B.A.S.I.S. ISC Network Communication
Configuring an ISC BAS-ETHLAN (Ethernet Controller)
Serial Connection
MSS-1, MSS-100

(A NULL MODEM CABLE IS REQUIRED)

Step 1 - Establish Serial Communication with ETHLAN

1. With the power OFF to the ETHLAN devices, establish a serial connection from the ETHLAN to the PC’s Serial Communication Port, for example, using Hyperterminal. (A Null Modem cable is required).

2. Start Terminal.

3. Change the Communication settings to 9600 baud, 8 data bits, 1 stop bit, and parity none.

4. Plug in power to the ETHLAN. The following messages should appear in the terminal window:

   Lantronix MSS1 Initialization…
   Ethernet Address: 00-80-a3-0f-07-34 Internet Address (undefined)
   Flash Rom Version 1.0 (Oct 9, 1995)
   Flash Version: V3.4/1 (960401)
   Current Diagnostics report:
   NVR Config: Normal Ram Size: 256 KB
   CPU Speed: 10 MHz Gate Array: Rev 15
   Flash Version: V3.4/1 (960401)
   Errors: None
   Request BOOTP: no valid reply received.
   Request RARP: no valid reply received.
   Checking 2 sections from flash:
   From address 0x20004 to 0x20018, 268872 bytes)Æ not copied.
   From address 0x61a60 to 0x210000, 9006 bytes)Æ copied.
   Loaded 277878 bytes.
   Load Completed – Boot in Progress

5. At this point, press <Enter>. (It may take a few seconds to complete booting). **Note:** If it appears that nothing changes after pressing <Enter>, it is possible that the Lantronix MSS1 device was already configured once. If this occurs, you need to press the <Enter> key before the phrase, “Load Completed – Boot in Progress” appears. If this still does not allow you to enter into the command mode, you may also telnet into the Lantronics device.

6. You will be prompted for user name. Enter any name.

Step 2 Establishing Network Communications:

1. Determine the IP Address for the device.

2. At prompt, type `set priv` and press <Enter>.

3. Type in the password `system` and press <Enter>. (Password will not echo)

4. Type `change ipaddress [your IP address]` and press <Enter>. (Do not use brackets)

5. Type `change flow control ctsrts` and press <Enter>.

6. Type `change dedicated tcp port=3001` and press <Enter>.

7. Type `change access remote` and press <Enter>.
8. Type `change subnet mask [your subnet mask]` and press <Enter>. (Do not use brackets)

9. Type `change gateway [your gateway]` and press <Enter>. (Do not use brackets)

10. Type `change bootp disabled` and press <Enter>.

11. Type `change timeserver disabled` and press <Enter>.

12. Type `change snmp disabled` and press <Enter>.

13. Type `change netware disabled` and press <Enter>.

14. Type `change dhcp disabled` and press <Enter>.

15. Type `change httpserver disabled` and press <Enter>.

16. Type `change wins disabled` and press <Enter>.

17. Type `change signal check disabled` and press <Enter>.

18. Type `change rarp disabled` and press <Enter>.

19. Type `change speed 38400` and press <Enter>.

20. Disconnect from the device and exit. (After pressing <Enter> at #19, you will be disconnected)

21. Recycle power to the device in order for the settings to take effect.

22. Connect the device to the ISC observing the correct cabling requirements.

23. At this point, make sure that dipswitches 5, 6, & 7 are ON for the ISC. Confirm that dipswitch 8 is OFF.

24. To verify that the device is talking on the network you can “ping” the device from a DOS command prompt by typing `ping [IP address]`

25. Confirm that the firmware is at least **Version 3.6** or higher ["Show Server" in a Telnet session].

26. Configuration settings can be confirmed through the use of the “Show Ports” command in a Telnet session.

<table>
<thead>
<tr>
<th>ISC</th>
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</tr>
<tr>
<td>RTS/R1+</td>
<td>not used</td>
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</tr>
<tr>
<td>CTS/R1-</td>
<td>pin 7</td>
<td>pin 4</td>
</tr>
<tr>
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Configuring an ISC BAS-ETHLAN (Ethernet Controller) Network Connection
MSS-1, MSS-100, MSS-Lite

(An X-cable, network hub, or live network connection is required)

Step 1 – Programming an IP Address into the ETHLAN
1. Install EZWebCon on the programming computer. This utility can be found on the CD that is packaged with the device or on the Lantronix website at www.lantronix.com.
2. Obtain the MAC or Hardware address of the ETHLAN device. This address can be found somewhere on the board or casing of the device.
3. Obtain an IP address, subnet mask, and gateway from the network administrator at the customer site.
4. Program an IP address into the ETHLAN device using EZWebCon. The actual steps may vary due to the version of EZWebCon used.
5. Ping the ETHLAN device to confirm IP configuration.

Step 2 – Setting ETHLAN Communication Parameters

- MSS-Lite
  1. Start telnet.
  2. At prompt, type set priv and press <Enter>.
  3. Type in the password system and press <Enter>. (Password will not echo)
  4. Type change flow control ctsrts and press <Enter>.
  5. Type change dedicated tcp port=3001 and press <Enter>.
  6. Type change access remote and press <Enter>.
  7. Type change subnet mask [your subnet mask] and press <Enter>. (Do not use brackets)
  8. Type change gateway [your gateway] and press <Enter>. (Do not use brackets)
  9. Type change bootp disabled and press <Enter>.
  10. Type change timeserver disabled and press <Enter>.
  11. Type change snmp disabled and press <Enter>.
  12. Type change netware disabled and press <Enter>.
  13. Type change dhcp disabled and press <Enter>.
  14. Type change httpserver disabled and press <Enter>.
  15. Type change wins disabled and press <Enter>.
  16. Type change signal check disabled and press <Enter>.
  17. Type change rarp disabled and press <Enter>.
  18. Type change speed 38400 and press <Enter>.
  19. Disconnect from the device.
  20. Recycle power to the device in order for the settings to take effect.
  21. Connect the device to the ISC observing the correct cabling requirements.
  22. Confirm that dipswitches 5,6,& 7 are ON for the ISC. Confirm that dipswitch 8 is OFF.

- MSS-100
  13. Type change dhcp disabled and press <Enter>.
  14. Type change httpserver disabled and press <Enter>.
  15. Type change wins disabled and press <Enter>.
  16. Type change signal check disabled and press <Enter>.
  17. Type change rarp disabled and press <Enter>.
  18. Type change speed 38400 and press <Enter>.
  19. Disconnect from the device.
  20. Recycle power to the device in order for the settings to take effect.
  21. Connect the device to the ISC observing the correct cabling requirements.
  22. Confirm that dipswitches 5,6,& 7 are ON for the ISC. Confirm that dipswitch 8 is OFF.

Command may return in error if firmware is not 3.6 or higher
23. Confirm that the firmware is at least **Version 3.6** or higher ["Show Server" in a Telnet session].

24. Configuration settings can be confirmed through the use of the “Show Ports” command in a Telnet session.

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Configuring a COBOX-MICRO (Micro Serial Server)  
Network Connection 
Cobox-Micro and UDS10

Overview

The CoBox-Micro device plugs directly onto the BAS–2000 ISC and the BAS–500 ISC. *(This method of communication has not been evaluated by UL).* Jumper J13 must be in the OFF position for the device to communicate on the BAS–500, and jumper J26 must be in the OFF position for the device to communicate with the BAS–2000. If the jumpers are not configured correctly, the ISC will not see the CoBox-Micro.

The CoBox-Micro should be labeled with its Ethernet/Hardware address (example: 00-20-4a-2b-02-3b). Locate and record this address for later use.

**Note:** The Cobox-Micro can only communicate on a 10 base-T network. If the device is connected through a 100 base-T only network connection it will not communicate.

Assigning an IP Address

Assign a TCP/IP address over the network by using the ARP utility or the DST Configuration utility by Lantronix *(The DST utility can be obtained from www.lantronix.com and a description of the program can be found at the end of this document).* When using the DST Configuration Utility to assign an IP address, the PC that has the utility installed must be on the same local subnet as the device server.

All other functions work across multiple networks, provided your particular settings allow it. The following steps refer only to assigning an IP Address using the ARP utility.

To perform the ARP function, the ARP table on the Windows PC must have at least one IP address defined other than its own.

1. At the DOS command prompt, type `arp -a` to verify that there is at least one entry in the ARP table. If the ARP table is empty, the command will return an error message saying that the ARP table addition failed. If there is at least one entry, proceed to step #3.

2. If no entry is listed in the ARP table besides the local machine, ping another IP machine on the network to build the ARP table. You must ping a host other than the machine on which you are working.

3. After the entry is listed in the ARP table, use the following command to ARP the IP address. `arp –s[IP Address] [Ethernet/Hardware Address]` Do not include brackets in this command.
The IP address is the numerical address (example: 192.168.002.203) and the Ethernet/Hardware Address is the address labeled on the Micro Serial Server device (example: 00-20-4a-2b-02-3b). Do not include the brackets in the command.

4. Telnet to the assigned IP address and port 1, this action should fail quickly (2-3 seconds). This action will force the CoBox-Micro to take the newly assigned IP address temporarily. `telnet [IP Address] 1`

5. Telnet into the IP address to complete the rest of the device configuration. `telnet [IP Address] 9999`

**Note:** The CoBox-Micro will not save this learned IP address permanently. This procedure is intended as a temporary measure to allow an administrator to Telnet into the CoBox-Micro for configuration. Steps 4 and 5 have to be performed quickly after each other.

The following steps are common to either an ARP or DST configuration.

Configuring a CoBox-Micro using Telnet

1. From the DOS prompt, type the following to enter the CoBox-Micro configuration menu: `telnet [IP Address] 9999`

This command will open the IP Address using port 9999, which is reserved for configuration. Once the port is open, choose option “0” for Server configuration. See figure below.
2. Enter the IP Address for the device in the form of 10.11.12.13. The currently configured address will appear as you type each part of the IP address. Continue to type the IP Address until all fields are completed.

3. A prompt will appear to set the Gateway IP. Answer yes and type the Gateway IP address in the same manner as described for the IP Address entry. Again the current configuration information will display at each segment of the IP address.

4. A prompt will appear to set the Subnet Mask. The Subnet Mask is not entered in the same manner as described for IP Address and Gateway. The following table is used to determine the two-digit number required for this field.

<table>
<thead>
<tr>
<th>Subnet Mask</th>
<th>Two-Digit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>255.255.255.252</td>
<td>02</td>
</tr>
<tr>
<td>255.255.255.248</td>
<td>03</td>
</tr>
<tr>
<td>255.255.255.240</td>
<td>04</td>
</tr>
<tr>
<td>255.255.255.224</td>
<td>05</td>
</tr>
<tr>
<td>255.255.255.192</td>
<td>06</td>
</tr>
<tr>
<td>255.255.255.128</td>
<td>07</td>
</tr>
<tr>
<td>255.255.255.0</td>
<td>10</td>
</tr>
<tr>
<td>255.255.254.0</td>
<td>08</td>
</tr>
<tr>
<td>255.255.252.0</td>
<td>09</td>
</tr>
<tr>
<td>255.255.252.0</td>
<td>11</td>
</tr>
<tr>
<td>255.255.248.0</td>
<td>12</td>
</tr>
<tr>
<td>255.255.192.0</td>
<td>13</td>
</tr>
<tr>
<td>255.254.0.0</td>
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<tr>
<td>255.252.0.0</td>
<td>15</td>
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<tr>
<td>255.224.0.0</td>
<td>18</td>
</tr>
<tr>
<td>255.192.0.0</td>
<td>19</td>
</tr>
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</tr>
<tr>
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<td>23</td>
</tr>
<tr>
<td>255.0.0.0</td>
<td>24</td>
</tr>
</tbody>
</table>

5. The next prompt will be to change the Telnet configuration password. Type **yes** to the prompt. A recommended password would be **sys**. The password can be a maximum of 4 characters only. (See CoBox-Micro installation manual for questions)

6. When asked to use a token ring administered address, type **no**.

7. The configuration screen will appear. Make sure that the configuration displayed at the top matches the information just entered.

8. Type **1** to enter the serial port setup menu.

9. For Baudrate, enter 38400

10. For the I/F Mode, enter 4C (this sets the device to RS-232C 8N1)

11. For Flow Control, enter 00

12. For Port , enter 3001

13. For Connect Mode, enter C1

14. For Remote IP Adr, enter 0.0.0.0

15. For Remote Port, enter 00000
16. For Disconnect Mode, enter 00
17. For Flush Mode, enter 11
18. For Disconnect Time, enter 00:00
19. For Send Char 1, enter 00
20. For Send Char 2, enter 00

21. The configuration screen will be displayed. Type 9 to save the configuration information and exit the CoBox-Micro configuration menus. The Device is now configured to work with the network. Power the unit off and on, and follow the wiring diagram to connect it to the ISC Panel (UDS10 only).

22. To verify that the changes were stored correctly, go to the command prompt and Telnet to the IP Address that was just given to the device and port 9999. telnet [IP Address] 9999]. Do not include brackets in this command.

The configuration page will display a summary of current settings.

***Lantronix Universal Device Server***
Serial Number 6405919 MAC address 00:20:4A:64:17:1F
Software version 04.2 (001206)
Press Enter to go into Setup Mode

*** Basic parameters
Hardware: Ethernet Autodetect
IP addr 192.168.2.203, gateway 192.168.002.254, netmask 255.255.255.000

**************Channel 1**************
Baudrate 38400, I/F Mode 4C, Flow 00
Port 03001
Remote IP Addr: --- none ---, Port 00000
Connect Mode: C0 Disconn Mode: 00
Flush Mode: 00

Change Setup: 0 Server configuration
1 Channel 1 configuration
7 Factory defaults
8 Exit without save
9 Save and exit Your choice?

Verify that all settings are configured properly and exit the Telnet session.
DST Documentation

************************************************************************************
• THIS CONTAINS INFORMATION SPECIFIC TO ALPHA/BETA TESTING.
• SOME CONTENTS MAY CHANGE FOR FINAL RELEASE

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DST Configuration Utility  V1. 0b5
===============================

*** Description ***

This utility provides users with a graphical interface to various configuration functions for our Cobox, UDS, Micro, Mini, and Mini Rev2 Device Servers, in a single application. This makes it easy to do the initial setup, ping, assign IP addresses, and upgrade firmware.

When using the DST Configuration Utility to assign an IP address, the PC that has the Utility installed must be on the same local subnet as the Device Server. All other functions work across multiple networks, provided your particular settings allow it.

*** Requirements ***

This version of the DST Configuration Utility requires Windows 95 / 98, WindowsNT 4.0, or Windows 2000.

*** Installation ***

The DST Configuration Utility is distributed on CD-ROM in a single image as a self-extracting executable.

1. The application installation directory defaults to C:\Program Files\DSTConfig, unless another folder is selected during the installation process. (In the destination subdirectory, and *.COB download files reside under the \Firmware subdirectory.)
2. A shortcut to this application was created on the Start/Programs menu.

*** Upgrade Instructions ***

You must first uninstall any previously installed copy of the DST Configuration Utility before installing this version.
To uninstall a previous version follow these steps:

1. Select Settings ->Control Panel from the taskbar Start menu.
2. Double click on the Add/Remove Programs icon.
3. Under the Install/Uninstall tab, select DSTConfig in the Software list and then click Add/Remove. Follow the prompts. (Note: DSTConfig was the default Program Folder specified in the installation process.)
4. On the InstallShield Wizard screen select the Remove option, located at the bottom. Then click Next and continue.

*** Technical Support ***

If you have a question about DST Configuration Utility, first look in the online Help file. When the program is running, press the F1 key to automatically display Help. This Help file can also be accessed via the shortcut on the Start/Program menu.

If you cannot find an answer, contact Lantronix technical support at 800-422-7044 US or 1-949-452-7198.

*** Error Logging ***

Runtime errors detected in Visual Basic are currently recorded in a test file ErrorLog.txt located in the same directory as the application. This will allow all unhandled errors to be logged as they occur and subsequently reviewed. However other Windows detected errors will need to be logged and reported separately, with the feature and error description, for investigation later.

*** Know Bugs ***

Assign IP feature – if an IP address that is already in use on the network is assigned to a device, then the device will get stuck in its reboot sequence. Only recourse is to cycle power to the device without a network connection. (Note: in the next release a check will be made first on the specified IP address)

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Configuring a COBOX-MICRO (Micro Serial Server)
Serial Connection
UDS10 Only
(A COMMON SERIAL CABLE IS REQUIRED)

Step 1 - Establish Serial Communication with ETHLAN

1. With the power OFF to the UDS10 device, establish a serial connection from the UDS10 to the PC’s Serial Communication Port, for example, using Hyperterminal. (A common serial cable is required).

2. Start Terminal.

3. Change the Communication settings to 9600 baud, 8 data bits, 1 stop bit, and parity none.

4. Plug in power to the UDS10 and press “x” within 2 seconds. The following messages should appear in the terminal.

5. Choose option “0” for Server configuration.

6. Refer to steps 2 through 22 that begin on page 3 to complete configuration of the unit.