - My private Notepad                               &ZLname -
Execute ==> edit &ZUSER

 5 Name ==> USERS    - List/View active &ZSYSID users      &ZLname -
Execute ==> list users

 6 Name ==> SIGNMSG  - Display My signon messages                          &ZLname -
Execute ==> browse pie.signmsg

PF: 1 Help  3 End  4 REturn  7 UP  8 DOWN

```

This screen shows the predefined sessions within the user's profile. You can change the optimization level of any session. Use the same rules specified for the Default Application field to enter optimization state commands.

Each Profile Session Configuration menu displays six sessions. Use PF7 and PF8 to scroll from one screen to another. You can use PF7 to wrap around from the first screen to the last screen.

You may want read buffer suppression for an application that your users execute from a blank screen. If so, you can specify read buffer suppression in either of the following ways.

- Specify RBS for all applications to run in the blank screen session. To do so, specify **RBS SYSTEM** for that session's Execute field.
- Specify RBS to run for that application, every time that application is executed, using the ATTACHX table. See ["Step 7: Edit the ATTACHX Table," on page 17.](#)

6. Return to the Profile Utility main screen after you have finished editing.
7. Save your changes and exit to the Profile List.
8. Press PF3 from the Profile List screen to exit the Profile Utility.

---

## Step 5: Edit Menu (Optional)

*Omit this step if your site does not use PIE/CICS Dynamic Menus.*

You can set up special NetMizer optimization for applications running in Dynamic Menu. In most cases, applications do not require a special optimization level and all applications can run with the defaults set in the Terminal Directory. If your applications have no specific requirements, you can skip this step.

As you complete the following procedure, refer to ["Creating Menu" on page 31](#) and ["Defining Menu Commands" on page 45](#) of the *PIE/CICS Dynamic Menu Administration Guide* for additional information.

1. **Access the Menu List, select the menu you want to edit, and go to the Menu Line screen.**
2. **Add a NetMizer state command at the beginning of the execution string.**

The available commands and the rules for coding them are described in ["Step 4: Edit Profiles \(Predefined Sessions\)," on page 12](#).

You must also ensure the `Type` field specifies `F`, for "free form." If it does not, change the field to `F` and add the appropriate command to the execute string.

For example, suppose your menu line fields are as follows

```
Execute    ===> ABCD
Type      ===>  C
```

And you want the transaction to run without NetMizer optimization. You must change the fields to

```
Execute    ===> NOOPT CMD ABCD
Type      ===>  F
```

3. **When you have finished, save your changes and exit from the Menu Utility.**

## Step 6: Modify Applications

You can change user-written programs to:

- Exempt particular data streams from NetMizer optimization
- Change NetMizer optimization for applications that execute through the PIEEXEC API

### Exempt Data Streams

You can prevent NetMizer optimization for specific outbound data streams sent by user programs. To do so, you must code the program to send an escape sequence in the first 6 bytes of the data stream. Data streams that do not begin with an escape sequence are optimized by NetMizer.

When NetMizer detects an escape sequence, it regards the data stream as transparent (non-3270). No attempt is made to optimize the data stream. The number of data stream escape sequences is reported by the NetMizer Statistics Utility.

An escape sequence does not alter the content of a data stream. You can code an application to send an escape sequence without regard to whether the application runs only under PIE/CICS.

A data stream with an escape sequence is not saved for session switching with MultiCICS. Switching out of and back to a session that has sent this data stream will cause data display errors.

1. **Edit the application.**
2. **Place the following escape sequence in the first 6 bytes of the data stream:**  
`X'115D7F110000' or X'115D7F110001'`

### Change Applications Executed By the PIEEXEC API

You can set special NetMizer optimization for applications executed with the PIEEXEC API. In most cases, applications do not require a special optimization level. All applications can run with the defaults specified in the Terminal Directory. If your applications have no specific requirements, you can skip this step.

1. **Edit your application.**
2. **Add a NetMizer state command to the API execute string. The available commands and the rules for coding them are detailed in ["Step 4: Edit Profiles \(Predefined Sessions\)"](#) on page 12.**



## Step 7: Edit the ATTACHX Table

Using the ATTACHX table, you can specify a particular NetMizer optimization level for an application's transactions, regardless of how the application is executed.

The ATTACHX table is a PIE/CICS system table. This table and others are discussed in greater detail in ["PIE/CICS System Tables" on page 179](#) of the *Customization Guide*.

Complete the following procedure to change NetMizer optimization levels within the ATTACHX table.

1. **Edit the ATTACHX member of the PIE/CICS MACLIB dataset.**
2. **Add an entry for the transaction, using the following statements.**

```
PG@RMATT TRANID=tranid,INT=NO, SUB=YES,NEWTRAN=PEXE,  
          COMMAND='PEXE state NOTATTACH AE CMD tranid'
```

To exempt transaction ABCD from optimization, code:

```
PG@RMATT TRANID=ABCD,INT=NO, SUB=YES,NEWTRAN=PEXE,  
          COMMAND='PEXE NOOPT NOTATTACH AE CMD ABCD'
```

The transaction must AutoEnd. Otherwise, when you end the transaction, all other transactions running in that session will use this NetMizer optimization level.

3. **Reassemble the system tables using member PG@RPCSC of the CNTL dataset.**  
Your changes become effective the next time CICS is cycled.

## Step 8: Set Up the Logon Director

If this is a new PIE/CICS installation, you must define how users to sign on to PIE/CICS. Users can be signed on directly to PIE/CICS using the Logon Director screen. Also, users can sign on automatically from a VTAM sessions manager, VTAM menu application, or a site-specific signon application. NetMizer has no specific requirements for Logon Director operation.

Refer to [“Logon Director” on page 3](#) of the *PIE/CICS Customization Guide* for more information about the Logon Director.

If you want users to sign on at the Logon Director screen, you must set up the Logon Director as the CICS good morning message transaction. See [“Using the Logon Director as the Good Morning Message” on page 8](#) of the *PIE/CICS Customization Guide* for more information.

However, you should not make the Logon Director the good morning message transaction until NetMizer is fully customized and tested. Until that time, PIE/CICS users can access the Logon Director screen with the **PIE** transaction.

If you want your users to continue signing on to CICS by the current method used at your site, you must set up automatic Logon Director signon. Perform the appropriate procedures in [“Automating User Sign Ons” on page 6](#) of the *Customization Guide*.

## Step 9: Initialize NetMizer

You can initialize NetMizer by the following methods:

- Automatic initialization when the user signs on to PIE/CICS

NetMizer initializes when a user logs on to PIE/CICS by a direct signon at the Logon Director or an automatic signon passed from your current signon system. No additional customization is required.

- Using a Program List Table (PLT) entry

You must add an entry to the post-initialization PLT to execute the PCSMPINI program, which prepares the required NetMizer environment.

```
PLTPI      TITLE 'DFHPLTA1- PROGRAM LIST TABLE POST INIT'  
           DFHPLT TYPE=INITIAL,SUFFIX=A1  
           DFHPLT TYPE=ENTRY,PROGRAM=PCSMPINI  
           DFHPLT TYPE=FINAL  
           END      ,
```



---

## Chapter 3 Operations

This chapter describes how to change NetMizer run-time optimization and use the NetMizer Statistics Utility. There are other PIE/CICS utilities that you may find useful. For information about these utilities, refer to ["Help Desk Utilities" on page 115](#) of the *PIE/CICS Operation and Administration Guide*.

## Changing Run-time Optimization Levels

You can change the run-time NetMizer optimization level for an application or an end user by any of the following methods:

- Change your run-time profile to specify a particular optimization level for a predefined session. See ["Changing User Profiles" on page 18](#) of the *PIE/CICS Operation and Administration Guide* for more information.
- Specify an optimization level when you allocate a new session. Read the following section titled ["New Sessions"](#).
- Specify an optimization level when you execute an application from the CICS blank screen. See ["Blank Screen" on page 23](#).

You cannot change optimization levels that have been predefined in menus.

You change optimization using NetMizer state commands. These commands and the rules for coding them are presented in ["Edit Profiles \(Predefined Sessions\)" on page 12](#).

## New Sessions

You can specify a different level of optimization for a newly created or allocated session. Simply code a NetMizer state command after the PIE Environment command that allocates the session and before the CICS transaction or PIE Application command that executes in the session.

For example, to allocate a new session and run menu ACCOUNT with optimization level-3, enter the following command:

```
ALLOC OP3 MENU ACCOUNT
```

You can omit the Environment command and default to the OPEN command. Your command would look like so:

```
OP3 MENU ACCOUNT
```

## Blank Screen

You can specify a different level of optimization for an application when you invoke it from the CICS blank screen. The command string to invoke the transaction or application must be coded in a specific order:

1. **PEXE**
2. **NetMizer state command**
3. **CICS transaction or PIE Application command**
4. **Command arguments**

For example:

```
PEXE OP3 MENU ACCOUNT
```

or

```
PEXE NOOPT CEDF
```

## NetMizer Statistics Utility

The NetMizer Statistics Utility provides information about the effect NetMizer optimization has on your data streams. The NetMizer Statistics Utility shows data stream optimization for an individual users, terminals, and groups of users and terminals.

Execute the PNMZ transaction to access the NetMizer Statistics Utility. The following figure shows an example of the NetMizer Statistics screen. The fields of the screen are described following the figure. For more information about this screen, press PF1 (Help).

```

PIE NetMizer Statistics ----- (C) TSC, Inc 1995
Command ==>

Userid      ==> ACC09PWH      Id of user to display (Blank for System)
Terminal    ==>              Nodename to display

Data Streams Optimized - 1,307 ALL Users match selection criteria

AVERAGE:
  Avg bytes before 1,086      TOTAL:
  Avg bytes after  562      Total bytes before 1,420,024
  Avg % saved     48.2%     Total bytes after 735,110
                          Total % saved 48.2%
                          Total errors corr 0

LARGEST: Tran= PLSO Term= V064  LAST: Tran= PMEN Term= 0003
  Largest before  1,525      Last before      1,674
  Largest after   4          Last after       1,249
  Largest % saved 99.7%     Last % saved     25.3%

Time in NetMizer:
  Average - 0:00.1383308    Data Streams not Optimized - 0
  Maximum - 0:03.4840890    Escape sequence 0
  Minimum  - 0:00.0262560   NOOPT was set 0
                          Synchronize lost 0

PF: 1 Help 3 End 4 Return 6 REfresh

```

**Userid** User ID mask in effect for this display. You can change this mask to obtain optimization statistics for different user(s).

**Terminal** Terminal ID mask in effect for this display. You can change this mask to obtain optimization statistics for different terminal(s). Specify a VTAM nodename or a CICS termid followed by a colon (e.g., 1234:).

You can enter wildcards for both the Userid and Terminal fields. Wildcards are: \* for any character in that position and forward, ? for any character in that position, and # for any number in that position. You can code one or both of these fields. If you code both, both matching criteria must be met for the user or terminal to be included in the statistics.

**Data Streams Optimized**

Number of optimized data streams and the number of users in the sample.

**AVERAGE** Average number of bytes optimized, showing lengths before and after optimization, plus percentage saved.



TOTAL	Total number of bytes optimized, showing lengths before and after optimization, plus percentage saved.
Total errors corr	Number of data stream errors corrected by NetMizer.
LARGEST	Largest optimized data stream, showing average lengths before and after optimization, percentage saved, plus the tranid and terminal for which the data stream was issued.
LAST	Last data stream optimized, showing lengths before and after optimization, percentage saved, plus the tranid and terminal for which the data stream was issued.
Time in NetMizer	Clock time data streams spent in NetMizer: average, maximum, and minimum.
Data Streams not Optimized	Number of data streams bypassed by NetMizer. It shows numbers for the data stream escape sequence, the NOOPT state command, and data streams that could not be optimized (Synchronize lost).

## Commands

The following commands can be entered from the NetMizer Statistics Utility screen:

- HELP (PF1)  
Display help text for the screen. If you are a systems administrator, you can update the help from this screen.
- END (PF3)  
Exit the utility and return to the preceding menu.
- RETURN (PF4)  
Same as END
- REFRESH (PF6):  
You can refresh the displayed statistics by pressing the ENTER key. This recomputes NetMizer statistics based upon data streams that were optimized for the users and terminals currently defined in the Userid and Terminal fields.



## Appendix A Customer Support

This appendix describes how to get help from Customer Service when you experience a problem with a UNICOM Systems, Inc. product. This appendix includes separate sections that describe several diagnostic suggestions to rule out user errors and the information you should have ready before reporting the problem.

### Contacting Customer Service

UNICOM Systems, Inc. Customer Service can be reached by the following methods:

Voice	818-838-0606
Fax	818-838-0776
E-mail	support@unicomsi.com

A Support and Services web page provides Customer Service information about all of UNICOM Systems, Inc.'s products. Use the following URL to browse the Support and Services web page:

<http://www.unicomsi.com/support>

The Support and Services web page provides an online form to report a problem with a UNICOM Systems, Inc. product. Use the following URL to complete and submit a Technical Support Request form:

<http://www.unicomsi.com/support>

Normal business hours are from 6:00 a.m. to 5:00 p.m. Pacific Standard Time, Monday through Friday. Emergency customer service is available 24 hours a day, 7 days a week.

An answering service receives customer service calls beyond normal business hours. You may leave a message if it is not an urgent problem. A customer service representative will return your call at the start of the next business day.

Requests for urgent support outside of normal business hours are answered immediately. A customer service representative will be summoned to return your call. Leave a phone number where you can be reached. If you have not received a return call from a Customer Service representative within an hour of reporting the problem, please call back. Our customer service representative may be experiencing difficulties returning your call.

International customers should contact their local distributor to report any problems with a UNICOM Systems, Inc. product.

## Troubleshooting Suggestions

This section describes several troubleshooting suggestions to diagnose common errors that can cause PIE/CICS problems. Before calling Customer Service, follow these suggestions to rule out the possibility these errors are causing your PIE/CICS problem.

- Run the Installation Verification Program with the **P#IV** transaction. Browse the PIECIVP temporary storage queue to see if it contains error messages that suggest problems with the allocation of CICS programs, transactions, maps, or files.
- Verify any recent changes to your site's operating system, CICS, or other products are fully compatible with PIE/CICS.
- Verify all load modules are at the same release level if a new release of PIE/CICS was installed over a previous release.
- Check that all modules were reassembled after upgrading PIE/CICS or applying maintenance to CICS.
- Verify all PIE/CICS system tables were reassembled after applying maintenance to CICS or upgrading to another release.
- Verify all users have current PIE/CICS passwords and entered them correctly.
- Examine your CICS logs, MVS console, and PIE/CICS logs for error messages from not only PIE/CICS, but any other product that runs concurrently with PIE/CICS.

## Describing the Problem

Gather the following information about your system environment before reporting a problem to UNICOM Systems, Inc. Customer Service:

Operating system release and PUT Level \_\_\_\_\_

VTAM system release and PUT Level \_\_\_\_\_

PIE/CICS release \_\_\_\_\_

Date of PIE/CICS distribution tape \_\_\_\_\_

Gather the following information about your CICS system before reporting a problem to UNICOM Systems, Inc. Customer Service:

CICS release and PUT Level \_\_\_\_\_

CICS configuration MRO/ISC etc. \_\_\_\_\_

Real or virtual terminal \_\_\_\_\_

Before calling UNICOM Systems, Inc. Customer Service, get answers to the following questions:

What PIE/CICS products were active when the problem occurred?

Availability Plus

Dynamic Menus

MultiCICS

NetGate

NetMizer

NonStop CICS

Is the problem occurring in the TOR or AOR? \_\_\_\_\_

Is the problem occurring in a production or test region? \_\_\_\_\_

What is the severity of the problem? \_\_\_\_\_

What are the major symptoms of the problem? \_\_\_\_\_

Is the problem re-creatable under specific conditions? \_\_\_\_\_

Has the problem occurred more than once? \_\_\_\_\_

Were changes made to CICS or PIE/CICS immediately prior to the occurrence of the problem? \_\_\_\_\_

What other software products were running when the problem occurred? \_\_\_\_\_

Is a diagnostic message produced when the problem occurs? If so, what is the ID and text of the messages? \_\_\_\_\_

Does an abend occur? If so, what are the abend and return codes? \_\_\_\_\_

Is a dump produced when the problem occurs? If so, what kind of dump is it? \_\_\_\_\_

Please try to be as accurate and complete as possible in answering these questions. Your problem can be resolved more quickly if a customer service representative has all of the pertinent information needed to find a solution.



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