



Managing Vocality products from Linux

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1 Overview

You may wish to manage your Vocality devices from a Linux-based PC or laptop. Whilst this is possible there are two potential issues:

- Vocality tools, such as VNUT are only available for Windows, so an alternative must be used;
- Secondly, although Linux does provide standard applications such as Telnet, their behaviour can differ slightly when compared to the equivalent Windows versions.

This application note will explain how you can use standard Linux applications to manage the Vocality products.

2 Pre-requisites

It is assumed you have a working knowledge of Linux, including the use of configuration files.

You are also assumed to have a good understanding of the Vocality product range, including how to access and use the debug console.

3 Telnet access to the Vocality console

Vocality products include a supervisor function, which provides a simple menu for management and configuration of the device. The supervisor is accessible either from the serial M&C port or via Telnet. Navigation of the menu requires the use of the arrow (cursor) keys, the <Esc> key and several <Ctrl> key sequences such as <Ctrl> <E>. The default terminal type used by the supervisor is VT100.

3.1 Standard Telnet

Most Linux distributions will provide a Telnet client, but these may not emulate a VT100 terminal and will not necessarily allow use of the arrow (cursor) keys or other special key sequences.

Many distributions default the terminal type to 'linux' or 'xterm'.

In order to change this to VT100 and then start Telnet, you will need to type the following:

```
export TERM=vt100
telnet hostIPAddress
```

It is sometimes necessary to type <Ctrl> <E> followed by <Enter> several times before the cursor keys will respond as desired.

3.2 C-KERMIT

Although it is possible to customise Telnet to work better when connecting to Vocality devices, a more satisfactory method is to use C-KERMIT which is a powerful communication program supporting scripting and much more. C-KERMIT is freely available for most UNIX derivations including Linux.

Once C-Kermit is installed, create a file .kermrc in the user's home directory and copy the following lines into the file.

```
SET TELOPT AUTHENTICATION REFUSE
SET TELOPT KERMIT REFUSE REFUSE
```



```
SET TELOPT NEW-ENVIRONMENT REFUSE
SET TELOPT NAWS REFUSE
SET TELOPT FORWARD-X REFUSE
SET TELOPT COM-PORT-CONTROL REFUSE
SET TELOPT AUTH REFUSE
SET TELOPT TERMINAL-TYPE REFUSED
SET TELNET BINARY-TRANSFER-MODE OFF
SET TELNET NEWLINE-MODE OFF
SET TELNET TERMINAL VT100
SET TELNET ECHO REMOTE
SET KEY \127 \8
```

These last two commands suppress local echoing of keystrokes and map the **<Backspace>** key to send ASCII BS instead of the default RUBOUT. Without these changes you will not be able to type commands in the debug or TTY modes.

Now issue the following command to connect to the Vocality device:

```
Kermit -J vocalityIPaddress
```

You will now be connected to the Vocality device and should find that the cursor keys and **<Ctrl>** key sequences all work as expected.

The kermit **<Esc>** key is **<Ctrl> <\>**.

To disconnect you will need to use **<Ctrl> <\>** and **<u>** or **<q>**.

For help in the Telnet session press **<Ctrl> <\>** then **<?>** and you will be guided through the options.

4 Accessing the Vocality console via the M&C port

There are several communication programs available in Linux (e.g. Minicom, XComm) which you could use to connect to Vocality devices via the serial M&C port. In this example we will use C-KERMIT since we have already installed it for Telnet access.

You will need to add the following lines to the `~/.kermrc` file.

```
set line /dev/ttyUSB0
set carrier-watch off
set speed 9600
set flow none
set parity none
set stop-bits 1
set local-echo off
set key \127 \8
```

Note: These commands are for a standard USB to serial converter, it will probably be necessary to change the 'set line' parameter to match your serial port.

Now start Kermit and connect by typing:

```
$kermit
(/home/user/) C-Kermit> connect
```

Once connected you will need to type **<Ctrl> <E>** to initialise the Vocality supervisor and get the Welcome banner screen.

The kermit **<Esc>** key is **<Ctrl> <\>**



For help in the Telnet session press **<Ctrl> <\>** then **<?>** and you will be guided through the options.

To disconnect you will need to use **<Ctrl> <\>** and **<u>**.

5 Software upgrades

Although software is normally uploaded to Vocality devices using dedicated tools (under Windows) you can use a standard TFTP server to upgrade any Vocality device from a Linux server.

WARNING: The standard Vocality tools include protection to prevent the wrong software being loaded on a device. The manual TFTP methods described provide no such protection. It is up to the user to take all necessary precautions to ensure that only the correct software is loaded on to a Vocality device. Any device which has had incorrect software loaded will become unusable and will have to be returned to Vocality for repair.

5.1 Linux server setup

You will need to install a standard TFTP server, such as TFTPd, on the Linux server.

Note: Until V05_02_02 the Vocality TFTP client generated request packets with extra padding. Servers which support RFC2347 option extensions, may interpret these extra bytes as TFTP options, which will cause the transfer to fail. Using a standard "dumb" TFTP server avoids this problem.

Copy the files to be transferred into the TFTP servers root directory, usually /tftpboot or ~/tftpboot

Change the permissions so that the files are readable by the user of TFTPd, usually defaulted to 'NOBODY' on Ubuntu systems.

If necessary, start TFTPd, or arrange for it to be started via INETD or XINETD.

5.2 V25 and V50plus

Software Upgrades are normally done via the Vocality supplied FLASH utility which transfers the firmware file from the host PC via the serial interface.

To transfer the file via TFTP, we must make use of the debug menu. To enter this menu, type the following commands:

<Ctrl> <E> (to return to the Welcome banner screen)

<Shift> DDDM

You will now see the debug command prompt:

Dbg>

To fetch V05_02_02 software from a server with IP address 192.168.0.10 the command would be:

Dbg> upgrstd V05_02_02 192.168.0.10

You will see the following messages output on the console.

```
Issuing TFTP request - do not power unit off until operation is complete!!
```

```
File Received 5305684 bytes
```

```
Writing to FLASH - % Complete: xx
```

```
Flash Update complete
```

```
TFTP Result Succeeded
```

```
Reboot unit to run new software. Reboot now ? (Y/N)
```



Note: The unit must not be powered off until the operation has successfully completed otherwise it will be rendered inoperable and will have to be returned to Vocality for service.

WARNING: The above procedure does not check that the software is compatible with the hardware. There are dependencies between certain hardware and software versions. Please DO NOT attempt to upgrade a V25 or V50plus using this method without first contacting Vocality Technical Support for advice.

5.3 V150 and V200

These products normally use the TFTP protocol to upgrade software. Once the server is configured you can follow the usual procedures to copy the new software on to the unit.

5.4 BASICS (Voice, Secure Voice, Four Wire, Radio Relay, IP)

These products also use TFTP to transfer software, so once again you can follow the usual procedures.

6 About Application Notes

Application Notes are intended as a supplement to, rather than a substitute for, your User Manual. Should you have queries which are not answered by our current documentation, your local Vocality support team would be happy to hear from you.

E-mail support@vocality.com.