

# Ethernet Printer Programmer's Guide



## **Audience**

This guide is for the system administrator or programmer using the network printer.

## **Applicable Models**

All Del Sol and Advantage network e+Solutions™ enabled printers.

**Cognitive**

## Guide Conventions

Notes and important comments are highlighted respectively with a border line and red text.

**Note:** *Contains information that helps prevent errors and provides tips on where to find additional information.*

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**Important:** *Indicates procedures and comments that must be followed or the software and/or printer could be misconfigured.*

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This document is for a system administrator to follow and use as a guide to configure Cognitive's network printers. It is not designed for an average user.

## Related Publications

Visit [www.cognitive.com](http://www.cognitive.com) to download these and other Cognitive documents.

- Cognitive Printers *Programmer's Guide*, includes Cognitive Programming Language (CPL) syntax (part number 105-008-01)
- *Network Printer Setup Guide* (part number 191-017-01)
- *BOOTP Configuration Guide* (part number 195-126-100)
- *inControl™ User's Guide* (part number 105-022-01)
- *Quick Start Guide* specific to the printer (part number varies with printer model)

## Programming Overview

Bar code printers are programmable devices. Most Cognitive printers use the same command language, which has become an industry standard. Cognitive's Ethernet printers accept a series of Variable Ethernet commands specific to this line of printers. These commands and other Ethernet functions are explained in this document.

In typical label printing applications, simple ASCII commands control the printer. These commands are written to files called label formats. When sent to the printer, each label format tells the printer how to produce one or more labels.

One label format can print many similar labels. Label formats may be sent to the printer individually or in batches in multiple file uploads. Several different ASCII label formats may be combined in a single file, with each format capable of producing a different label.

This document describes the VARIABLE ETHERNET commands used specifically to configure ethernet enabled printers via label format files. Additional information regarding general programming options, ASCII and graphics commands used to create label formats, stored objects and menus appears in the *Programmer's Guide*.

Cognitive's e+Solutions printers are designed to work with any ethernet network using TCP/IP. Cognitive enables networking features by default. Use the commands detailed in this document to change the default settings.

***Important:*** *Read these instructions carefully and refer to other manuals as needed to support the host system.*

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***Note:*** *Use the Cognitive inControl software to configure the printer without using the programming commands. A standard version of inControl is available on the printer's companion CD-ROM shipped with all standard e+Solutions printers.*

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***Contact Cognitive or visit our web site, [www.cognitive.com](http://www.cognitive.com), for additional information.***

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# Command Syntax

## Command Syntax

Command descriptions throughout this document use only the explicit form.

The command descriptions contain the following elements:

### COMMAND NAME

**Function:** The purpose of the command.

**Command Form:** COMMAND syntax

**Parameters:** List any required or optional parameters included in the command syntax and the default values for variable elements of the syntax.

**Comments:** Any additional comments relating to command usage.

**See Also:** Lists related commands.

**Example:**

```
SAMPLE PROGRAM CODE APPEARS HERE ILLUSTRATING PROPER  
COMMAND USAGE
```

*Note: The example code shown throughout this document does not always include all the lines in the label format file. For example, you may combine multiple commands in a single file for execution.*

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## Programming Rules

- Use blank spaces exactly as shown in the command descriptions, examples and syntax. Blank spaces are the delimiters between parameters. Omitting a necessary space may cause incorrect programming or a command recognition failure.
- Do not send extraneous control characters to the printer.
- End every command line with a line feed or a carriage return and line feed.
- All of the VARIABLE ETHERNET commands discussed in this document require a special header line, VARIABLE READ, VARIABLE WRITE, VARIABLE ETHERNET RESET and an END statement as shown in the following format:

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET ...
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

**Note:** *VARIABLE READ and VARIABLE WRITE commands are discussed in the Programmer's Guide.*

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- An indented second command line indicates a continuation of the previous line and should not include a carriage return but only a space between parameters, for example:

```
VARIABLE ETHERNET FIRMWARE 195-113-217 V2.17
    /tftpboot/195113.217
```

- Enter all VARIABLE ETHERNET commands in uppercase letters.
- Place any VARIABLE ETHERNET commands immediately after the header line in the label format file.
- Enter all VARIABLE ETHERNET commands exactly as shown.
- VARIABLE may be abbreviated as V, but do not use any other abbreviations unless specifically allowed in the command description.

**Important:** *Use all VARIABLE ETHERNET commands with care since they can change the data in the printer's nonvolatile RAM.*

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**Note:** *Not all printers support all commands, and there may be some variation in command usage depending upon the printer model. For example, non-ethernet printers do not support VARIABLE ETHERNET commands. Review the printer's quickstart guide and the Programmer's Guide for additional information on compatibility.*

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# Variable Ethernet Commands

## BOOTP

**Function:** The VARIABLE ETHERNET BOOTP command toggles BOOTP on and off.

**Command Form:** VARIABLE ETHERNET BOOTP status

**Parameters:** ON / OFF (default is ON)

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET BOOTP ON
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## FIRMWARE

**Function:** Used in conjunction with BOOTP, the VARIABLE ETHERNET FIRMWARE command automatically updates the printer firmware.

**Command Form:** VARIABLE ETHERNET FIRMWARE p r f s

**Parameters:** p: specifies the part number of the installed firmware,  
r: specifies the firmware revision,  
f: specifies the filename and directory path where the firmware is located,  
s: specifies the server IP address where the firmware is located

**Comments:** Firmware part numbers and version numbers may change. Check with your Cognitive representative or [www.cognitive.com/firmware](http://www.cognitive.com/firmware) for current information.

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET FIRMWARE 195-113-217 V2.17
      /tftpboot/195113.217 130.10.103.106
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

**Note:** *Additional information on BOOTP firmware updates is located in the BOOTP Configuration Guide.*

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# Variable Ethernet Commands

## GATEWAY

**Function:** The VARIABLE ETHERNET GATEWAY command establishes the Gateway address.

**Command Form:** VARIABLE ETHERNET GATEWAY X.X.X.X

**Parameters:** X.X.X.X, where X is a value between 0 and 255 (default is 0.0.0.0)

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET GATEWAY 8.9.9.123
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## HEXDUMP

**Function:** The VARIABLE ETHERNET HEXDUMP command causes the printer to print input from the Ethernet port directly to the print head label.

**Command Form:** VARIABLE ETHERNET HEXDUMP status

**Parameters:** ON / OFF (default is OFF)

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET HEXDUMP OFF
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## IP (ADDRESS)

**Function:** The VARIABLE ETHERNET IP command sets the IP Address.

**Command Form:** VARIABLE ETHERNET IP X.X.X.X

**Parameters:** X.X.X.X, where X is a value between 0 and 255 (default is 0.0.0.0)

**Comments:** The IP command will not work if BOOTP is enabled.

# Variable Ethernet Commands

## Example:

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET IP 130.10.1.6
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## LPD

**Function:** The VARIABLE ETHERNET LPD command toggles LPD on and off.

**Command Form:** VARIABLE ETHERNET LPD status

**Parameters:** ON / OFF (default is ON)

## Example:

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET LPD ON
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## NETMASK

**Function:** The VARIABLE ETHERNET NETMASK command establishes the Netmask value.

**Command Form:** VARIABLE ETHERNET NETMASK X.X.X.X

**Parameters:** X.X.X.X, where X is a value between 0 and 255 (default is 0.0.0.0)

## Example:

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET NETMASK 255.255.0.0
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```



# Variable Ethernet Commands

## RESET

**Function:** The VARIABLE ETHERNET RESET command initiates current variable commands for the printer.

**Command Form:** VARIABLE ETHERNET RESET

**Parameters:** No Parameters.

**Comments:** The VARIABLE ETHERNET RESET command must follow any VARIABLE ETHERNET commands to effect the change.

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET BOOTP ON
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## RTEL

**Function:** The VARIABLE ETHERNET RTEL command enables or disables reverse telnet communications with the printer.

**Command Form:** VARIABLE ETHERNET RTEL status

**Parameters:** ON / OFF (default is ON)

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET RTEL ON
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

# Variable Ethernet Commands

## RTEL PORT

**Function:** The VARIABLE ETHERNET RTEL PORT command sets the reverse telnet port address.

**Command Form:** VARIABLE ETHERNET RTEL PORT X

**Parameters:** X (default is 9100)

**Comments:** Changes to this value are not recommended.

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET RTEL PORT 9100
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

## TELNET

**Function:** The VARIABLE ETHERNET TELNET command enables or disables Telnet communications with the printer.

**Command Form:** VARIABLE ETHERNET TELNET status

**Parameters:** ON / OFF (default is ON)

**Example:**

```
! 0 0 0 0
VARIABLE READ
VARIABLE ETHERNET TELNET ON
VARIABLE WRITE
VARIABLE ETHERNET RESET
END
```

# Cognitive Information

## USA

691 Corporate Circle  
Golden, CO 80401  
Tel: +1 303 273 1400  
Toll free: +1 800 525 2785  
Fax: +1 303 273 1414  
sales@cognitive.com

## Europe

Atlantic Street  
Altrincham  
Cheshire  
WA14 5QJ UK  
Tel: +44 161 929 9933  
Fax: +44 161 927 7664  
europesales@cognitive.com

## Asia-Pacific

PO Box 726  
Level 3, 39 Leighton Place  
Hornsby NSW 2077 Australia  
Tel: +61 2 9477 1999  
Fax: +61 2 9477 1453  
asiasales@cognitive.com

## Japan

2-23-2 Higashi-Ikebukuro  
Toshima-KU  
Tokyo 170 Japan  
Tel: +81 135 391 7689  
Fax: +81 135 391 7692  
japansales@cognitive.com

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TEL 303-273-1400 TOLL FREE 800-525-2785 FAX 303-273-1414

691 Corporate Circle Golden, CO 80401

PN: 195-127-100 Rev A