

---

---

# Marathon Technologies Corporation



## Technical White Paper

### USB & Serial Device Connectivity on everRun Virtual Servers using FabulaTech Software

Revision 0.2

October 10, 2007

Martin Kyprianides, EMEA Systems Engineer

Marathon Technologies Corporation  
295 Foster Street  
Littleton, MA 01460 U.S.A.  
Phone: +1 978.489.1100  
Fax: +1 978.489.1101

Marathon Technologies (UK) Ltd  
Regus House, Trinity Court  
Wokingham Road, Bracknell  
Berkshire RG42 1PL, U.K.  
Phone: +44 1344.706.241  
Fax: +44 1344.706.242

<http://www.marathontechnologies.com>

---

## Revision History

Revision	Date	Author	Summary of Changes
0.1	09/25/2007	Martin Kyprianides	Initial revision.
0.2	10/10/2007	Martin Kyprianides	Various edits.

The Marathon logo, SplitSite and Marathon everRun are trademarks or registered trademarks of Marathon Technologies Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. All other trademarks and registered trademarks are the property of their respective owners. Copyright © 2005 Marathon Technologies Corporation. All rights reserved. 070105V1-1

Marathon Technologies Corporation reserves the right to make improvements to this document at any time and without further notice. Marathon Technologies Corporation assumes no responsibility for any errors that may appear in this document.

---

## **Table of Contents**

<b>Introduction.....</b>	<b>4</b>
<b>USB &amp; Serial Port Connectivity Requirements.....</b>	<b>5</b>
<b>Considerations.....</b>	<b>6</b>
<b>Installing the FabulaTech Software &amp; Configuring Devices.....</b>	<b>8</b>

## Introduction

One of the many questions Marathon technical staff often get asked is “How can I present USB or Serial devices to an everRun virtual server?”.

Marathon’s everRun availability software solutions currently do not provide a built-in mechanism for re-directing such devices to an everRun virtual server, with the exception of USB keyboards and mice (which are re-directed by default) and certain USB tape drive devices (please refer to current product documentation for a list of those devices currently supported on everRun).

This document outlines how to present USB and/or serial devices to an everRun virtual server using software products from FabulaTech, namely **USB over Network** and **Network Serial Port Kit**.

Marathon has tested the FabulaTech software products mentioned in this document on the everRun platform and there are some everRun partners and customers who have already successfully deployed these products in order to meet specific requirements for USB and/or Serial device connectivity.

FabulaTech’s software provides a simple and cost-effective solution for these, and other, device connectivity requirements. 15-day free trial versions of all their software products can be downloaded from their website [www.fabulatech.com](http://www.fabulatech.com)

## USB & Serial Port Connectivity Requirements

There are, broadly speaking, two types of connectivity requirement for USB and serial port devices in an everRun virtual server environment:

1. Present USB/Serial devices to an everRun virtual server that are connected to one or more remote computers on the same LAN as the everRun configuration.
2. Present USB/Serial devices to an everRun virtual server that are connected directly to one, or both, of the physical servers (CoServers) in an everRun configuration.

In both cases, a network connection is required to provide device sharing and connectivity. In addition, the FabulaTech software requires installation and configuration on both the 'remote' host computer (either connected to the virtual server via a LAN or a CoServer) and the 'local' client computer, e.g. the everRun virtual server.

In the case of the first type of requirement described above, connectivity is achieved by using the FabulaTech software to present the remote computer's locally connected USB/Serial port devices via the production LAN, to which the everRun virtual server is also connected.

In the case of the second type of requirement, the Virtual Networks of the Marathon everRun configuration are used. These Virtual Networks are installed by default and provide for private intra-server links connecting both CoServers to the virtual server. They are typically used for file and print resource sharing. However, for this requirement their role is to provide the network connectivity required by the FabulaTech software to present directly attached USB and/or Serial devices to the virtual server.

Another potential requirement is to provide everRun virtual server connectivity to serial port hardware that is connected directly to the same LAN as the everRun configuration. For example, Terminal Servers that allow multiple RS-232 devices (e.g. modems) to communicate over an IP-based Ethernet LAN.

This type of connectivity can usually be achieved by installing the appropriate software (supplied with the hardware device) on the everRun virtual server without the need for additional 3<sup>rd</sup> party software, and is therefore outside the scope of this document.

## Considerations

There are several things to consider when connecting USB and/or Serial port devices to everRun virtual servers.

The primary consideration is the level of redundancy that may be required (if any), and what can actually be achieved, for the connected device(s).

In an everRun configuration, specific matching I/O devices are virtualised – in effect, paired up by the everRun software to present a single, redundant I/O component to the virtual server. These redundant, fault-tolerant I/O devices are re-directed disks (integral to the server hardware and/or externally attached) and NICs, of which up to 4 pairs can be re-directed to the virtual server to provide connectivity and fault-tolerance for up to 4 separate physical/logical virtual server LAN connections.

When connecting and redirecting other types of inherently supported devices, such as CD-ROM or tape drives, these components are not paired into a single device for redundancy and therefore do not form part of the Marathon everRun fault-tolerant I/O subsystem.

For example, if a CD-ROM drive on one of the CoServers in an everRun configuration is re-directed to the everRun virtual server, the everRun virtual server will see a single CD-ROM drive present. If the CD-ROM drive in the other CoServer is also re-directed, the virtual server will then see two CD-ROM drives. But these are presented as two discrete devices – they are not paired up for redundancy.

In the case of USB and Serial devices, these would also not be virtualised into a single, redundant device from a matching pair attached to each CoServer (or via another computer on the LAN). The FabulaTech software provides an effective solution for *connectivity* of these devices in an everRun virtual server environment, but this does not equate to fault-tolerance.

It is therefore also important to understand the specific functionality of the USB/Serial devices that are required for use in an everRun configuration and, if appropriate, the behaviour of any applications installed in the everRun virtual server that will be required to communicate with the USB/Serial hardware devices.

For example, in some cases it may be possible for an application installed in the virtual server to be able to communicate with a single USB/Serial device but instantly detect that a USB or Serial device is no longer present (e.g. on device/server failure or removal) and switch instantaneously to communicating with the other device. This of course assumes you have presented a pair of devices to the virtual server.

However, this type of functionality is application-specific and will vary depending on the application and how it interacts with the device itself.

A case in point is the use of USB dongles in an everRun configuration. USB dongles provide a secure and effective solution for digital rights management and certain applications require the use of them, or at the very least the application developer may recommend their use for protection against piracy.

It is possible to use USB dongles in an everRun configuration, using the FabulaTech USB over Network software to present the dongles to an everRun virtual server.

An important consideration is that this may not be the case for every type of USB dongle available on the market today. It will depend largely on the type of dongle and the functionality that can be achieved (e.g. the ability to switch instantaneously between a failed device and a working one) will be determined by the application being used to communicate with the device.

It should also be noted that Marathon has not, at least currently, carried out any formal QA testing and validation of USB dongles on the everRun platform in the manner described above, although some of Marathon's business partners have achieved success with some USB dongles (e.g. Aladdin HASP) in conjunction with FabulaTech software.

## Installing the FabulaTech Software & Configuring Devices

As mentioned previously, FabulaTech's USB over Network and Network Serial Port Kit software requires installation on the computer with the USB/Serial devices attached (e.g. a computer on the network or a CoServer) and the everRun virtual server itself.

Prior to installing the FabulaTech software, the following items should be checked:

1. The USB and/or Serial device(s) you wish to present to the virtual server are installed and working correctly on the remote computer (or CoServer).
2. On the remote computer – or CoServer – with the attached device(s), ensure that any software drivers required by the device(s) are installed.
3. On the virtual server, ensure that any software drivers required by the device(s) are installed.

**IMPORTANT NOTE: Please refer to your application provider, or relevant documentation, to determine if any of your applications require installation prior to the USB/Serial ports being made available. In many cases, this would take place after the installation of FabulaTech as the devices will need to be visible to the virtual server, but this may not be the case for every application.**

The good news is that FabulaTech's software is very simple to install and has an intuitive interface, making it very easy to configure connected devices. The following process describes in simple terms how to install and configure the USB over Network software in an everRun environment and outlines the steps involved in presenting a locally attached (e.g. connected to a CoServer) USB device to the virtual server.

Firstly, attach the USB device to one of the CoServers. Then download the USB over Network software from the FabulaTech website (link below):

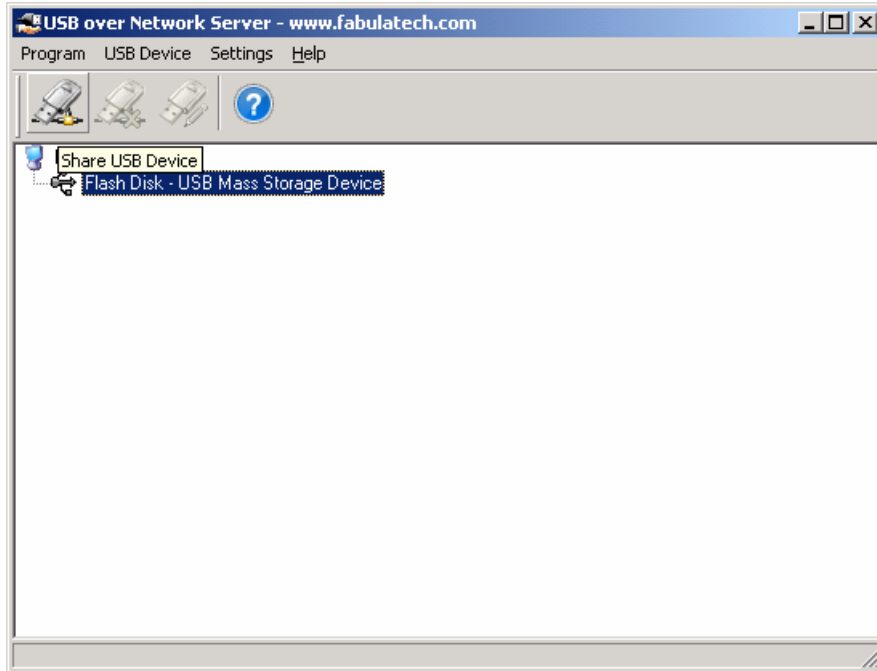
<http://www.fabulatech.com/usb-over-network-download.html>

The program is downloaded as a zip file approximately 2MB in size. After download is complete, extract the files to a suitable directory on the CoServer.

The first task is to install the USB over Network Server component on the CoServer. This allows for the USB device to be shared for use by the virtual server. Locate the file setup-server.exe in the extracted files directory and install the software. This simple wizard-driven installation will take around 1 minute or so to complete. The next step is to share the attached USB device(s). This is done by launching the USB over Network Server program (from either the Start Menu or a desktop shortcut if you selected this option during install) and selecting the USB device that will be presented to the everRun virtual server. This is shown in Fig.1, below.

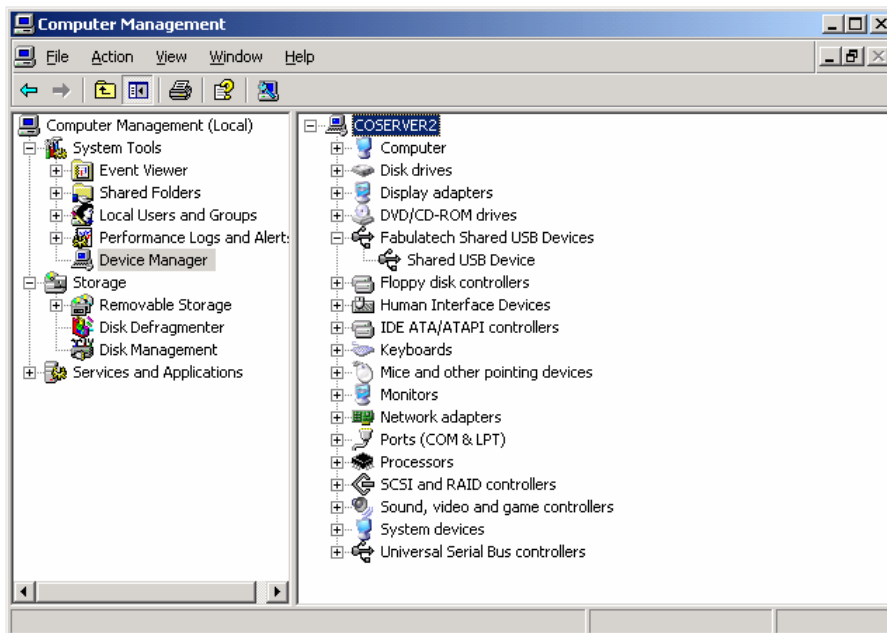


**Figure 1: Sharing a connected USB device using USB over Network Server**



When installing USB over Network Server, FabulaTech creates a new category in Windows Device Manager – FabulaTech Shared USB Devices. Any shared devices are shown as a sub-category, e.g. Shared USB Device. This is illustrated in Fig.2, below.

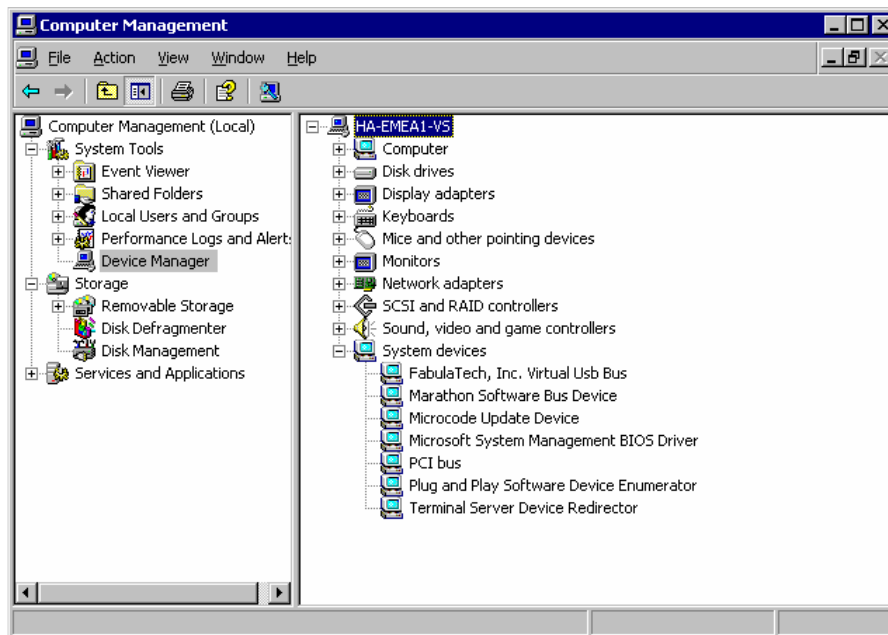
**Figure 2: FabulaTech Shared USB Devices in Device Manager**



The next step is to install USB over Network Client on the everRun virtual server, which will provide virtual server access to the USB device. Locate the file setup-client.exe in the extracted files directory (use Windows Explorer from the virtual server to map to the directory location on the CoServer).

As before, this is a simple wizard-driven installation that takes around 1 minute to complete. Once the software is installed, FabulaTech creates a new sub-category in the System Devices category Device Manager – FabulaTech, Inc. Virtual Usb Bus. This is shown in Fig.3, below.

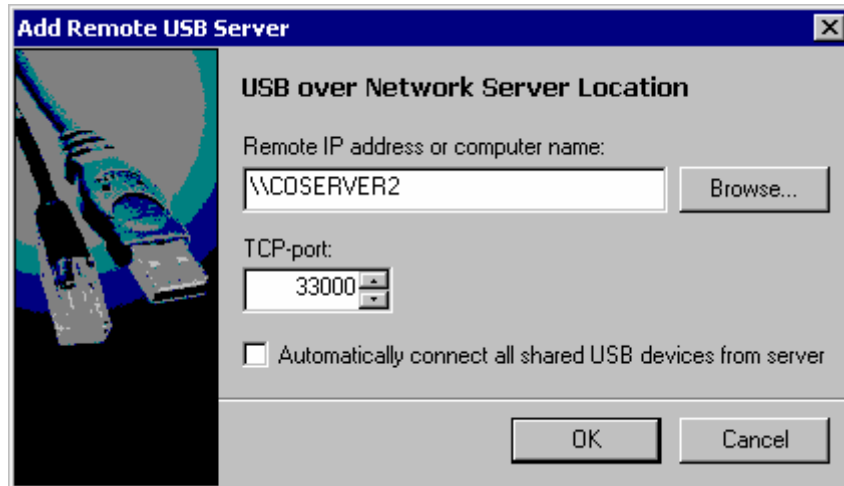
**Figure 3: FabulaTech, Inc. Virtual Usb Bus – new System device**



The next step is to launch the USB over Network Client program. From the top menu select USB Device, then Add (or click on the Add button at the top left of the window). The next window that appears requires an IP address or hostname of the computer that is hosting the USB device. In this case it will be the IP address or hostname of the everRun CoServer that is hosting the device.

Fig.4, below, shows the Add Remote USB Server window, and the location of the USB device using the host computer's name (in this case \\COSERVER2 is the location).

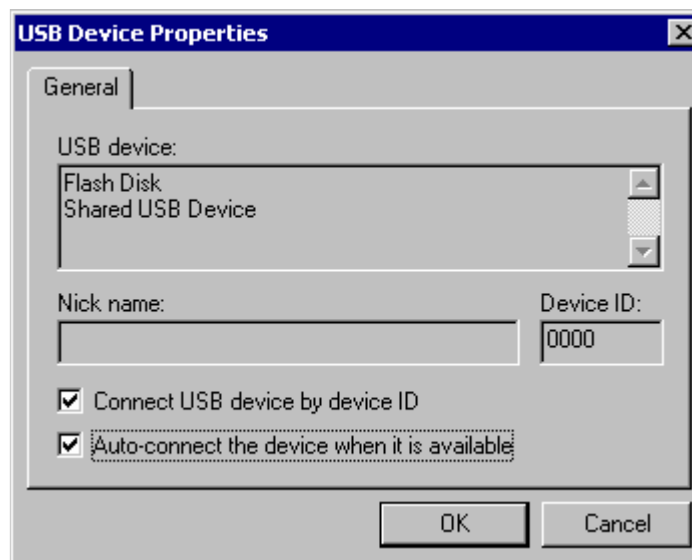
**Figure 4: Adding a Remote USB Server**



Note that an option appears to automatically connect all shared USB devices. This setting can be applied to ensure all available shared USB devices on the specified remote computer are connected with no other configuration required. It can also be selected later on, from the USB Server properties, after the Remote USB Server has been added.

If this capability is not required, an alternative option is to select automatic connection settings on a per USB device basis, which can be configured after USB devices have been added – as shown in Fig.5, below.

**Figure 5: USB Device Properties**

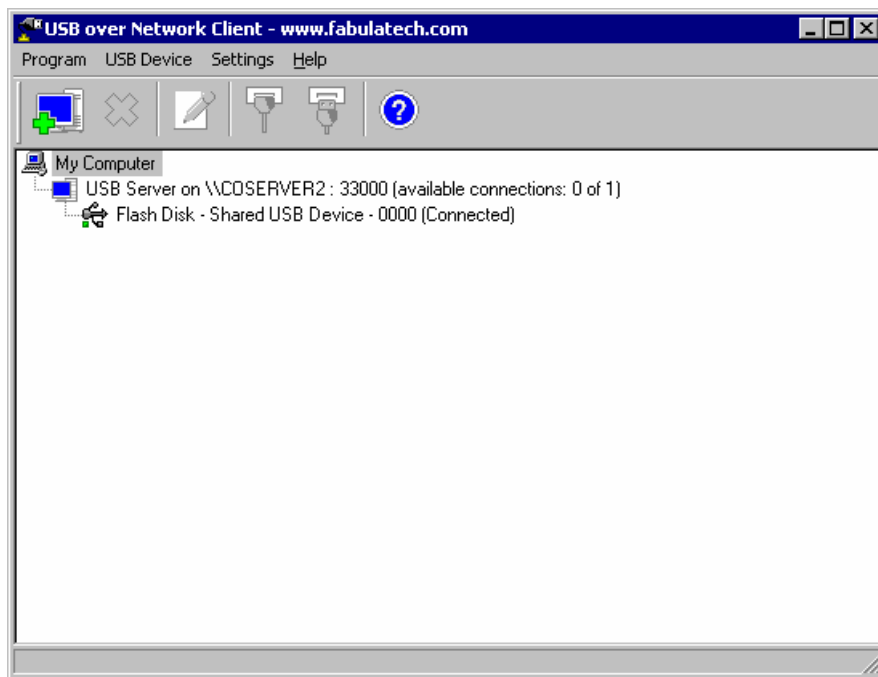


The shared USB device must then be connected to the Remote USB Server, which in turn will make the device available to the everRun virtual server.

Note that the Connect USB device by device ID option (shown in Fig.5 on the previous page) should only be selected if you have several, identical USB devices and these need to be recognised on an individual basis. If this is not the case, do not select this option.

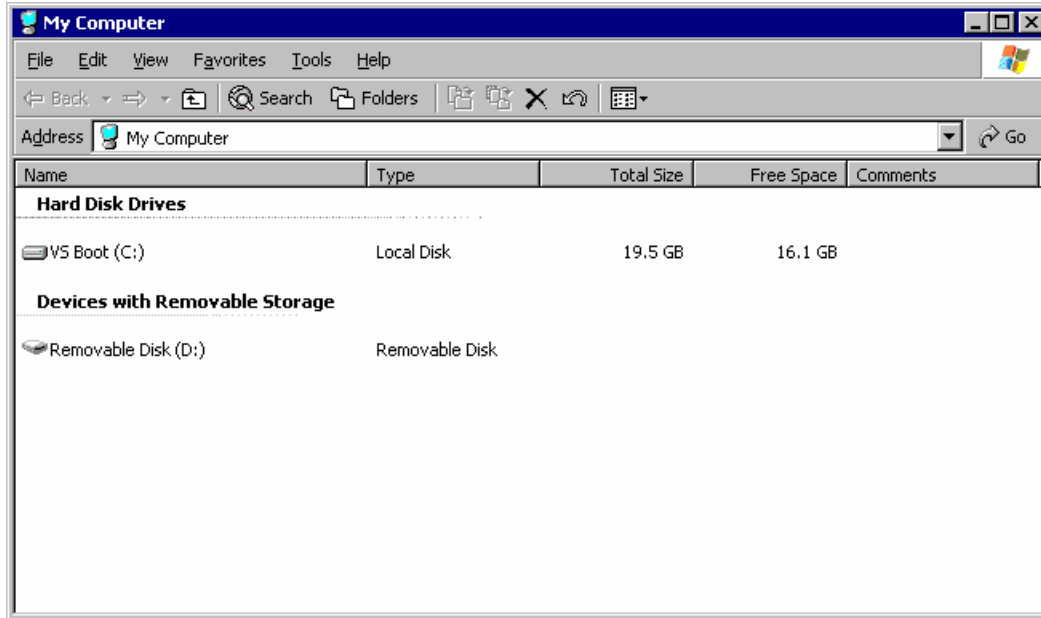
If you chose not to automatically connect devices, you will need to connect each device manually (either from the USB Device options in the window, or from the Properties of the shared USB device). Fig.6, below, shows a connected USB device.

**Figure 6: USB over Network Client – USB device connected to Remote USB Server.**



The connected USB device can now be accessed by the everRun virtual server. The example in Fig.7, below, shows a connected USB Flash Drive (D: drive) that is visible in the everRun virtual server's My Computer view. This USB device is displayed as if directly attached to the virtual server.

**Figure 7: USB flash drive in virtual server – My Computer view**



## Summary

FabulaTech's software products provide an ideal solution for USB and serial port connectivity requirements in a Marathon everRun environment. The Network Serial Port Kit software installation and configuration process is very similar to the USB over Network software described in this document.

Both products are simple to install, taking only a couple of minutes, and also provide flexible connection options for shared devices. The auto-connect feature is particularly useful as it requires no configuration if a shared device is physically removed and then connected to the host computer again, or in the event of the host computer becoming unavailable for a period of time (e.g. after an everRun CoServer has been shutdown or rebooted).

FabulaTech's software includes useful and informative Help menus and there is live, web-based interactive support available from FabulaTech's technical team should you experience any difficulties or have any questions not answered in the Help menus.

For further information on all FabulaTech software products, email [support@fabulatech.com](mailto:support@fabulatech.com) or visit [www.fabulatech.com](http://www.fabulatech.com)