

**VARIABLE FORWARD NO ANSWER**

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**OPERATIONS GUIDE**

**NEC America, Inc.**

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# TABLE OF CONTENTS

|   | <b>Page</b> |
|---|-------------|
| <b>Chapter 1 - Introduction</b> .....           | <b>1</b>    |
| Overview .....                                  | 1           |
| How to Use this Manual .....                    | 2           |
| Manual Organization .....                       | 2           |
| General Conventions .....                       | 2           |
| Related Documentation .....                     | 2           |
| <b>Chapter 2 - Installation</b> .....           | <b>3</b>    |
| Installation Requirements .....                 | 3           |
| UAP Basic Configuration .....                   | 3           |
| PBX Basic Configuration .....                   | 3           |
| Installation Procedure .....                    | 3           |
| <b>Chapter 3 - Configuration</b> .....          | <b>7</b>    |
| Database Administration .....                   | 7           |
| Application Configuration Menu .....            | 7           |
| User Defined Settings .....                     | 7           |
| Modifying the Installed Configuration .....     | 11          |
| Database Requirements .....                     | 15          |
| Looking at your Default Database .....          | 15          |
| Building a Master Database .....                | 16          |
| Sample Database Entry .....                     | 18          |
| Specifying the Application Database Field ..... | 18          |
| Processing the Application Database .....       | 18          |
| Installing the Application Database .....       | 20          |
| Ongoing Configuration Management Issues .....   | 21          |
| Application Start-Up .....                      | 21          |
| User Tasks .....                                | 22          |
| <b>Appendix A - Glossary</b> .....              | <b>23</b>   |

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## LIST OF FIGURES

| Figure | Title   | Page |
|--------|---|------|
| 1-1    | Open Application Interface (OAI) Architecture ..... | 1    |
| 2-1    | APM Administration Main Menu .....                  | 4    |
| 2-2    | Installation of Applications/Packages .....         | 4    |
| 2-3    | Release Media Devices .....                         | 5    |
| 2-4    | Install Procedure .....                             | 5    |
| 2-5    | Processing Files .....                              | 6    |
| 2-6    | APM Administration Main Menu .....                  | 6    |
| 3-1    | System Administration .....                         | 8    |
| 3-2    | Application Selection .....                         | 8    |
| 3-3    | Configuration Entry .....                           | 9    |
| 3-4    | vfna/Database Name .....                            | 9    |
| 3-5    | vfna/User Defined .....                             | 10   |
| 3-6    | Administration Main Menu .....                      | 11   |
| 3-7    | System Administration .....                         | 12   |
| 3-8    | Application Selection .....                         | 12   |
| 3-9    | Configuration Entry .....                           | 13   |
| 3-10   | Administration Main Menu .....                      | 14   |
| 3-11   | System Administration .....                         | 16   |
| 3-12   | Database Administration .....                       | 16   |
| 3-13   | Master File Selection .....                         | 17   |
| 3-14   | vnadb_m Database Entry .....                        | 17   |
| 3-15   | System Administration .....                         | 18   |
| 3-16   | Database Administration .....                       | 19   |
| 3-17   | Process Application Database .....                  | 19   |
| 3-18   | Database Administration .....                       | 20   |
| 3-19   | Install Application Database .....                  | 20   |
| 3-20   | System Administration .....                         | 21   |

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## Chapter 1 Introduction

The Variable Forward No Answer (VFNA) application allows a configurable amount of time a call rings a phone before it gets forwarded to another extension.

### Overview

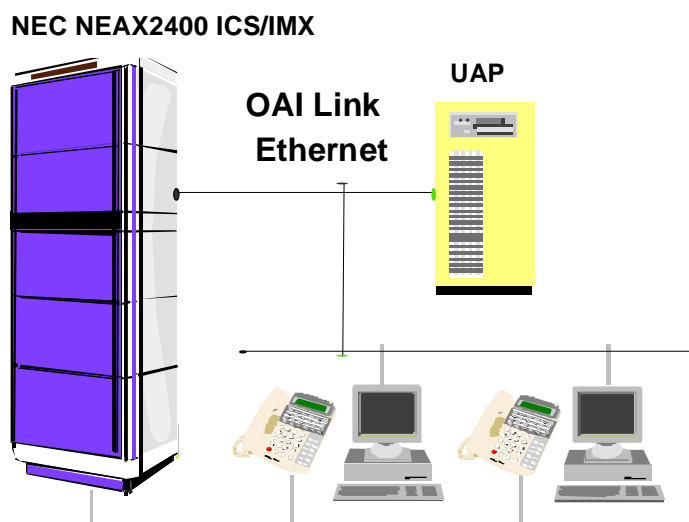
The VFNA application detects incoming calls and sets a timer according to the value that corresponds to the extension receiving the call. The timer value is maintained in the Application Platform Manager (APM) database. If and when the timer times-out, the call is transferred to an extension defined in the APM database. This overcomes the switch limitation of a forward no answer global delay variable for all extensions.

The VFNA application is primarily designed to provide a back-up or "fail-safe" method of detecting external equipment failures that result in phones ringing unanswered. For example, if an IVR system goes down, calls to the IVR will ring unanswered. With the VFNA application, the stations that are ports in the IVR will be transferred to a manned extension or the operator.

**Note:** *If the extensions that use VFNA have a forward no answer function, this function must remain **off**.*

**Note:** *If stations are transferred to voice mail, there is no voice mail integration. The caller would be transferred to voice mail as if they directly called voice mail.*

The VFNA application works inside the general OAI system ([Figure 1-1](#)).



**Figure 1-1 Open Application Interface (OAI) Architecture**

## How to Use this Manual

This guide is designed to make the installation and configuration process easy to understand and simple to use. There are examples of the screens displayed during the installation, with step-by-step instructions for the procedures you will need to perform.

### Manual Organization

#### Chapter 1 - Introduction

This chapter outlines how to use this manual, including the actual manual organization, chapter layout, and conventions.

#### Chapter 2 - Installation

This chapter describes how to install the VFNA application.

#### Chapter 3 - Configuration

This chapter describes how to configure the VFNA application.

#### Appendix A - Glossary

The appendix has a glossary of key terms.

### General Conventions

This guide uses the following conventions:

| <u>ITEM</u>   | <u>TYPEFACE or CONVENTION</u> | <u>EXAMPLE</u>  |
|---|-------------------------------|---|
| Book titles   | <i>Italics</i>                | <i>Variable Forward No Answer Operations Guide</i>  |
| User Input, variables                               | <b>Boldface</b>               | Enter <b>password</b> at the prompt.  |
| Menu names, Window titles, field names              | Capitalized                   | Options menu, Line Status window, User ID field   |
| Any screen output generated by the VFNA application | Courier New                   | A message or prompt that is displayed by the D <sup>term</sup> .<br>For example: Extension: |

## Related Documentation

Various OAI documents such as:

- Directory Dialer: An Open Application Interface (OAI) User Guide



## Chapter 2 Installation

This chapter provides step-by-step instructions for installing the VFNA application.

### Installation Requirements

The minimum configuration requirements for each of these groups are specified below.

#### UAP Basic Configuration

The VFNA application requires a UAP 1000 Server.

#### PBX Basic Configuration

The VFNA application requires the following for PBX basic configuration.

- A NEAX2400 ICS/IMS with OAI compatible software
- An Interface Processor (IP) Unit (or OAI module)
- Specific hardware associated with the IP varies with the NEAX configuration -- NEAX2400 ICS or NEAX2400 IMX

Detailed lists of the hardware are provided in the OAI Module Installation Manual for the NEAX2400 IMS.

### Installation Procedure

Use the following steps to install the VFNA application.

1. Go to the APM Administration Main Menu screen ([Figure 2-1](#)).

**Note:** *See the Applications Manager documentation for more information on this screen.*

```
NEC America                APM Administration                Tue - May 30, 2000

APM Platform Release Rel3.1.2 (Feb 2, 1999)

Main Menu

APM
Debug Facilities
Halt APM System
File Archive
Installation of Applications/Packages
Configuration of UAP
Removal of Packages
Startup APM System
Manage Activation Keys

Logout
UNIX

Enter Option: 1

APM Status: ACTIVE
```

**Figure 2-1 APM Administration Main Menu**

2. Type **I** to select the install option, then press **Enter**.  
The Installation of Applications/Packages screen displays ([Figure 2-2](#)).

```
NEC America                APM Administration                Tue - May 30, 2000

Installation of Applications/Packages

Available Packages are:

applications  asl  mt  tcpip  timesync  x25

Enter Package to be installed: applications
```

**Figure 2-2 Installation of Applications/Packages**

3. At the Enter Package to be installed prompt, type in **applications** and then press **Enter**.  
The Release Media Devices screen displays ([Figure 2-3](#)).

```

Installation of Applications/Packages
Available Packages are:
applications  ast  mt1  tcpip  timesync  x25
Enter Package to be installed: applications
Release Media Devices are:
(F)loppy Disk Device  (C)artridge Tape Device
Enter Release Media Device: f

Install Procedure

Installing from /dev/fd0

Insert OAI Application/Update Release Media #1
Enter <Return> to continue :

```

Figure 2-3 Release Media Devices

4. Type **F** for floppy disk, then press **Enter**.  
The Install Procedure screen displays (Figure 2-4).

```

(F)loppy Disk Device  (C)artridge Tape Device
Enter Release Media Device: f

Install Procedure

Installing from /dev/fd0

Insert OAI Application/Update Release Media #1
Enter <Return> to continue :
Copying .....
tar: blocksize = 28
x oai/app/vfna, 351599 bytes, 687 tape blocks
x oai/src/app/vfna/db/vfnadb_e.adf, 350 bytes, 1 tape blocks
x oai/src/app/vfna/db/vfnadb.adf, 121 bytes, 1 tape blocks
x oai/src/app/vfna/cfg/vfna.cfg, 1067 bytes, 3 tape blocks
x oai/app/vfna.ins, 3304 bytes, 7 tape blocks
x oai/chksun_app, 165 bytes, 1 tape blocks

Has all release media been loaded [y or n] ? y

```

Figure 2-4 Install Procedure

5. Insert your disk, then press **Enter**.  
The display prompts: Has all release media been loaded [y or n] ?
6. Type **Y**, then press **Enter**.  
The Processing Files screen displays (Figure 2-5).

```
Processing files:
Variable Forward No Answer Installation Procedure for
SCO/Interactive UNIX

Defining database...
Database defined.

Configuring Variable Forward No Answer application...
autoctfg running...

autoctfg: vfna application configured.
autoctfg terminated normally.

Variable Forward No Answer configured successfully

Before initializing Variable Forward No Answer, follow the
User's Guide to configure site dependent variables.

Hit the return key to return to the APM menu:
```

Figure 2-5 Processing Files

The VFNA application is now installed.

7. Press **Enter** to return to the APM Administration Main Menu screen. The APM Administration Main Menu displays (Figure 2-6).

```
HCC America APM Administration Tue - May 30, 2000

APM Platform Release Rel3.1.2 (Feb 2, 1999)

[Enter]

APM
Debug Facilities
Nail APM System
File Archive
Installation of Applications/Packages
Configuration of OAP
Removal of Packages
Startup APM System
Manage Activation Keys

Logout
UNIX

Enter Option: [1]

> APM Status: ACTIVE
```

Figure 2-6 APM Administration Main Menu

8. If you now wish to exit the APM system, press **L** for **Logout**.

## Chapter 3 Configuration

This chapter provides step-by-step instructions for configuring the VFNA application.

**Note:** *The VFNA installation process automatically performs all necessary configuration functions. The section below entitled [Modifying the Installed Configuration](#) shows you how to manually modify these installed parameters.*

### Database Administration

The Variable Forward No Answer application uses the APM database. The database includes the following data items:

- Name - name of the station (25 characters max)
- VFNA station extension (5 digits max)
- Tenant number for extension (3 digits max)
- Forward phone extension (25 digits max)
- Timer value - number of seconds to wait while no answer before forwarding call (4 digits max)

### Application Configuration Menu

A major element of OAI in the UAP is the Application Manager (APM), a set of menu-driven software which allows control of OAI processes and data access. The Variable Forward No Answer application is incorporated into the OAI system by means of the APM. Certain information associated with the application must be made known to the OAI system. This is accomplished by using the Application Configuration Menu of the APM.

### User Defined Settings

For the VFNA application to run properly, three user-defined settings must be assigned: a monitored number, a monitored number tenant, and a forward extension busy call number. Here's how to do that.

1. Go to the System Administration screen.  
The System Administration screen displays ([Figure 3-1](#)).

**Note:** *See the [Applications Manager documentation](#) for more information on this screen.*

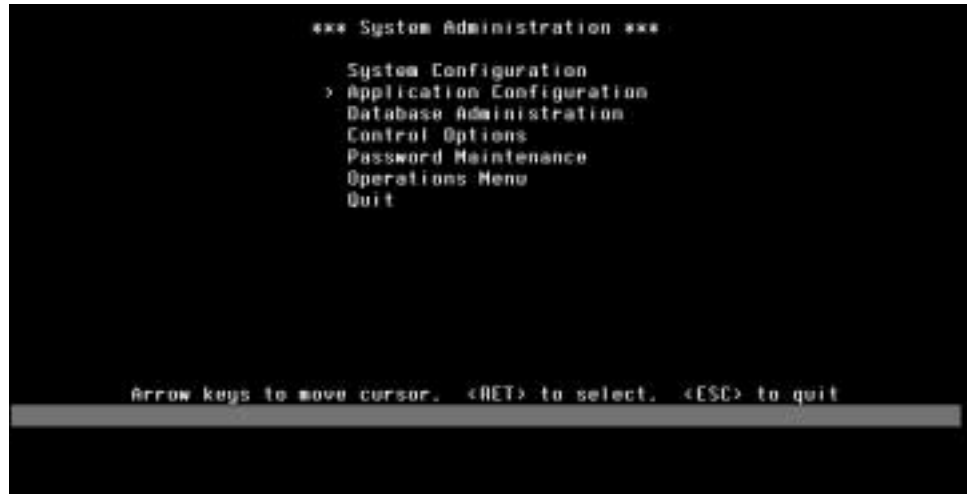


Figure 3-1 System Administration

2. Select **A** for **Application Configuration**, then press **Enter**. The Application Selection screen displays (Figure 3-2).

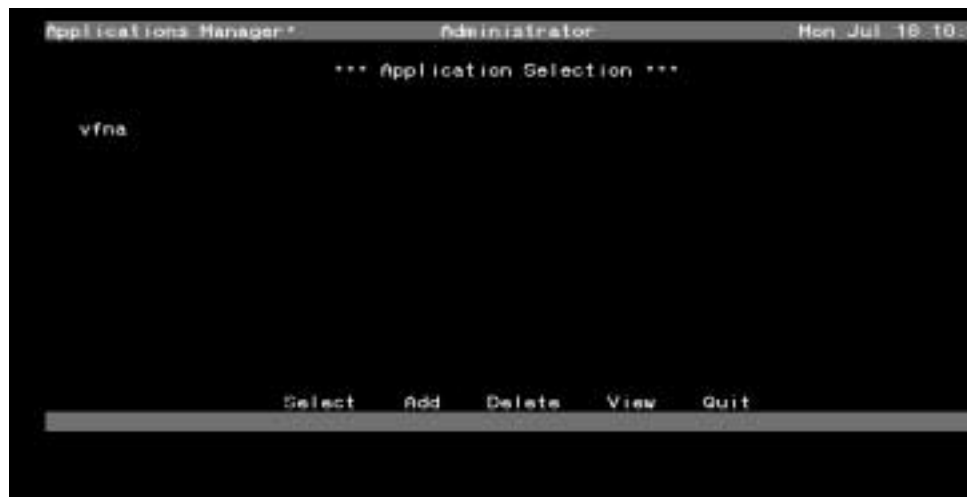


Figure 3-2 Application Selection

3. Press **S** for **Select**, then press **Enter**.
4. Cursor down to **vfna**.

**Note:** Use the Page Down key if more screen choices are needed.

5. Select **vfna**, then press **Enter**. The Configuration Entry screen displays (Figure 3-3).

```
Applications Manager Administrator Tue May 30 10:29
*** Configuration Entry ***
Application Name: vfna
Executable Filename: /oai/app/vfna
Group:
Response Mode (I,N,T): I
Initialization Batch (Y,N): N
Termination Mode (K,N,T): N
Standard Output: /oai/log/dbg/vfna.dbg
Number of Restarts (*,8-999): 8

Modify Facilities Providers OAI-Conf Quit
```

Figure 3-3 Configuration Entry

6. Select **O** for **OAI-Conf**, then press **Enter**.  
The vfna/Database Name screen displays (Figure 3-4).

```
vfna
Database Name #1: /oai/db/cur/vfnadb
Database Name #2: /oai/app/data/vfnadb_bu
Timeout Value #1: 8
Timeout Value #2: 8
Tenant Number (0-255): 8
Source Link Name: OAI1TCP
Destination Link Name: PBX1TCP
Association Recovery: 8

Modify UserDefined Quit
```

Figure 3-4 vfna/Database Name

7. Select **U** for **User Defined**, then press **Enter**.  
The vfna/User Defined screen displays (Figure 3-5).



Figure 3-5 vfnm/User Defined

8. Select **M** for **Modify**, then press **Enter**.
9. Select **User Defined #1**, then type in the monitored number, then press **Enter** to accept it.
10. Select **User Defined #2**, then type in the monitored number's tenant, then press **Enter** to accept it.
11. Select **User Defined #3**, then type in the forward extension busy call number, then press **Enter** to accept it.

**Note:** A sample setting might be as follows: monitor number = 3200, monitored number tenant = 1, forward extension busy call number = 4000.

12. Press the **Escape** key to return to the command line.
13. Type **Q** for **Quit**.
14. Press **Enter** until the following prompt displays: Do you want to save your changes (Y or N)?
15. Type **Y** for yes, then press **Enter**.  
The Administration Main Menu (Figure 3-6) displays.





Figure 3-6 Administration Main Menu

Your user defined settings are now complete.

## Modifying the Installed Configuration

Use the following steps to manually modify the installed configuration parameters.

1. Go to the System Administration screen.  
The System Administration screen displays (Figure 3-7).

**Note:** See the *Applications Manager* documentation for more information on this screen.

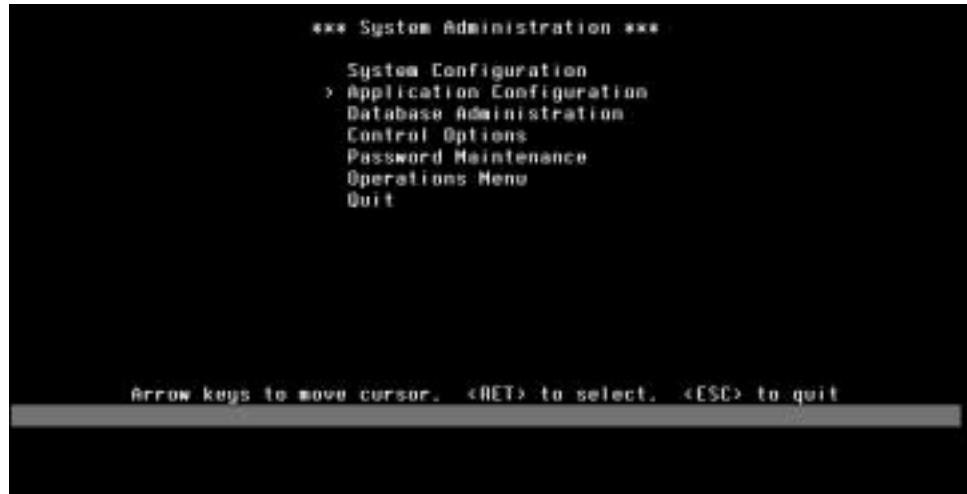


Figure 3-7 System Administration

2. Select **A** for **Application Configuration**, then press **Enter**. The Application Selection screen displays (Figure 3-8).

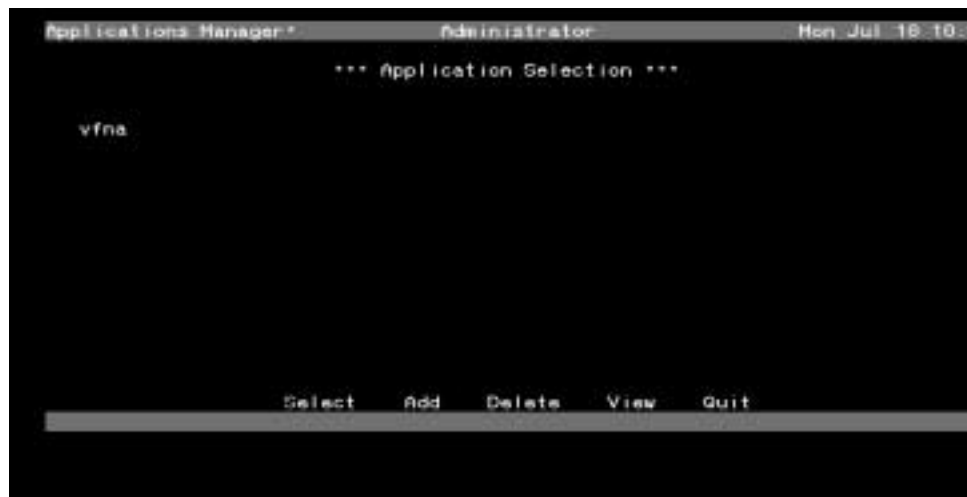


Figure 3-8 Application Selection

3. Press **S** for **Select**, then press **Enter**.
4. Cursor down to **vfna**.

**Note:** Use the Page Down key if more screen choices are needed.

5. Select **vfna**, then press **Enter**. The Configuration Entry screen displays (Figure 3-9).

```
Applications Manager Administrator Tue May 30 10:29
*** Configuration Entry ***
Application Name: vfna
Executable Filename: /oai/app/vfna
Group:
Response Mode (I,N,T): I
Initialization Batch (Y,N): N
Termination Mode (K,N,T): N
Standard Output: /oai/log/dbg/vfna.dbg
Number of Restarts (*,8-999): 8

Modify Facilities Providers OAI-Conf Quit
```

**Figure 3-9 Configuration Entry**

This screen shows the installed default configuration. To modify the application name, do as follows:

**Note:** *This is the only item you would reasonably change.*

6. Select **M** for **Modify**, then press **Enter**.
7. Select the application name, then change it to the new name.
8. Press **Enter** to accept the change.
9. Press the **Escape** key to return to the command line.

**Note:** *The command line is the list of screen commands. For example, Modify, User Defined, Quit, etc.*

10. Type **Q** for Quit.
11. Then press **Enter** until the following prompt displays: Do you want to save your changes (Y or N)?
12. Type **Y** for yes, then press **Enter**.  
The Administration Main Menu displays (Figure 3-10).

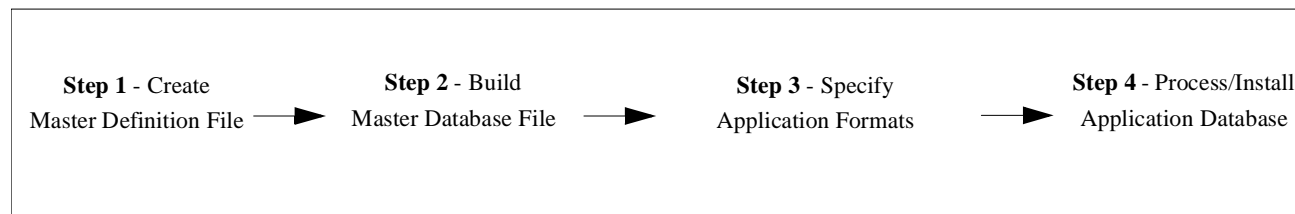


**Figure 3-10 Administration Main Menu**

The modification of the installed default configuration of the VFNA application is now complete.

## Database Requirements

Database creation involves the following 4-step process:



- **Step 1 - Create a Master Definition File:** This step involves creating the master definition file that defines the fields in the master database file.
- **Step 2 - Build a Master Database File:** This step involves entering data into the master database fields that were just defined in the master definition file in Step 1.
- **Step 3 - Create an Application Definition File:** In this step, a definition file is created for the master database. This file defines the formats by which data from the master file is to be converted to meet the needs of the VFNA application.
- **Step 4 - Process and Install the Application Database:** In this step, the Process and Install Application Databases option on the APM Database Administration menu creates the file that will be used by the VFNA application. When the Process option is activated, data is drawn from the master database and converted to the formats specified in the application definition file. The Install option is then activated to enable the VFNA application to copy its database.

This operating guide will approach the subject as follows:

- Looking at your Default Database
- Building a Master Database
  - Sample Database Entry
- Specifying the Application Database Field
- Processing the Application Database
- Installing the Application Database
- Ongoing Configuration Management Issues
  - Application Start-Up
  - User Tasks

### Looking at your Default Database

A template of the default form or scheme is automatically installed from the installation disk. Therefore, there is no need to build (define) a master database field for this application.

## Building a Master Database

After an application is installed and configured, the master database must be built. To build a master database, do the following.

1. Go to the System Administration screen ([Figure 3-11](#)).

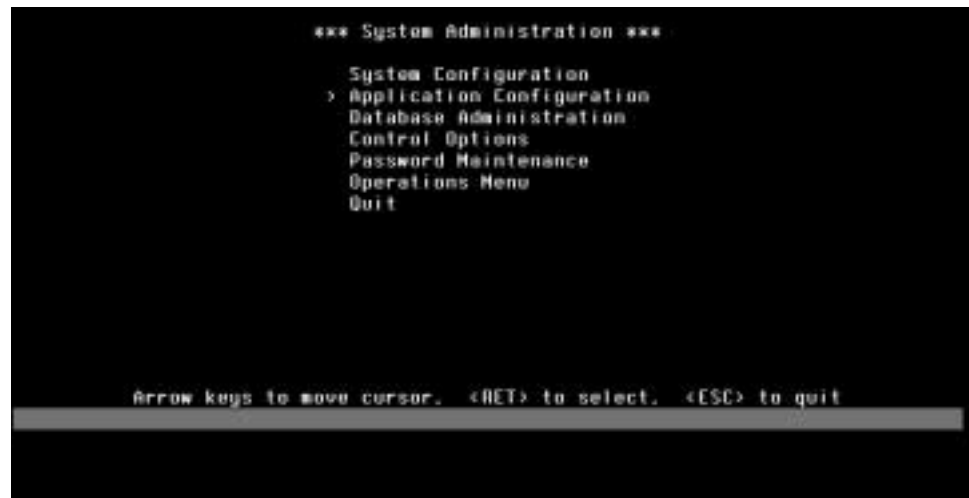


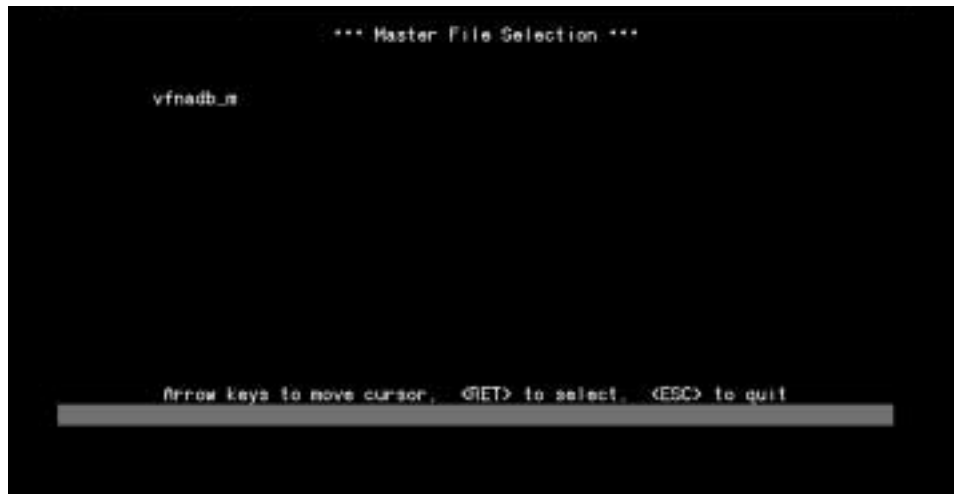
Figure 3-11 System Administration

2. In that screen, select **D** for **Database Administration**, then press **Enter**. The Database Administration screen displays ([Figure 3-12](#)).



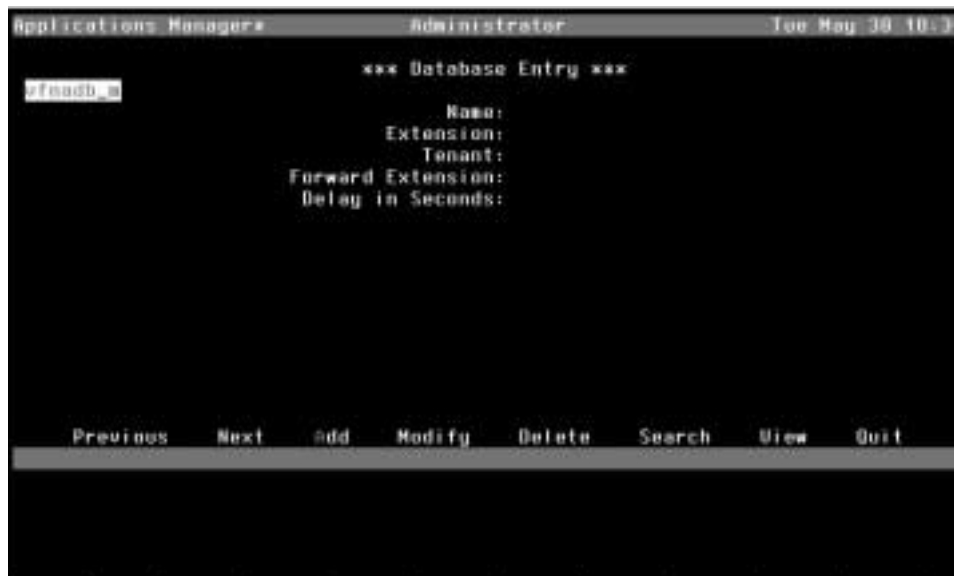
Figure 3-12 Database Administration

3. Press **B** for **Build Master Database**, then press **Enter**. The Master File Selection screen displays ([Figure 3-13](#)).



**Figure 3-13 Master File Selection**

4. At the Master File Selection screen, select **vfnadb\_m**, then press **Enter**. The vfnadb\_m Database Entry screen displays (Figure 3-14).



**Figure 3-14 vfnadb\_m Database Entry**

5. To create a new database entry, edit the master file by entering the Name, Extension, Tenant, Forward Extension, and Delay in Seconds.

**Note:** Press **A** to add another entry or **N** to go to the next entry.

6. Press **Q** for **Quit**, then press **Enter**.
7. Type **Y** for **Yes** to save changes.

## Sample Database Entry

This is a sample setting of a database entry:

```
Name = Test
Extension = 1000
Tenant = 1
Forward Extension = 2000
Delay in Seconds = 10 seconds
```

This sample setting means that if the phone extension is 1000, it will ring for 10 seconds. If it doesn't answer by then, VFNA will forward the call to extension station 2000. Variable Forward No Answer, in plain English, means that the VFNA database directs where and when to forward the call.

## Specifying the Application Database Field

The VFNA application database field has already been copied from the installation disk. Therefore, skip this procedure.

## Processing the Application Database

After building the master database, it must be processed before the application is able to use the data from the database.

To process the application database, do the following:

1. Go to the System Administration screen.  
The System Administration screen displays (Figure 3-15).

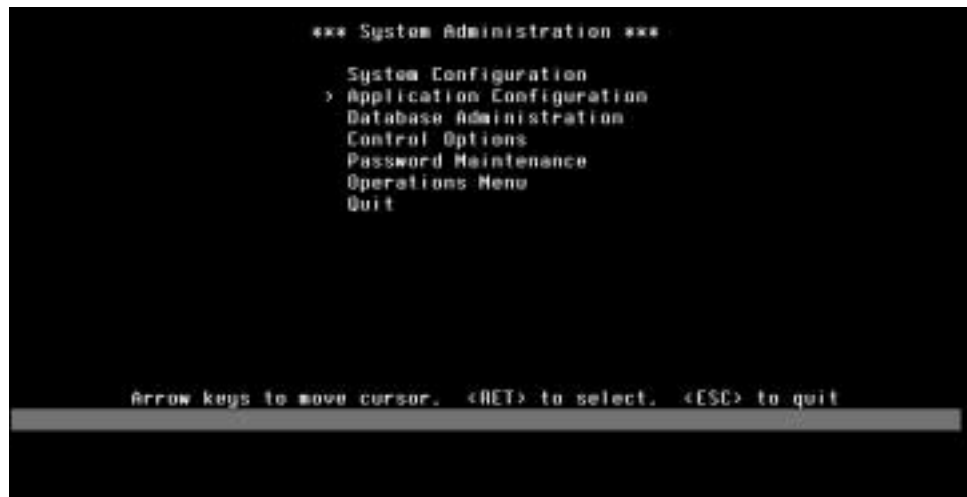


Figure 3-15 System Administration

2. In that screen, select **D** for **Database Administration**, then press **Enter**.  
The Database Administration screen displays (Figure 3-16).





Figure 3-16 Database Administration

3. Select **P** for **Process Application Database**, then press **Enter**.  
The Process Application Database screen displays (Figure 3-17).

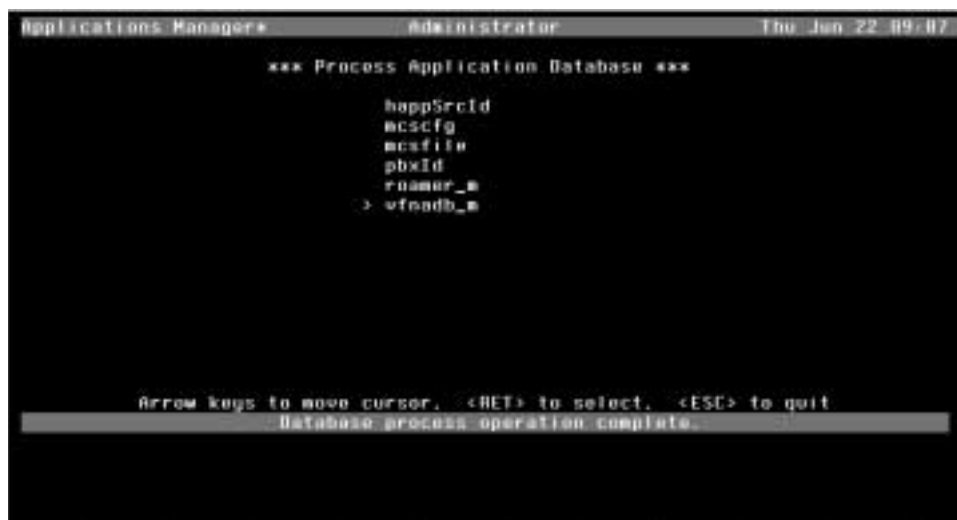


Figure 3-17 Process Application Database

4. Select **vfnadb\_m**, then press **Enter**.  
The message below the command line should then say: Database process operation complete.
5. Press **Escape** to exit.  
The Database Administration screen displays again (Figure 3-18).



Figure 3-18 Database Administration

## Installing the Application Database

1. In the Database Administration screen, select **I** for **Install Application Database**, then press **Enter**.  
The Install Application Database screen displays (Figure 3-19).

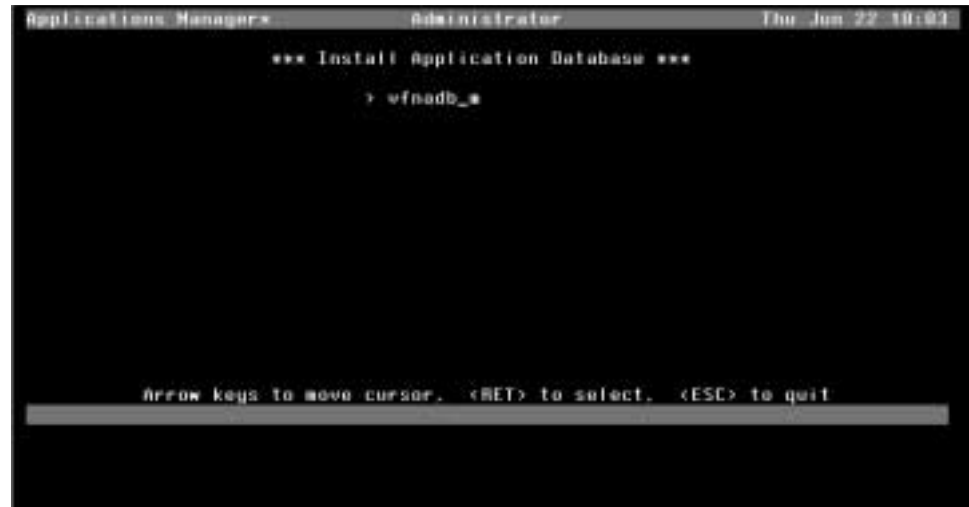


Figure 3-19 Install Application Database

2. Select **vfnadb\_m**, then press **Enter** to install.  
The application database is now installed.
3. Press **Escape**.  
The System Administration screen displays (Figure 3-20).

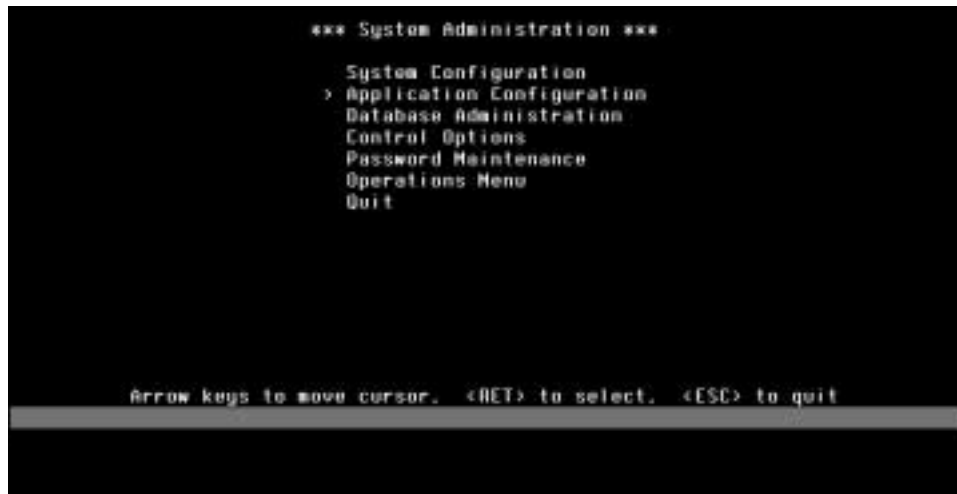


Figure 3-20 System Administration

## Ongoing Configuration Management Issues

To add a new phone number after installation, do the following:

1. Build the master database.
2. Add a new name.
3. Perform the Processing the Application Database procedure detailed above.
4. Then perform the Installing the Application Database procedure detailed above.

## Application Start-Up

The standard application start-up is as follows:

1. The server comes up.
2. The APM platform starts up.
3. The VFNA application initializes.

**Note:** *The assumption here is that the initialization batch option is set to Y. If it is set to N, the application must be started manually.*

To *manually* start the application, do the following:

**Note:** *The assumption here is that the initialization batch option is set to N.*

1. From the System Administration screen of the APM, select the Operations menu.
2. Verify that OAI is initialized by observing the top line of the display. The application manager should have an "\*" at the end of the name. If there is no "\*", select **Initialize OAI**, then press **Enter**.
3. Select **non-crt application control**.
4. Select **I** for **Initialize**, then press **Enter**.
5. Select **VFNA** by moving the cursor and pressing **Enter** to highlight **VFNA**.
6. Press **Escape**.
7. Press **Y** at the prompt: Initialize selected apps? (Y,N).

8. Press **Enter**.

## User Tasks

There is no user interface to this application. VFNA becomes active when the APM initializes the VFNA application. It must be maintained by the APM administrator. The administrator's duties would be to add, modify, and delete records to the VFNA APM database.

**Note:** *See the Data Requirements section for the fields required in the database.*

## Appendix A Glossary

### **APM (Applications Manager)**

The support platform (software) which resides on the UAP and provides the user with management capabilities within the Open Applications Interface system.

### **CCIS (Common Channel Interoffice Signalling)**

A protocol scheme used to form a network of NEAX2400 systems.

### **Dterm (Digital Terminal)**

An intelligent microprocessor-controlled device which supports feature capabilities offered by the NEAX2400 IMS.

### **IMG (Interface Module Group)**

The modular configuration of the NEAX2400 IMS that provides access to 736 ports for stations/trunks and other terminal devices.

### **IP (Interface Processor)**

A module within the NEAX2400 IMS which services the OAI system.

### **LCD (Liquid Crystal Display)**

The display screen on the Dterm telephone.

### **LED (Light-Emitting Diode)**

The lamp associated with a function key on a Dterm telephone, or the message waiting lamp on a single-line phone.

### **MAT (Maintenance Administration Terminal)**

Personal computer and menu-driven software used to access and manage the NEAX2400 IMS software and database.

### **MMG (Multiple Module Group)**

The modular configuration of the NEAX2400 IMS that provides access to at least 737 ports but not more than 5521 ports.

**OAI (Open Applications Interface)**

A proprietary protocol and set of routines that links the NEAX2400 IMS with a UAP. Programs executing on the UAP are able to monitor and control switch features and telephones.

**PBX (Private Branch Exchange)**

A digital voice and data communication system for large and small businesses, including hotels, hospitals, schools, and offices. NEC's PBX is the NEAX2400 IMS.

**UAP (User Application Processor)**

General purpose multi-tasking computer supporting System V UNIX and the Applications Manager running OAI.

**UMG (Ultra Module Group)**

The modular configuration of the NEAX2400 IMS that handles from 5,521 to 23,184 ports.