

Greco Systems

OmniDNC Operator's Manual



August 2008

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GS08/08

SAFETY

Protect yourself! Follow these precautions:

- **Never bypass the power cord ground lead by breaking off the ground pin, or by using inappropriate extension cords or adapters.**
- **Never plug the power cord into the AC power source until you have made sure that all installation, cabling, and power levels, are proper, and that the applicable procedures in this manual have been followed.**
- **Do not attempt to have this equipment repaired by under qualified personnel. Especially, personnel should be trained in working with hazardous voltages.**
- **Remove the AC power cord from the IEC inlet of the unit BEFORE removing the rear cover.**
- **Heed the WARNING statements. These statements point out situations that could cause injury or death.**
- **Heed the CAUTION statements. These statements point out the situations that could cause damage to the equipment.**
- **This instrument contains a LITHIUM BATTERY for timekeeping. Small quantities of these batteries may be disposed of as regular waste.**

HOWEVER: DISPOSAL BY FIRE, OR INCINERATION, SHOULD ALWAYS BE AVOIDED.

Prior to disposal: It is recommended that the leads of the battery be cut off and exposed metal poles be completely isolated with tape. Completely discharged or mechanically damaged cells should be wrapped in strong packing material.

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DOCUMENTATION POLICY

Disclaimer

This manual is based upon the data available at the time of publication. While sincere effort has been made to make the manual accurate, the information contained herein does not purport to cover all the details or variation in hardware, software, or firmware; nor to provide for every possible contingency in connection with the installation, operation, maintenance, repair or replacement. Also, features may be described herein which are not present in all hardware, software, or firmware configurations.

GRECO SYSTEMS' policy is one of continuous improvement. Thus, the information in this manual is subject to change without notice and should not be construed as a commitment by GRECO SYSTEMS. GRECO SYSTEMS also assumes no obligation to notify manual holder of subsequent revisions.

GRECO SYSTEMS makes no representation of warranty, expressed or implied, nor assumes responsibility for, the accuracy, completeness, sufficiency, or usefulness of this manual, nor of any problems that may arise from the use of the information contained herein.

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Acknowledgments

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WARRANTY

Policy

Greco Systems warrants that all products manufactured by Greco Systems conform to published specifications and are free from defects in materials and workmanship for a period of one (1) year from the date of delivery when used under normal operating conditions and within the service conditions for which they were furnished.

The obligation of Greco Systems arising from a warranty claim shall be limited to repairing, or at its option, replacing without charge, any product which in Greco Systems' sole opinion proves to be defective within the scope of the warranty. In the event Greco systems is not able to modify, repair or replace nonconforming defective parts to a condition per warranty within a reasonable time after receipt thereof, Greco Systems will refund the purchase price to the customer in return for the nonconforming or defective parts.

Greco systems must be notified in writing of the defect or nonconformity within the warranty period and the affected product returned to Greco Systems' factory or to an authorized service center within thirty (30) days after discovery of such defect or nonconformity.

For product warranties requiring return to Greco Systems, products must be returned to a service facility designated by Greco Systems. Buyer shall prepay shipping charges, taxes, duties and insurance for products returned to Greco Systems for warranty service.

Greco Systems shall have no responsibility hereunder for any defect or damage caused by improper storage, improper installation, unauthorized modification, misuse, neglect, inadequate maintenance, accident, or for any product that has been repaired or altered by anyone other than Greco Systems or its authorized representative and not in accordance with the instructions furnished by Greco Systems.

Exclusions

THE WARRANTY DESCRIBED ABOVE IS THE BUYER'S SOLE AND EXCLUSIVE REMEDY, AND NO OTHER WARRANTY, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED. GRECO SYSTEMS SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. No statement, representation, agreement or understanding, oral or written, made by an agent, distributor, representative or employee of Greco Systems, which is not contained in the forgoing Warranty will be binding upon Greco Systems, unless made in writing and executed by an authorized Greco Systems employee. Under no circumstances shall Greco Systems be liable for any direct, indirect, special, incidental or consequential damages, expenses, losses or delays (including loss of profits) based on contract, tort, or any other legal theory.

RETURN MATERIAL AUTHORIZATION

All equipment returned for Warranty repairs require a Return Material Authorization (RMA) number to be issued by Greco Systems prior to shipping the equipment. To obtain this number, the Buyer or End User **must** provide Greco with the following information:

- Greco Customer/End User name
- Greco Customer/End User contact and telephone number
- product model and serial numbers
- product cable numbers, if applicable
- description of the problem
- purchase order number for return shipping charges
- mode of return shipment.

For non-warranty repairs, the following additional information is required:

- purchase order number for repair charges and return shipping charges
- a “not to exceed” price
- whether to call with charges before shipping.

1 INTRODUCTION

Using This Guide

This document outlines the basic hardware and operating system of the Greco Systems OmniDNC. Operation of specific applications, such as WinDNC, WinDCS, EmbeddedDNC, and Eagle Editor are covered in the Operator Manuals for the specific software.

Overview

The OmniDNC is an industrialized PC compatible microcomputer device enclosed in a shop hardened case that can be used in locations that are normally too harsh for standard Network devices.

The OmniDNC is designed run on a network or as a standalone unit. The OmniDNC comes fully loaded with the latest EmbeddedDNC software and all necessary drivers.

Receiving Inspection

This section describes receiving inspection procedures. Any problems encountered while installing and configuring the OmniDNC can be solved by telephoning Greco Systems' Customer Service Department at (800) 234-7326, or (800) 23-GRECO.

Inspection Procedure:

1. Check the shipping carton for damage. If there are any signs of rough handling, save the carton for evidence. It is recommended that the shipping carton and padding be saved in the event the unit needs to be re-shipped.
2. Remove the OmniDNC from the carton by lifting the foam insulators, secured tightly around the sides of the unit. Lift it gently and remove the insulators. The AC power cord can be lifted out from within the foam insulators, as well.
3. Check the OmniDNC for any evidence of physical damage. If there are any signs of damage, notify the carrier.

CAUTION: do not operate the OmniDNC if it has been damaged during shipment. The OmniDNC could be further damaged and might also cause damage to electrical devices connected to it.

4. Check the contents of the shipping container or containers against the Packing List to ensure that all items are included.
5. Install the AC power adapter.

2 INSTALLATION AND CONFIGURATION

Overview

Unlike a simple network hub or switch, the setup of the OmniDNC will consist of connecting and configuring the serial port. If using the network capability of the OmniDNC, the setup will also require configuring and maintaining the Ethernet connection and creating/maintaining User Accounts for EmbeddedDNC network access.

Figure 1 specifies the connectors required for the cabling at the OmniDNC end. All cabling should be properly dressed to industrial standards.

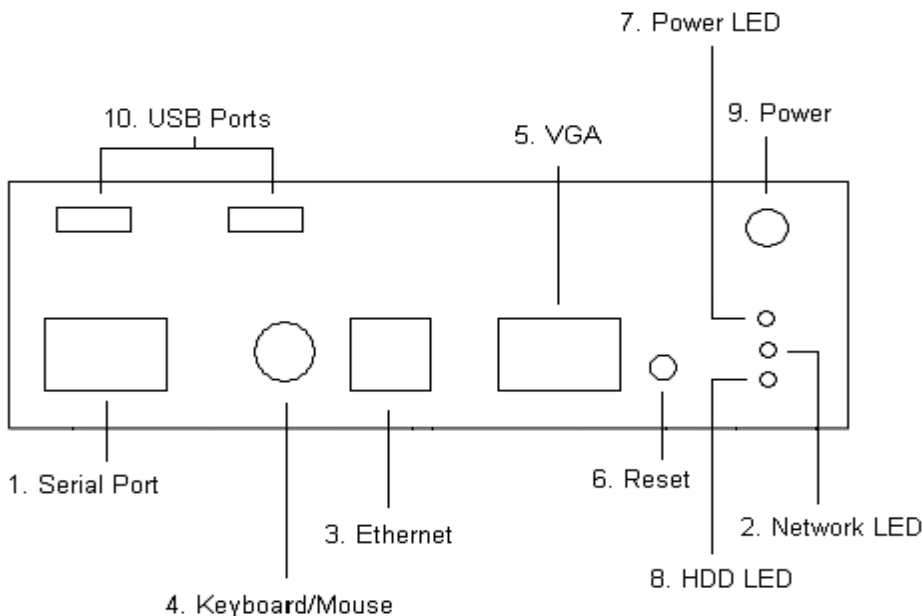


Figure 1. Front Connector Panel

Front Connector Details:

Additional connector details are listed below.

1. Serial Port.
2. Ethernet LEDs.
3. Ethernet. (RJ45, 100/10Base-T connector for Ethernet network connection).
4. Keyboard/Mouse.
5. VGA. (DB-9P. Video Graphics Adapter).
6. Reset Button.
7. Power LED.
8. HDD/Compact Flash LED.
9. Power Connector.
10. USB Ports.

Operational Check

Refer to the *Connector Panel* illustrations above, and make the necessary connections.

If any additional or special configuration is required (see *Configuration*, below), do that before continuing this procedure.

Check operation of the indicator LEDs on the front panel.

Start up one of the installed programs. Refer to the application's software manual if needed.

Configuration Changes

Greco Systems will make every effort to pre-configure the network settings on the OmniDNC for your network. If the network settings are not pre-configured, the following procedures are needed to change the network setting.

You will need the following information in order to re-configure the OmniDNC network settings:

- Static IP Address to be assigned to the OmniDNC or use a DHCP server (default: 192.168.1.1)
- Your network's Subnet Mask (for static IP Address only – default: 255.0.0.0)

- OmniDNC’s Computer Name (if different from the default: Serial Number “OMNI####”)
- OmniDNC Workgroup Name (if different from the default: “Workgroup”)

Procedure

The OmniDNC may be accessed directly or remotely for the initial configuration.

Direct Access

1. If you are going to directly configure the OmniDNC, plug the keyboard, mouse, and monitor connectors into the appropriate ports and proceed to step 3 below. Refer to *Figure 1*, the *Connector Panel* illustration, and the *Connector Details* listing, below.

Remote Access

1. If you are going to remotely configure the DNC, “Remote Desktop” will need to be installed on a Workstation. This can be found in the “*Remote Desktop*” folder on the OmniDNC CD. Copy the installation file from the “*Remote Desktop*” folder to the workstation that you want to install Remote Desktop on. If you are unable to do this, it can be downloaded from Microsoft’s website at <http://www.microsoft.com/windowsxp/pro/downloads/rdclientdl.asp>.

Note: *Remote Desktop access will only be needed for the purpose of Network configuration and maintaining EmbeddedDNC user accounts on the OmniDNC. Administrators should be the only users with Remote Desktop access.*

2. If the Network settings on the OmniDNC need changed to match your network (IP Address, Subnet Mask, and Workgroup), the settings on the workstation will have to be changed initially to match the OmniDNC.
3. Plug the AC power cord into the Power receptacle on the OmniDNC and the Network cable to the Ethernet port. Refer to *Figure 1*, the *Connector Panel* illustration, below.
4. Power on the OmniDNC. Wait 2 minutes to allow the OmniDNC to boot up before proceeding.
5. Log onto the OmniDNC using the “CustAdmin” user account. Refer to *Table 2*, the *User Accounts* descriptions, below.
6. At this point, the Network settings can be modified if necessary to match your network configuration. The addition and maintenance of User Accounts for EmbeddedDNC network access can be performed.

Enhanced Write Filtering

The OmniDNC is loaded with Microsoft Windows XP Embedded. The XP Embedded Operating System comes configured with Enhanced Write Filtering. EWF write protects the OmniDNC's flash, which contains the operating system. After configuring the OmniDNC operating system settings and prior to shutting down or restarting the unit, the setting changes must be stored onto the flash. If this is not done prior to shutting down or restarting the unit, the changes will be lost. *Table 1* lists and describes the DOS commands for Enhanced Write Filtering.

Command	Description
ewfmgr c:	Displays the current status
ewfmgr c: -enable	Enables enhanced write filtering
ewfmgr c: -commitanddisable -live	Disables enhanced write filtering
ewfmgr c: -commit	Saves changes to the flash

Table 1. Enhanced Write Filtering Commands

Configuration

The OmniDNC comes fully loaded with the latest EmbeddedDNC software suite and all necessary drivers. Should it ever become necessary to re-install the pre-installed software, this can be done across the network. The procedures for re-installing the applications software from the CD is explained in the software manuals supplied with the applications.

If a problem occurs requiring reloading one or more of the drivers, the drivers can be reloaded at the customer site from the network. Insert the disk with the required driver in a Network shared disk drive, then follow the directions and choose from the options that the install program displays on the screen.

Note: *These procedures should be performed only by qualified, System Administrator personnel, with Windows™ experience, preferably a Greco Systems representative.*

Default Network Settings

The network settings for the OmniDNC have been pre-configured to be a member of the “Workgroup” group with an **IP Address of 192.168.1.1** and a **subnet mask of 255.0.0.0**.

User Accounts

There is one user account that have been pre-defined and configured. *Table 2* lists the user account and its settings.

Username	Password	Group Membership	Description
CustAdmin	admin	Administrator	Administrator account for system configuration and creating user accounts. This is also the EmbeddedDNC Server account for accessing shared DNC files on Windows NT/2000/XP network systems. This account must be a member of the Administrators group since EmbeddedDNC Server runs as a System Service.

Table 2. User Account

Note: *These account passwords should be changed to insure proper security. Changing the “CustAdmin” account password will require changing the password in the DCOM Configuration Identity settings.*

Every user that needs access to the OmniDNC will need a user account created on the device.

DCOM Configuration

The DCOM configuration will be pre-configured by Greco Systems. The following figures will show the DCOM configuration items and their settings for the OmniDNC. The DCOM configuration can be accessed by running “*dcomcnfg*”. *Figure 2* illustrates the “*Component Services*” tree structure that will contain the DCOM Configuration. Under “*DCOM Config*”, right click “*ActiveDNC Server*” and select “*Properties*” to access the configuration for ActiveDNC.

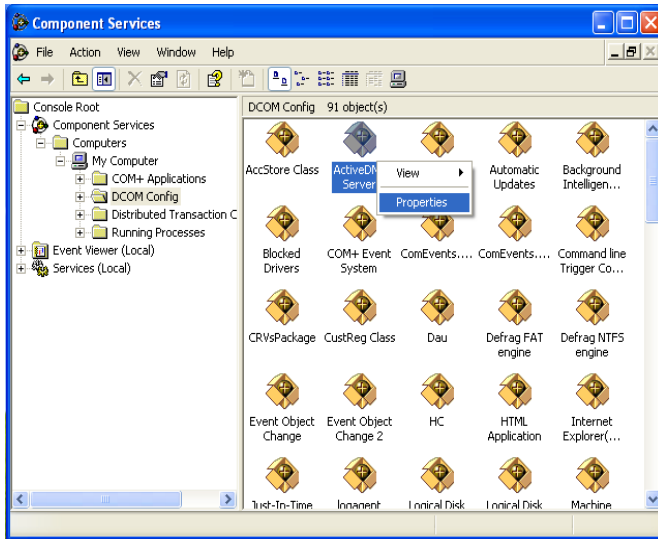


Figure 2. Component Services

Figures 3 – 8 display the DCOM Configuration settings for ActiveDNC. If the password for the “CustAdmin” user account is changed, the password in the “DCOM Configuration Identity” settings in Figure 8 will also need to be changed. Reboot the OmniDNC after making changes to the DCOM Configuration.

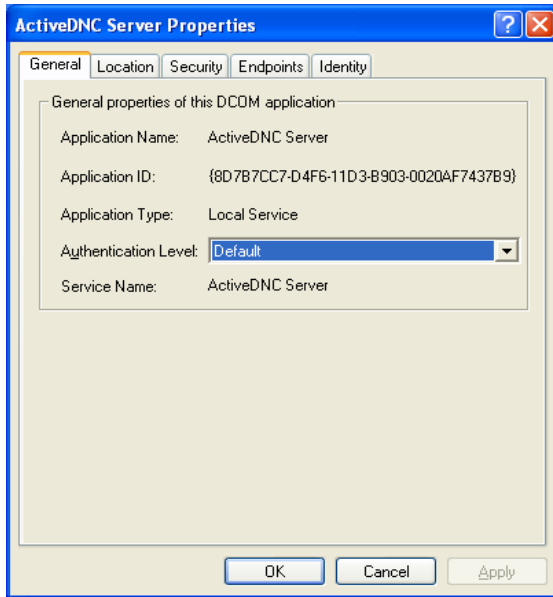


Figure 3. DCOM Configuration General Settings

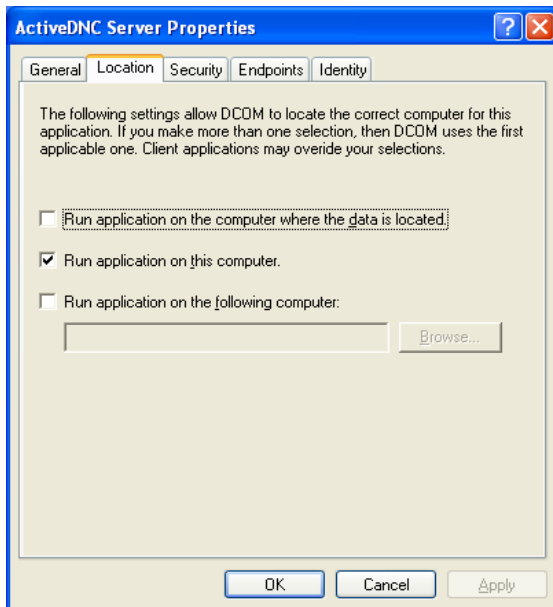


Figure 4. DCOM Configuration Location Settings

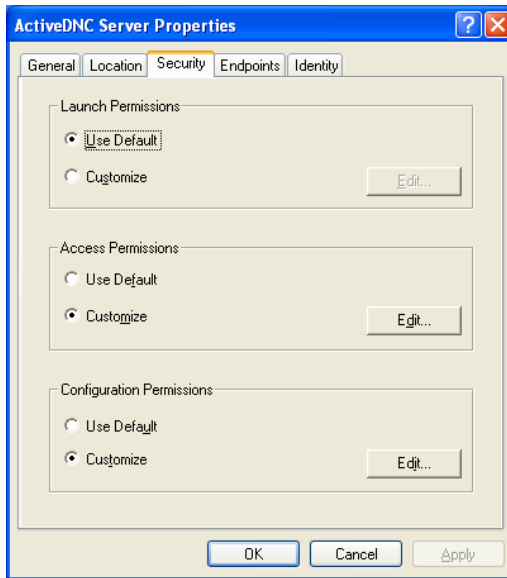


Figure 5. DCOM Configuration Security Settings

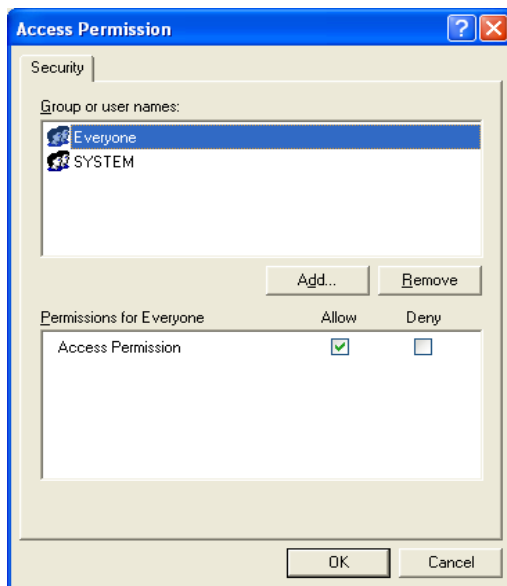


Figure 6. DCOM Configuration Custom Access Permissions

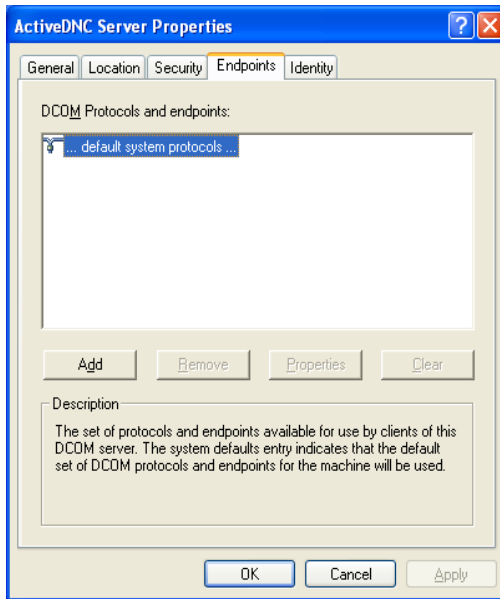


Figure 7. DCOM Configuration Endpoint Settings

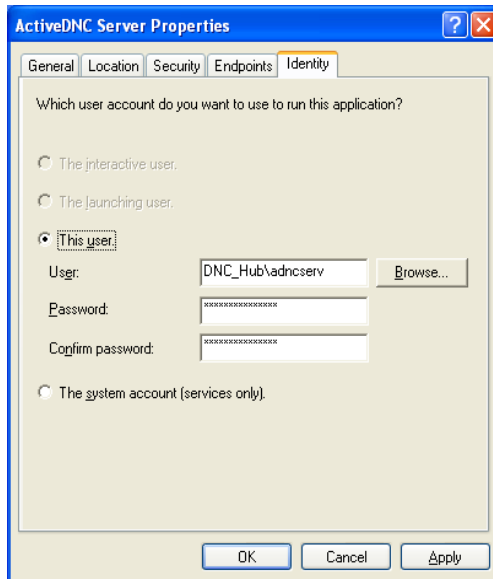


Figure 8. DCOM Configuration Identity Settings

Client Installation for Network Based Assess

EmbeddedDNC Server can be installed in several configurations. By default, everything is installed: the server, WinDNC.Net, EmbeddedDCS, e-DNC Explorer, the configuration program. The following will explain the installation and configuration process of EmbeddedDNC on client workstations. This process will allow client workstations to access the EmbeddedDNC server on the OmniDNC.

1. If installing on Windows 95, you must first install the DCOM95 or DCOM98 upgrade package. This is available directly from Microsoft. Windows 98/ME/NT/2000/XP already have it built-in, though the DCOM98 is an update for Windows 98. Whichever version you are running, installing the latest service pack is probably a good idea.
2. If installing on Windows NT/2000/XP, log in as Administrator. For Win95/98/ME, just log on.
3. Locate the setup.exe file on your EmbeddedDNC Server distribution media (typically a CD) and run it.
4. Answer the questions as they appear, and click “*Next*” as needed to proceed. You will select the Typical Installation, which installs everything.
5. After the setup program is finished, reboot the computer.
6. Since the server will reside on a different computer from the client, you must tell this client where to find the server. This is done in the Machine Configuration program by opening the “Start Menu\Program Files\EmbeddedDNC” and selecting “Machine Configuration”
7. Click on the “Add Hub” button and enter the network name of the OmniDNC. Then click on “Add”

Machine Configurations

The OmniDNC is designed to run only one configured machine. It is also designed to load and run a single machine from a USB drive during startup. The configuration files are stored on the OmniDNC in the “*C:\Program Files\e-DNC Explorer\ServerConfig*” folder. There are two types of configuration files. One is the OmniDNC configuration settings file: “*Config.gcs*”. The second file is the machine’s configuration file: “*<machinename>.gpe*”.

Network Operation

The creation of a machine configuration can be accomplished through the e-DNC Explorer client software that is installed on a network PC. Also, through “*Remote Desktop*”, you can log onto the OmniDNC and run the “*Start\All Programs\EmbeddedDNC\Machine Configuration*” utility directly on the unit.

When connecting the OmniDNC to a different machine, you must save the current machine configuration before preceeding to configure the OmniDNC to run with the new machine. This can be done, by logging onto the OmniDNC through “*Remote Desktop*” and copying the “*config.gcs*” and “*<machinename>.gpe*” files to a safe location for future reuse. At this point, the “*Machine Configuration*” utility can be used to remove the old machine and add the new machine. After all machine configurations have been created and saved, the “*<machinename>.gpe*” files can be interchanged on the OmniDNC. After copying the configuration files into the “*ServerConfig*” folder on the OmniDNC. The EmbeddedDNC Server must be restarted for the configuration to be loaded. This can be done by restarting the EmbeddedDNC Server Service or by rebooting the OmniDNC.

The OmniDNC is designed to load a machine configuration from a USB drive during boot up. The requirement for this is that the “*config.gcs*” and a single “*<machinename>.gpe*” file is at the root level of the USB drive.

Standalone Operation

There are two means by which to create a machine configuration for the OmniDNC. The first means can be accomplished by attaching a monitor, keyboard, and mouse to the OmniDNC. At this point, log on to the OmniDNC and run the “*Start\All Programs\EmbeddedDNC\Machine Configuration*” utility. When connecting the OmniDNC to a different machine, you must save the current machine configuration before preceeding to configure the OmniDNC to run with the new machine. This can be done, by copying the “*config.gcs*” and “*<machinename>.gpe*” files to a safe location for future reuse. At this point, the “*Machine Configuration*” utility can be used to remove the old machine and add the new machine. After all machine configurations have been created and saved, the “*<machinename>.gpe*” files can be interchanged on the OmniDNC. After copying the configuration files into the “*ServerConfig*” folder on the OmniDNC, the EmbeddedDNC Server must be restarted for the configuration to be loaded. This can be done by restarting the EmbeddedDNC Server Service or by rebooting the OmniDNC. The OmniDNC is also designed to load a machine’s configuration from a USB drive during boot up. The

requirement for this is that the “*config.gcs*” and “ a single “<*machinename*>.gpe” file is at the root level of the USB drive.

The second means of creating a machine configuration for the OmniDNC can be accomplished by installing the Standalone Machine Configuration utility on a workstation. This utility creates and organizes the configuration files. Since the OmniDNC is designed to load a machine’s configuration from a USB drive during boot up, the “*config.gcs*” and a single “<*machinename*>.gpe” file can be copied to the root level of a USB drive. Then connect the USB drive to the OmniDNC and then power up the OmniDNC. The machine configuration will be loaded during the startup process.

Remote Calldown

Since the OmniDNC is a headless device, the Remote Calldown feature will be the means by which files will be transferred between the machine control and the OmniDNC. Remote Calldown is when the machine operator sends a command from the machine control to the OmniDNC to have a file transferred to the control or saved to a file from the control. *Table 3* and *Table 4* describe the fields that are shown in *Figure 9*.

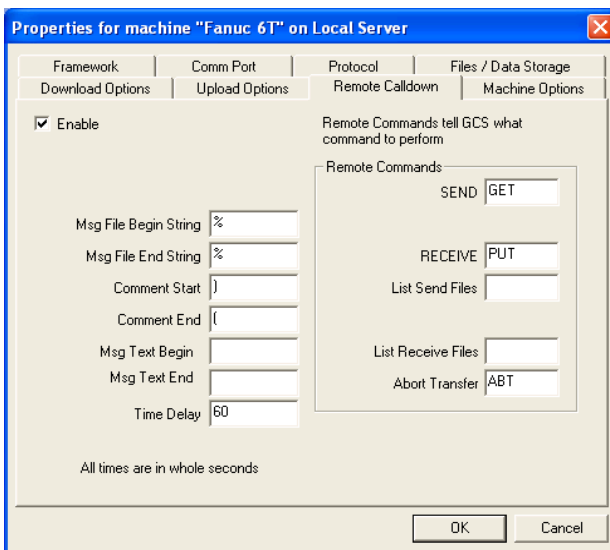


Figure 9. Remote Calldown Configuration Screen

Table 3 describes the Remote Command fields. These are the ASCII characters (strings) that the machine uses to communicate commands. Entering these strings in the appropriate fields in this dialog box teaches EmbeddedDNC Server to interpret these codes correctly.

SEND	<p>The command you want the system to interpret as a send or receive request. For example, an GET could be used for Send and PUT for Receive. When sent from the machine control with this string, EmbeddedDNC Server extracts the file name and sends this file to the machine control. Operator then sets the control into read mode, then either reads the file into memory or runs in drip feed mode. These commands must be unique and not duplicated in the command transmission</p> <p>Comment characters used for the Opening Comment Char and Closing Comment Char boxes must be in keeping with the part program instructions.</p>
RECEIVE	<p>This command has the same rules as the SEND command, except that the EmbeddedDNC Server opens a file on the server with the file name that follows the command. EmbeddedDNC Server then waits for the actual program to be sent. The part program sent from the machine control is saved in the receive directory that was defined for the machine.</p>
List Send files	<p>This string is interpreted as a directory listing request. EmbeddedDNC Server, upon receipt of this command, will send the machine control a listing of the machine's send directory. In most cases comment characters enclose each directory line. See CAUTION below.</p>
List Receive files	<p>This string is interpreted as a directory listing request. EmbeddedDNC Server, upon receipt of this command, will send the machine control a listing of the machine's receive directory. In most cases the comment characters enclose each directory line. See CAUTION below.</p>
Abort Transfer	<p>Enter the characters that will be recognized as the abort command to halt the file transfer.</p>
<p>CAUTION: (1) The listing sent might not be in a format your machine can read. (2) This is usually a large file. Your machine might not have enough memory.</p>	

Table 3. Remote Command Panel Descriptions

Table 4 describes the delineators. These are the ASCII characters that some machines use to differentiate between elements of the program having different functions. Entering these strings in the appropriate fields in this dialog box teaches EmbeddedDNC to interpret these codes correctly.

Msg File Begin String	Delineates a message from the EmbeddedDNC Server concerning the disposition or status of the operation. Any ASCII symbol desired, as long as it matches part program format requirements. For example, a % sign may be required for the machine control to recognize this as a program.
Msg File End String	
Opening Comment Character	Define the machine's starting and ending comment characters. Used with any of the DIR, Send and Receive commands. When sending to the machine control, these characters are at the start and end of every line in the directory listing that is sent to the machine control. When a transfer is requested from the machine control, the character preceding the closing comment character will be the end of the file name.
Closing Comment Character	
Time Delay	Enter the time, in seconds, that the system will wait before executing a command to send data. This allows time for the machine control to be readied to receive the part program.

Table 4. Delineators Panel Description

The following are examples of Remote Calldown commands that are sent from the Machine Control to the OmniDNC.

Example - Command from the Machine Control to receive program.txt from EmbeddedDNC:

```
%
(GETprogram.txt)
%
```

Example - Command from the Machine Control to send a program to be saved on the network as savedprogram.txt:

```
%
(PUTsavedprogram.txt)
%
```


3 OPERATION

Initial Powerup

- Before powering up the OmniDNC, make sure it is installed and wired correctly. See *Section II, Installation* if necessary.
- Turn the unit ON by plugging the power cord into it. See *Section II, Installation*, if necessary.

Normal Operation

The OmniDNC is pre-loaded with the EmbeddedDNC software.

- All workstations connecting to the OmniDNC will need the EmbeddedDNC software installed and configured for client functionality.
- Refer to the manual supplied with the software program you are using.
- Follow the instructions in the software manual, while paying careful attention to any Hints, Notes and Precautions.

4 MAINTENANCE

Cleaning

Cleaning the Exterior Surfaces

1. Carefully clean the screen and outer surfaces, making certain no dampness seeps into the interior of the instrument.
2. Go over the same area with a clean, damp cloth to remove detergent and any remaining dirt.
3. Dry the instrument with a clean, dry, lint-free cloth.

Repair

Field repair of the OmniDNC is not recommended. If the instrument is still in warranty, ALWAYS return it immediately to Greco Systems for repair TO KEEP THE WARRANTY IN EFFECT. If the instrument is no longer under warranty, it is still best to return it to Greco Systems for repair. (See *Return Shipment* below.)

There are no fuses accessible from the outside of the chassis. If the unit will not power up, it should be considered in need of repair, and it should be returned to Greco Systems for service, as outlined above.

Return Shipment

Return Material Authorization

Before returning the OmniDNC, a Return Material Authorization number should be obtained from Greco Systems. (See *Return Material Authorization Procedures* in the front matter of this manual.)

Repackaging Materials

If the original packaging was saved, repack the unit in the original container, foam insulators, bags, and padding. Use the *Repackaging Procedure* below as a guide, but skip steps that do not apply.

If the original packaging is not available, follow the *Repackaging Procedure* exactly.

Note: *In-transit damage is not covered by Greco Systems.*

Repackaging Procedure

1. Disconnect the power cord and all cables, place them in a clean plastic bag, and tape the bag shut.
2. Place the OmniDNC in a clean plastic bag, and tape the bag shut.
3. Tape the bag containing the cables to the top of the bagged instrument.
4. Place the original foam pads in place around the bagged instrument, or tape a strip of cardboard completely around the bagged instrument to protect all surfaces.
5. Place the instrument in the original container, if possible; or place it in the center of a strong container, with at least six inches of loose Styrofoam (or equivalent) pellets completely surrounding the instrument.
6. Place all paperwork in a separate bag, and place it with the other contents, away from the sides of the container, where it cannot be damaged when the box is opened.
7. Prepare the shipping label before sealing the container. Be sure to include the Return Materials Authorization number on the label.
8. Seal the container with strong packing tape, mark it FRAGILE on all sides, and affix the shipping label.
9. Ensure that the shipment is sufficiently insured to cover all costs if it is damaged or lost.
10. Ship the package by prepaid freight to:

**e-DNC Inc. / Greco Systems Division
448 N. Hwy 89 Suite E
Chino Valley, AZ 86323**

APPENDIX A

SPECIFICATIONS

CPU

- 533 MHz Pentium MMX

SYSTEM MEMORY

- 256 MB RAM

FEATURES

- Windows XP Embedded
- Positive pressure enclosure

CONNECTORS

- DB9 serial ports, COM1
- PS/2 keyboard/mouse connector
- RJ45 Ethernet 100/10BaseT connector
- AC Power 110/230 V AC (automatically switching)

DIMENSIONS

- Height: 2.5"
- Width: 6.5"
- Depth: 4.5"

POWER REQUIREMENTS

- 110/230 V ac
- 60 W

FUSE

Soldered to power supply.

OPERATING TEMPERATURE

- 0-45 °C

STORAGE TEMPERATURE

- -25 TO 60 °C

Notes