

Data Controller 7044000-1

Operations Manual



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Compatible with:
Sensor Firmware Revision A.5

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America*

Data Controller 7044000-1

Operations Manual

Wireless Condition Monitoring System

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Warning and Disclaimer

Techkor Instrumentation assumes no liability for damages, whether direct or consequential, arising out of the use, or inability to use, this product.

This product is not designed to operate indefinitely. The user assumes full responsibility for all maintenance and testing of the product necessary to ensure proper operation. Any testing situation should have proper backup and redundant systems in place to ensure the safety and quality of the information generated.

The information contained in this literature is based on our experience to date and is believed to be accurate and reliable. However, Techkor Instrumentation assumes no responsibility for the use of such information. The information contained herein is intended as a guide for use by persons having technical skill and at their own discretion and risk.

1. Connections

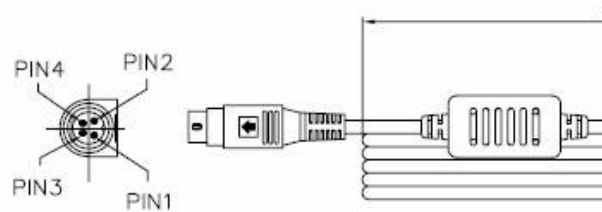
1.1 Power and Ethernet Connections

Data Controller 7044000-1 comes with 25W 4V AC/DC Power Adapter.

Standard Power Adapter Parameters:

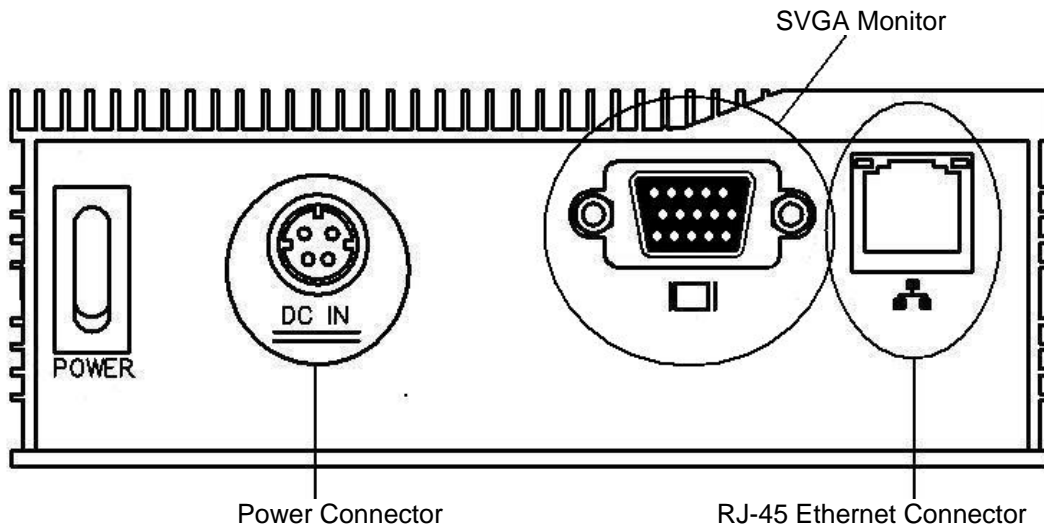
DC Input: 100-240V, 0.9A, 50-60Hz

AC Output: 5V, 5A Max.



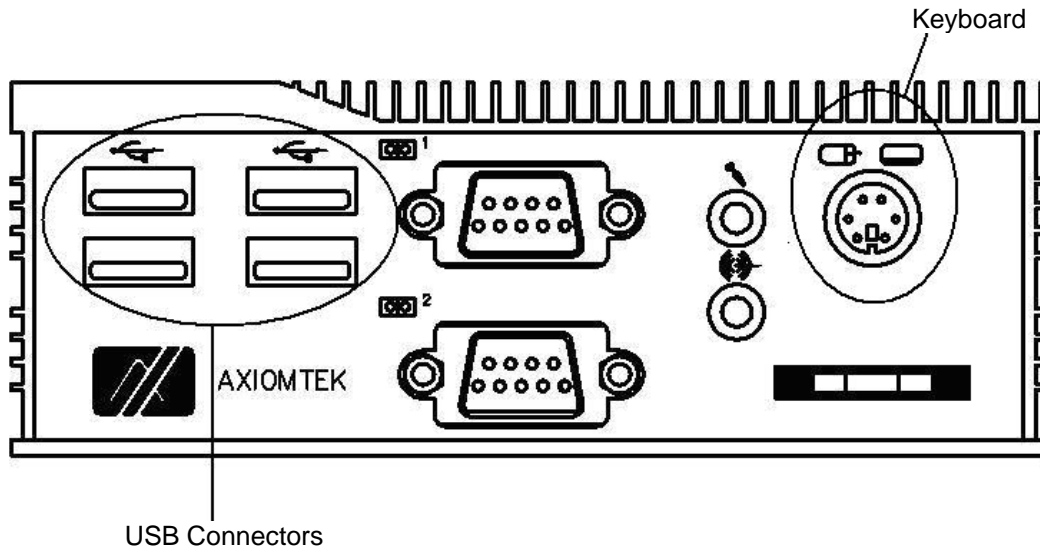
DIN PLUG	POLARITY	COLOR
P1	VO(+)	WHITE
P2		
SHIELD	GND(-)	BLACK
P3		
P4		

Power Adapter Pin Assignment



The RJ-45 connector is for Ethernet. To connect Data Controller to a 1000/100/10 Base-T hub, just plug one end of the RJ-45 cable into RJ-45 connector, and connect the other end (phone jack) to a 1000/100/10-Base-T hub. Use RJ-45 Ethernet crossover cable for direct connection to the computer Ethernet port.

1.2 USB Wireless Access Point Connection



Four USB ports on the Data Controller's front panel allow connecting up to four USB Wireless Access Points.

1.3 SVGA Monitor and keyboard connection

SVGA Monitor and keyboard can be used for Data Controller 704000-1 troubleshooting purposes. Locations of monitor and keyboard connectors are shown on pictures above.

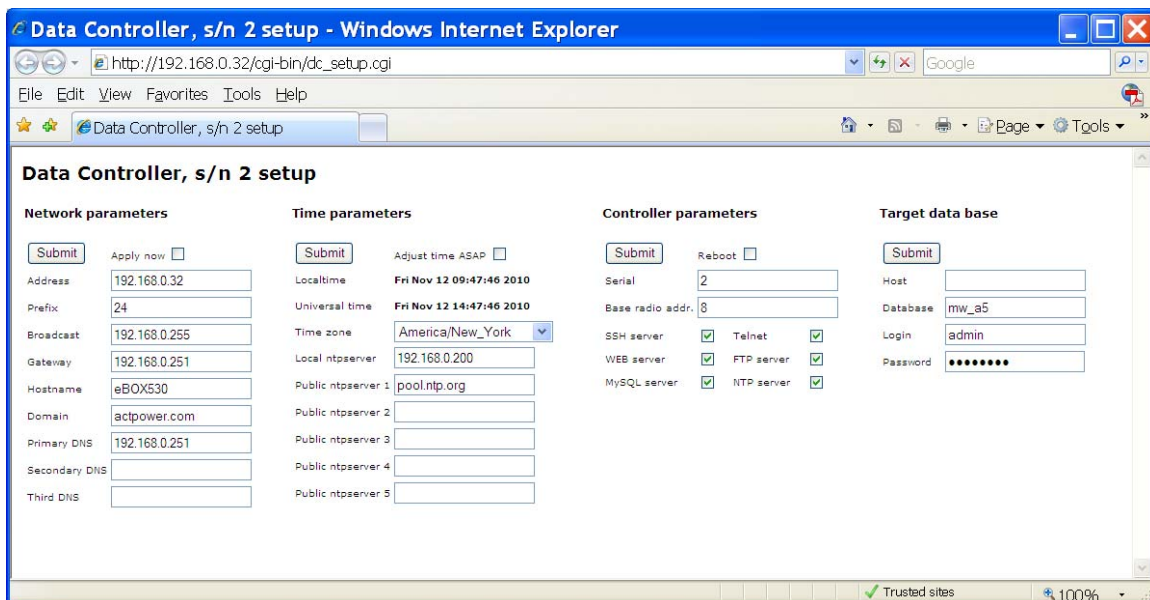
2. Data Controller Configuration

2.1 Data Controller Configuration using WEB Interface

Open Data Controller startup page (<http://192.168.0.32>). Click link [Configure Data Controller](#) to open WEB Interface Window.



Password Verification Dialog should appear. Enter User name *admin* and enter password, provided in the Data Controller *startup parameters list*. Data Controller setup page appears.



2.1.1 Network parameters

Address	- IP address of Data Controller
Prefix	- network mask, number of 1-bites from the left
Broadcast	- broadcast address for subnet
Gateway	- gateway IP
Hostname	- Data Controller host name
Domain	- domain name, if exists and is used
Primary DNS	- primary domain names server IP address, if exists
Secondary DNS	- secondary domain names server IP address, if exists
Third DNS	- third domain names server IP address, if exists

Button Submit applies changes to the Data Controller's Network parameters.
Checkbox Apply now forces changes to take effect immediately.

Note: if you change IP address and Checkbox Apply now is on, old address still is in effect until Data Controller reboot. To check new address will be in effect already before reboot. In other words, both IP will be in effect before Data Controller reboot.

2.1.2 Time parameters

Local time	- displays current Data Controller's local time
Universal time	- displays current universal time
Time zone	- defines Data Controller's Time Zone
Local ntpserver	- IP of local ntp server, if exists
Public ntpserver 1	- network name of 1 public ntp server, if used
Public ntpserver 2	- network name of 2 public ntp server, if used
Public ntpserver 3	- network name of 3 public ntp server, if used
Public ntpserver 4	- network name of 4 public ntp server, if used
Public ntpserver 5	- network name of 5 public ntp server, if used

Button Submit applies changes to the Data Controller's Time parameters.
Checkbox Apply now forces time adjustment immediately.

Note: specifying names of NTP servers assumes DNS system working.

2.1.3 Controller parameters

Serial	- Data Controller Serial number
Base radio address	- Data Controller radio address base
SSH server	- starts sshd daemon on startup
Telnet	- turns on telnet service on startup
WEB server	- starts WEB on startup

- FTP server - turns on FTP service on startup
- NTP server - starts ntpd daemon on startup
- MySQL server - starts mysqld on startup

Button Submit applies changes to the Data Controller's Network parameters.

Checkbox Reboot initiates Data Controller reboot.

Note: if you stop WEB server and reboot, you lose abilities to use WEB interface and to reconfigure Data Controller through WEB interface. It is recommended to turn off any of the system services only if you are sure of what you are doing.

2.1.4 Target data base

- Host - IP address (or name) of Target Database Host
- Database - Database name
- Login - User ID, used by Data Controller to post data in to the database
- Password - password, used by Data Controller to post data in to the database

Target data base parameters specify database location and credentials for Data Controller scripts. Empty Host field is equivalent of *localhost*. It means Data Controller's local database is used.

Note: 7044000-1 Data Controller holds 5 databases, named as *mw_a5*, *mw_a5_0*, *mw_a5_1*, *mw_a5_2*, *mw_a5_3*, *mw_a5_4*. Credentials for all of them are identical and are:

Login: *mw_admin*

Password: as specified in the Data Controller *startup parameters list*.

Default database name is *mw_a5*.

2.2 Data Controller Configuration using telnet or SSH client terminal application

Connect Data Controllers IP over telnet or SSH using terminal application (PuTTY recommended). *Note:* is recommended Linux-friendly terminal application keyboard layout (see Appendix I, if you can run MS Windows telnet only).

2.2.1 Login

On login prompt enter login id *admin* and press Enter. On password prompt, enter password as specified in the Data Controller *startup parameters list* and press Enter.

```
Main rootfs for eBOX530-820-FL
Kernel 2.6.25-P486U-LM on an i686

eBOX530 login: admin
Password: █
```

On successful login status screen appears. Enter *setup* on command prompt.

```

5V:          +5.12 V (min = +4.51 V, max = +5.49 V)
5VSB:       +5.14 V (min = +4.51 V, max = +5.50 V)
VBAT:       +3.28 V (min = +0.61 V, max = +3.60 V)
CPU temp.:  +45.0 C (high = -1.0 C, hyst = +83.0 C) sensor = diode
SYS temp.:  +45.0 C (high = +120.0 C, hyst = +115.0 C) sensor = thermistor
beep_enable:enabled

RPC Software
RUSER      PID %CPU %MEM      ELAPSED COMMAND
root       786  0.3  2.5      44:04 /usr/local/mysql/libexec/mysqld --basedir=
root       807  0.1  0.1      44:03 /bin/bash /usr/mw_a5/scripts/usb_rpc_watch
root       817  0.0  0.1      44:03 /bin/bash /usr/mw_a5/scripts/auto_online
root       860  1.3  0.1      44:03 /usr/mw_a5/rpc_a5_usb -a 13 -u 1

Filesystem      Size Used Avail Use% Mounted on
/dev/sda1       72G  1.1G  67G   2% /

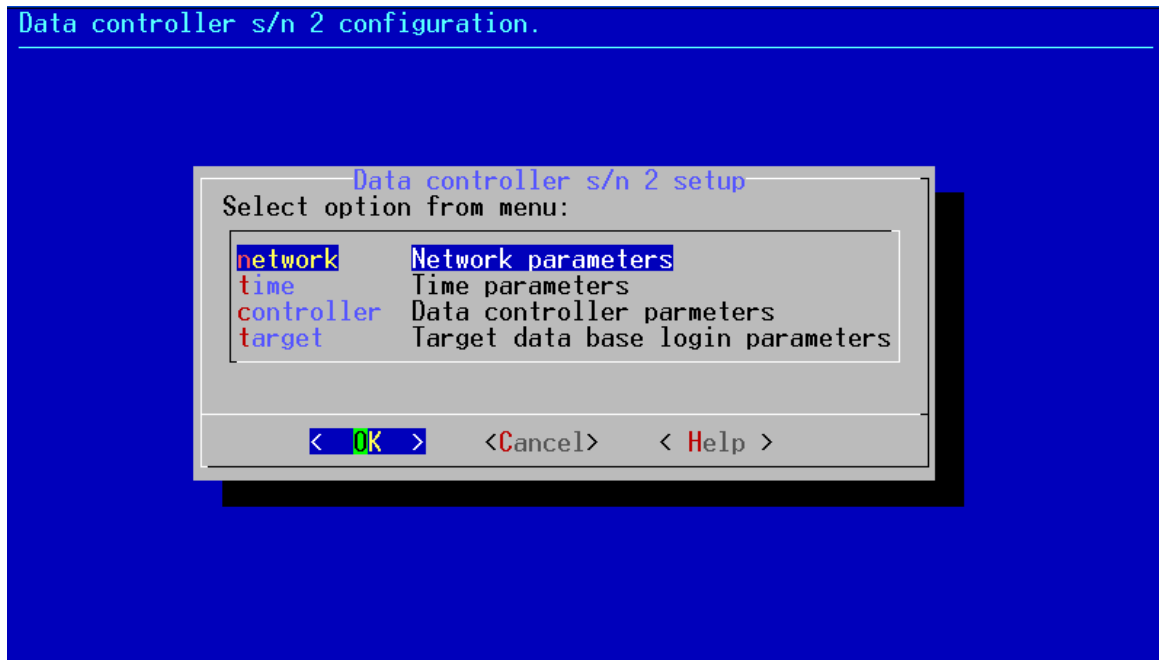
File descriptors
total free max
274    0    102036

Mem:            total      used      free      shared  buffers  cached
-/+ buffers/cache:  36648    990372
Swap:           0          0          0

Network
IP 192.168.0.32
-bash-3.2$ setup

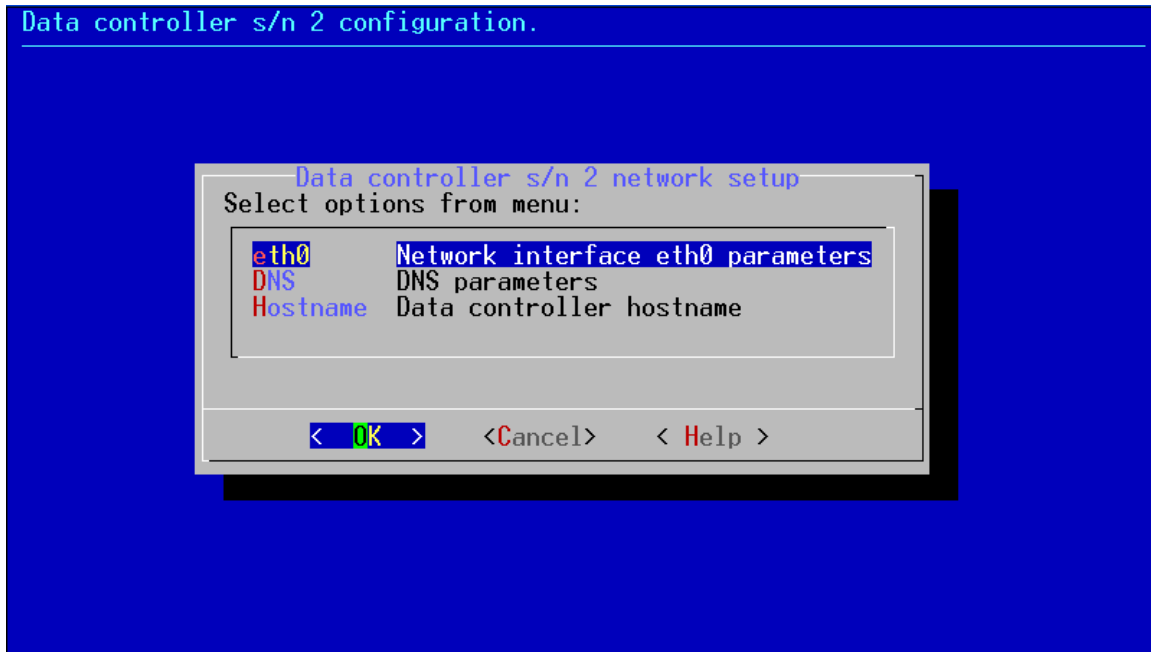
```

Main configuration dialog appears:



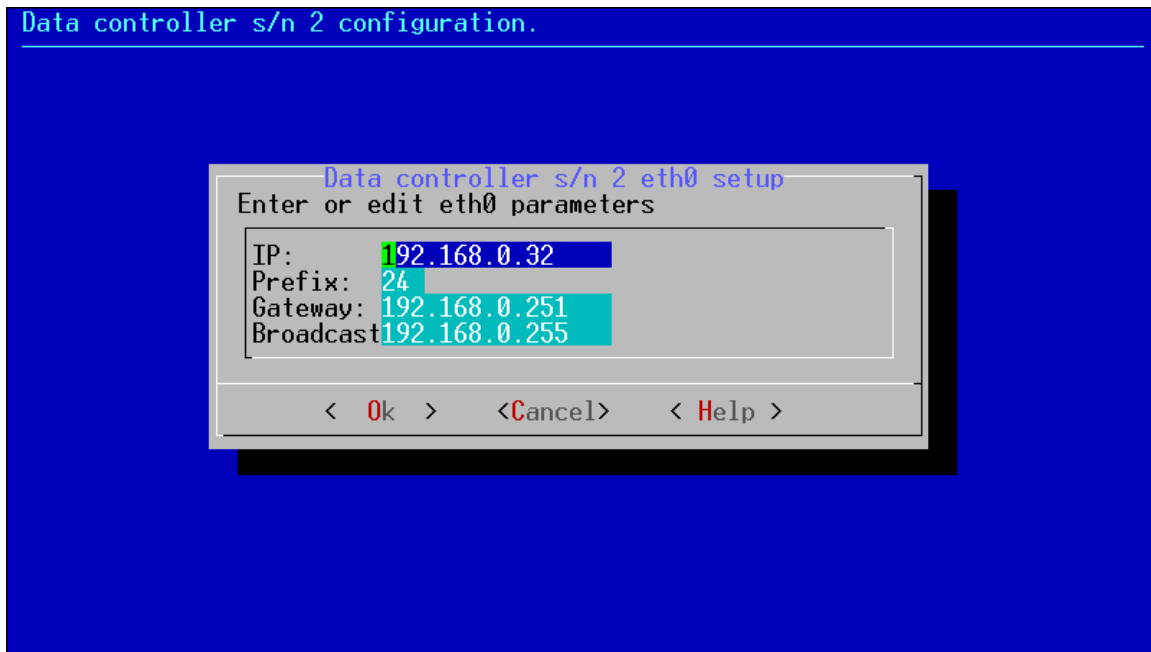
You can select *network parameters* configuration, *time* parameters configuration, *controller* parameters configuration and *target data base* parameters configuration from this dialog. Use arrows keys to navigate between parameters. Use <Tab> key to navigate to < Ok >, <Cancel> or <Help> items.

2.2.2 Network parameters



You can select network interface *eth0* parameters configuration, *DNS* configuration or Data Controller *Hostname* editing.

2.2.2.1 Network interface eth0 parameters

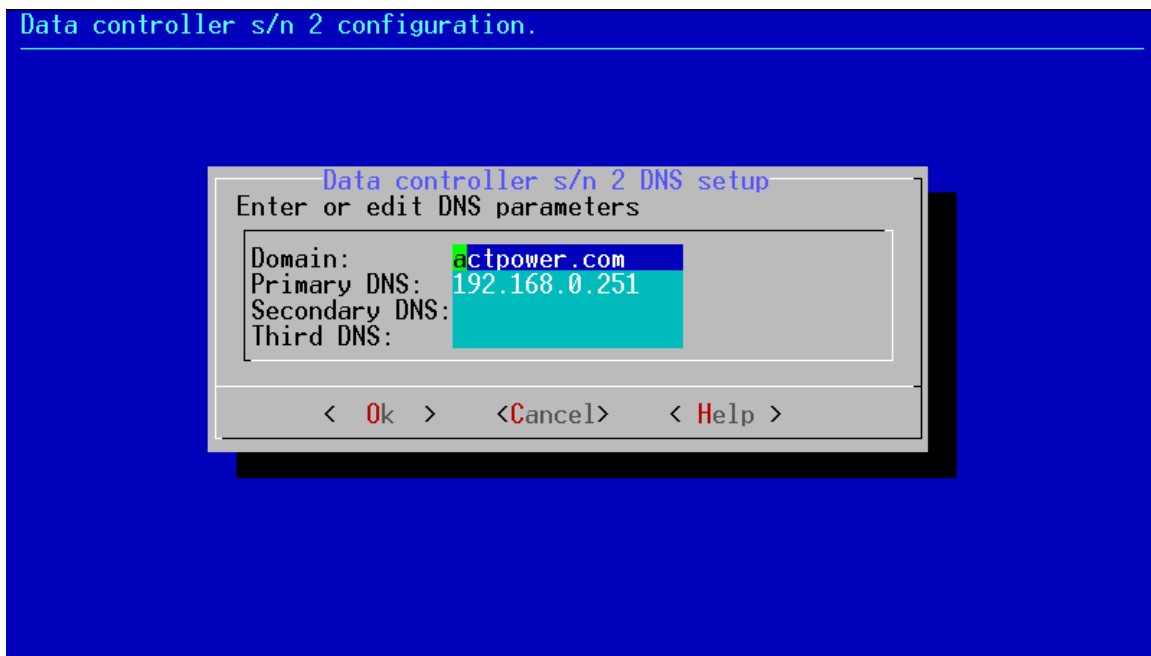


Where:

- IP - IP address of Data Controller
- Prefix - network mask, number of 1-bites from the left
- Gateway - gateway IP
- Broadcast - broadcast address for subnet

Pressing Enter key on <Ok> item saves edited parameters. Pressing Enter key on <Cancel> leaves dialog without saving parameters.

2.2.2.2 DNS parameters

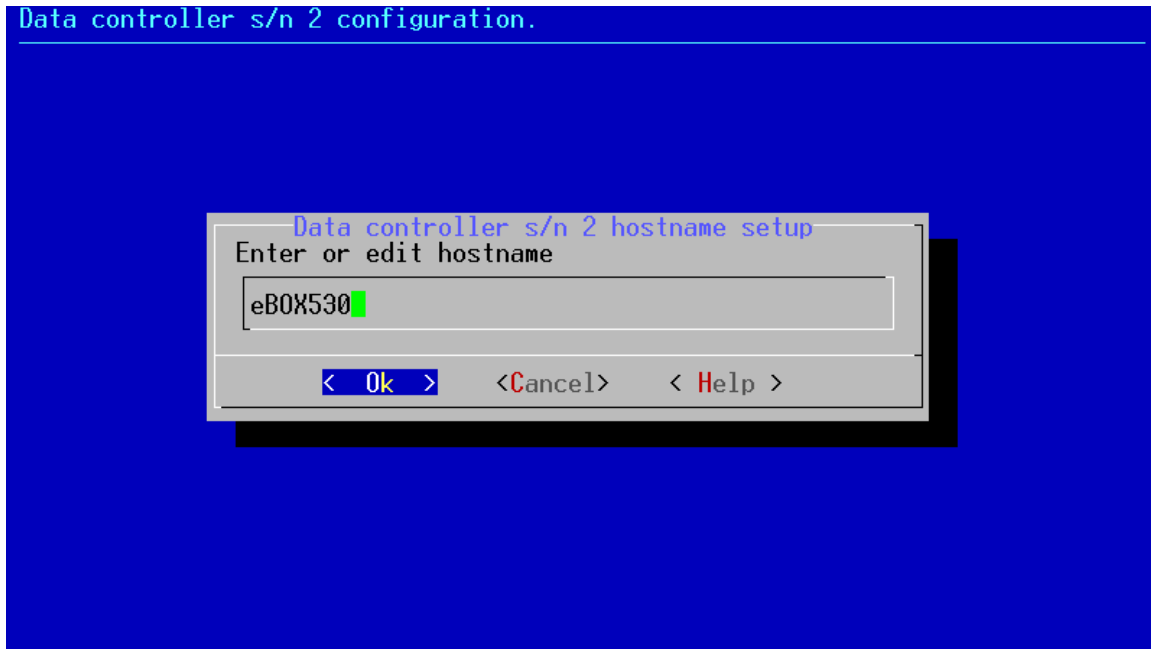


Where:

- Domain - domain name, if exists and is used
- Primary DNS - primary domain names server IP address, if exists
- Secondary DNS - secondary domain names server IP address, if exists
- Third DNS - third domain names server IP address, if exists

Pressing Enter key on <Ok> item saves edited parameters. Pressing Enter key on <Cancel> leaves dialog without saving parameters.

2.2.2.3 Hostname



Hostname - Data Controller host name

Pressing Enter key on <Ok> item saves edited hostname. Pressing Enter key on <Cancel> leaves dialog without saving.

2.2.3 Time parameters



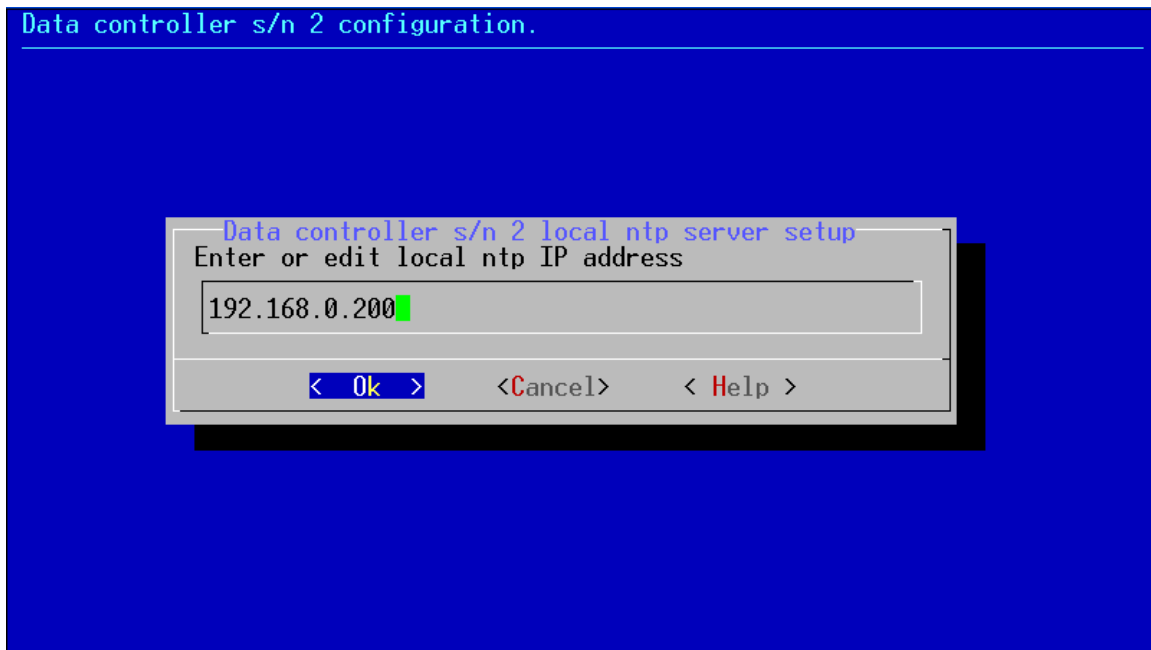
You can select *timezone*, *local* and *public* ntp servers setups.

2.2.3.1 Timezone



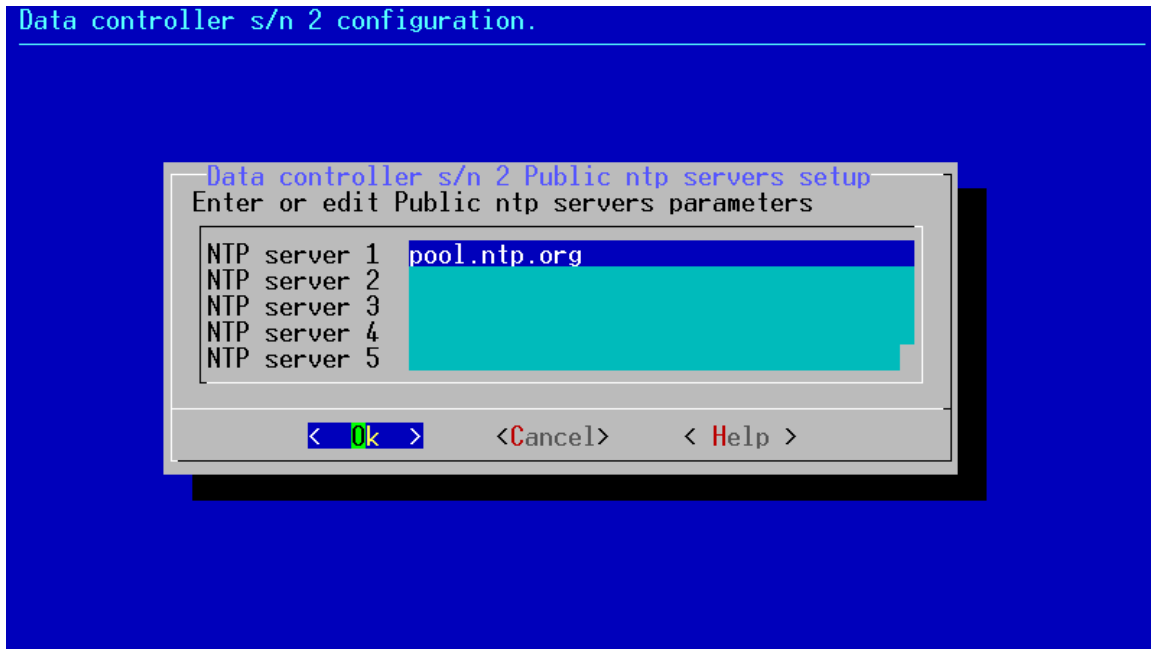
Use <Space> to select directory or file.

2.2.3.2 Local NTP server



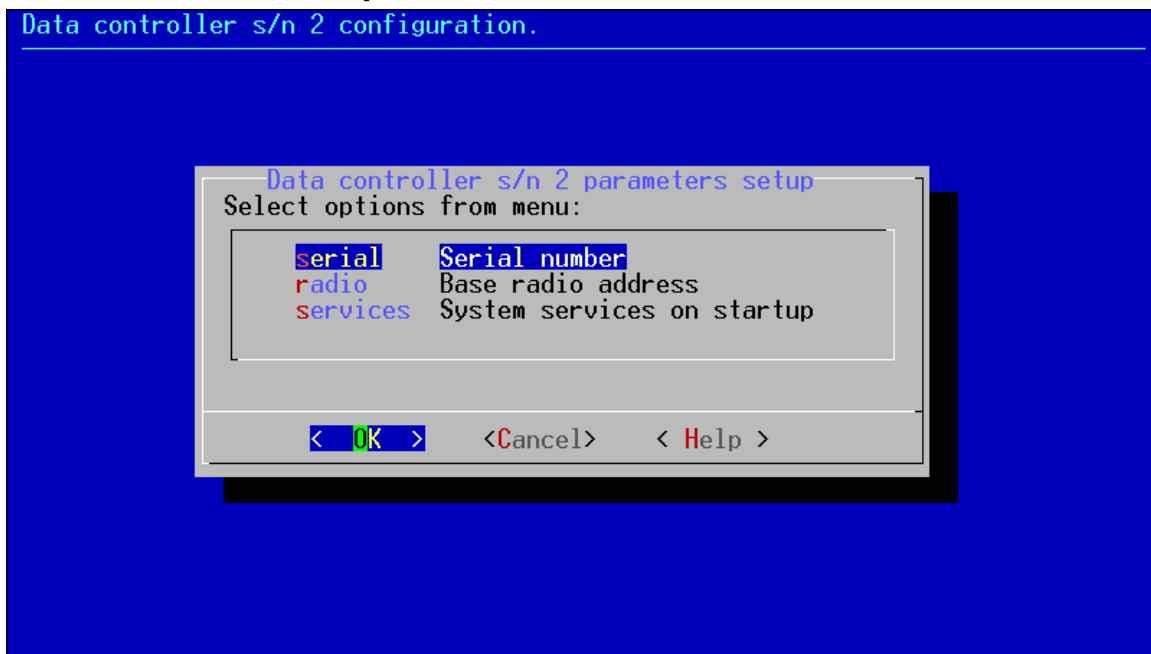
Enter or edit local NTP server IP. Local means NTP server within your network.

2.2.3.3 Public NTP servers



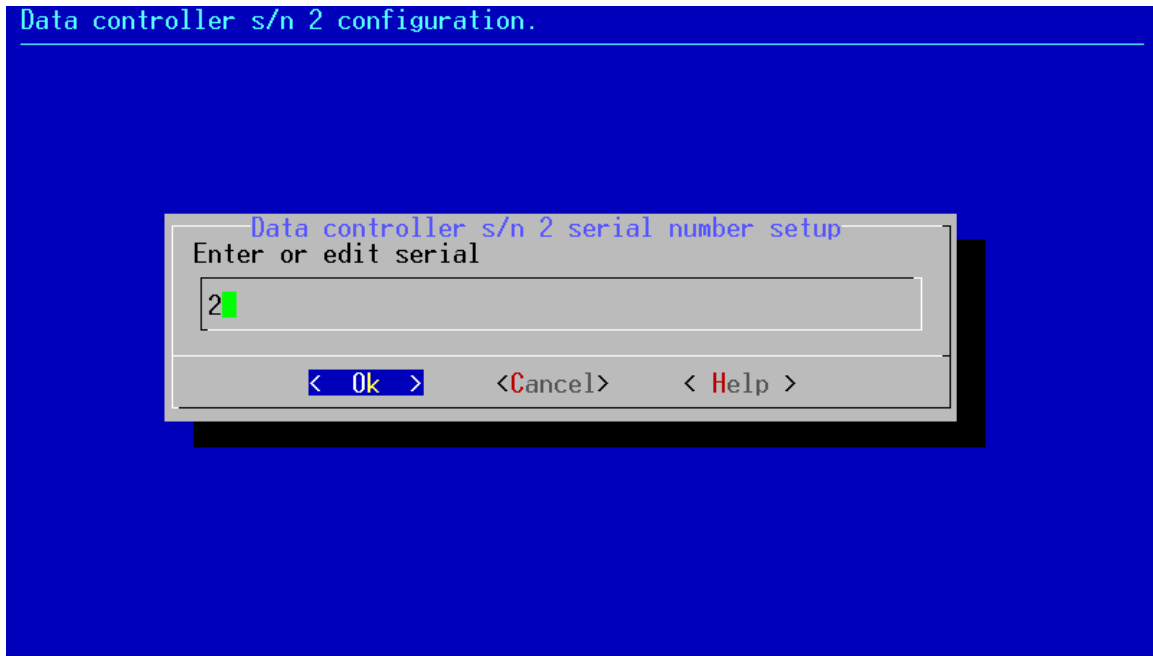
Use this dialog to specify up to 5 public NTP servers.
Note: specifying names of servers assumes DNS system working.

2.2.4 Data Controller parameters



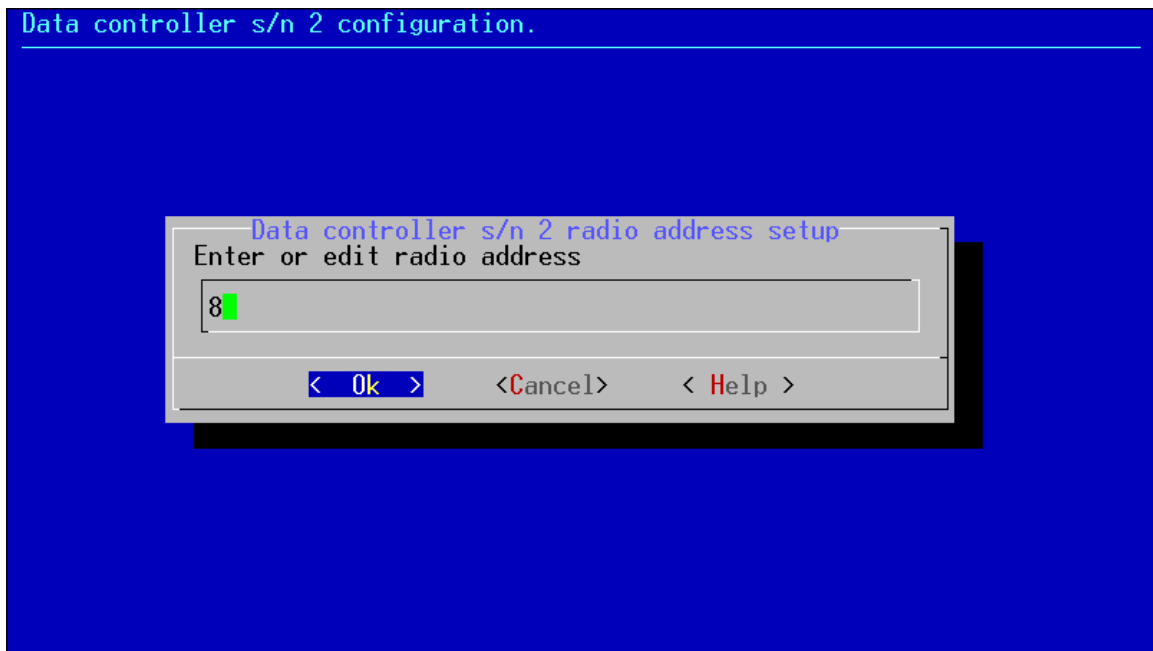
You can select Data Controller serial number setup, base radio address setup and data controllers services to start on startup.

2.2.4.1 Serial number



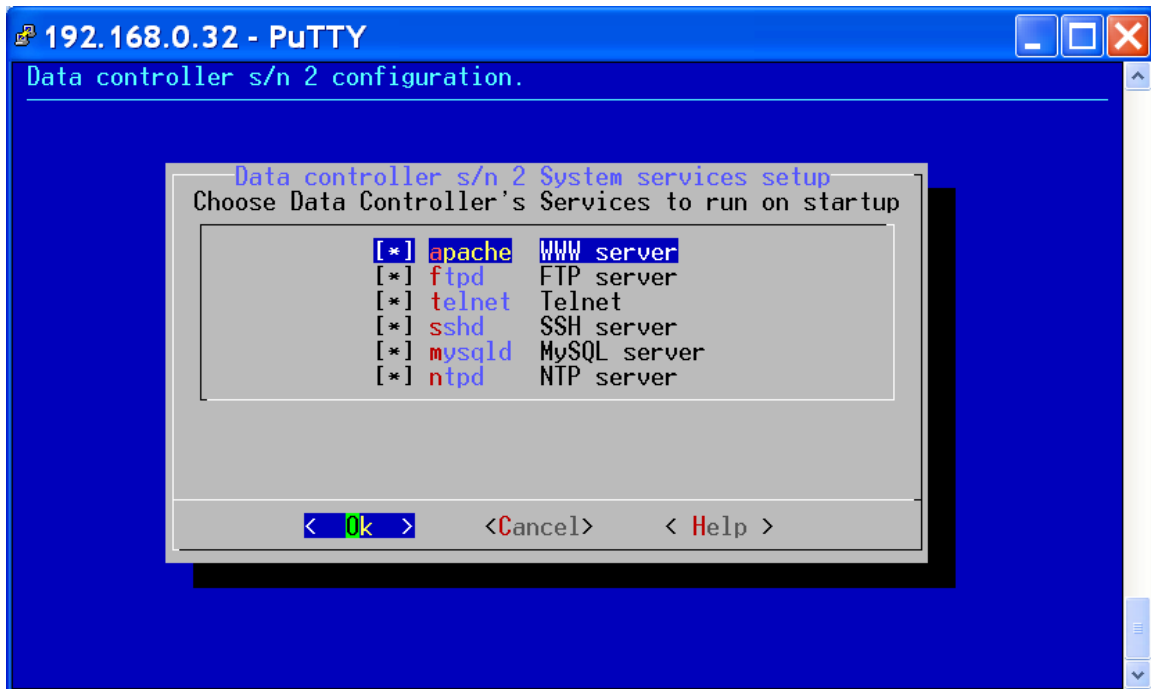
You can edit serial number of Data Controller.

2.2.4.2 Base radio address



You can edit base radio address of Data Controller.

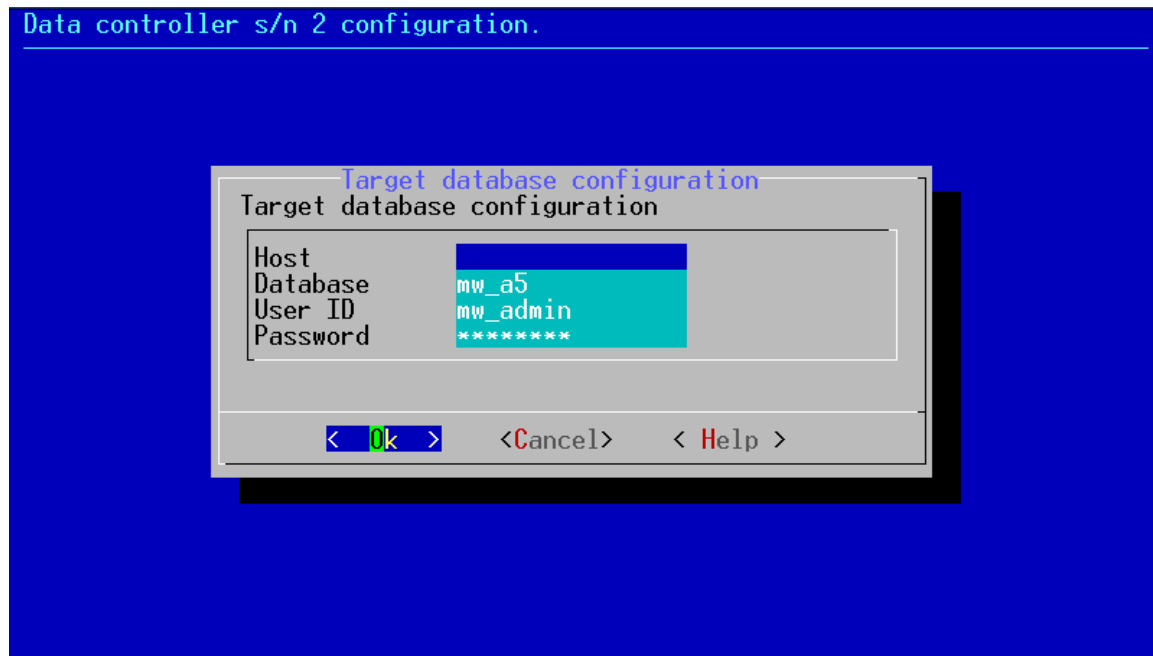
2.2.4.3 System services on startup



- | | |
|--------------|---------------------------------------|
| WEB server | - starts WEB server daemon on startup |
| FTP server | - turns on FTP service on startup |
| Telnet | - turns on telnet service on startup |
| SSH server | - starts sshd daemon on startup |
| MySQL server | - starts mysqld on startup |
| NTP server | - starts ntpd daemon on startup |

Note: if you stop WEB server and reboot, you lose abilities to use WEB interface and to reconfigure Data Controller through WEB interface. It is recommended to turn off any of the system services only if you are sure of what you are doing.

2.2.5 Target data base parameters



- Host - IP address (or name) of Target Database Host
- Database - Database name
- Login - User ID, used by Data Controller to post data in to the database
- Password - password, used by Data Controller to post data in to the database

Target data base parameters specify database location and credentials for Data Controller scripts. Empty Host field is equivalent of *localhost*. It means Data Controller's local database is used.

Note: 7044000-1 Data Controller holds 5 databases, named as *mw_a5*, *mw_a5_0*, *mw_a5_1*, *mw_a5_2*, *mw_a5_3*, *mw_a5_4*. Credentials for all of them are identical and are:

Login: admin

Password: as specified in the Data Controller *startup parameters list*.

Default database name is *mw_a5*.

2.3 Data Controller Configuration using keyboard and monitor

Data Controller configuration using keyboard and monitor can be done if it is not possible to connect Data Controller over http, SSH, or telnet protocols. It could happen if none of listed services are turned on, or if you do not know Data Controller IP address. Connect keyboard and monitor as described in 1.3 and apply power to the Data Controller. Login prompt should appear after booting. Perform steps as described in p. 2.2.1.

Appendix I. MS Windows Telnet with Data Controller 7044

MS Windows telnet application does not have Linux keyboard layout capability. However you can use MS Windows telnet application with some limitations. It is recommended specify terminal type *vt100* or *vtnt* in command line (**telnet -t vtnt 192.168.0.32**).

```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\techkor>telnet -t vtnt 192.168.0.32
```

After login in to the system enter command **TERM=vtnt** on shell prompt.

```
-bash-3.2$ TERM=vtnt
-bash-3.2$
```

These simple adjustments give you ability to work with Setup script.