



REDIRECT USB AND SERIAL DEVICES OVER NETWORK

with Eltima Port Virtualization Technology

www.eltima.com
sales@eltima.com

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INTRODUCTION

A big number of manufacturers presented in today's competitive global marketplace rely on specialized USB and COM port sharing tools to achieve their production goals. Based on the unique Port Virtualization Technology, software solutions designed by Eltima have been serving to thousands of successful companies for more than 15 years.

The advanced USB and COM port redirection technology developed by our experienced engineers is compatible with multiple operating systems and works over any distance. Such flexibility lets our customers easily integrate the technology into their own industry-specific software and hardware products.

Eltima Port Virtualization Technology (EPVT):

- provides a system with an unlimited number of virtual serial ports;
- redirects USB and serial interfaces over different networks, including Ethernet, LAN, WAN, the Internet, etc.;
- integrates into hardware solutions for sharing USB and COM-port devices;
- forwards local devices to virtual machines, blade servers, and cloud solutions;
- provides remote access to local USB and serial peripherals within an RDP session, and more.

All connections created with the help of EPVT are absolutely secure thanks to high-level encryption the technology deploys.

[Eltima Port Virtualization Technology](#) has become an essential part of numerous dedicated software and hardware tools. Constantly improved with new abilities and enhancements, our solution helps companies achieve maximum efficiency and profitability.

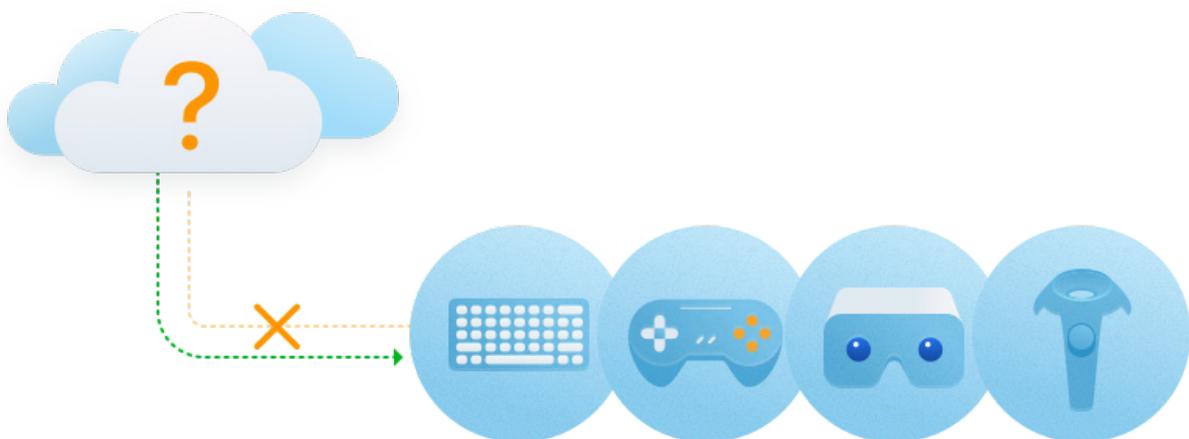
USB AND COM-PORT DEVICES IN CLOUD OS

Cloud computing is an extremely popular and convenient way to keep and process data on the web platform. The increasing number of corporate customers base their company infrastructures on versatile software models offered by cloud providers. Be it a privately owned cloud or a third-party server, a cloud solution attracts subscribers by its great scalability and agility.

Choosing a cloud OS, users get all the necessary functionality right in the web browser of their computer. This way, subscribers of a cloud infrastructure can significantly increase the productivity of their work without using any additional machines.

What challenge do you face using a cloud platform?

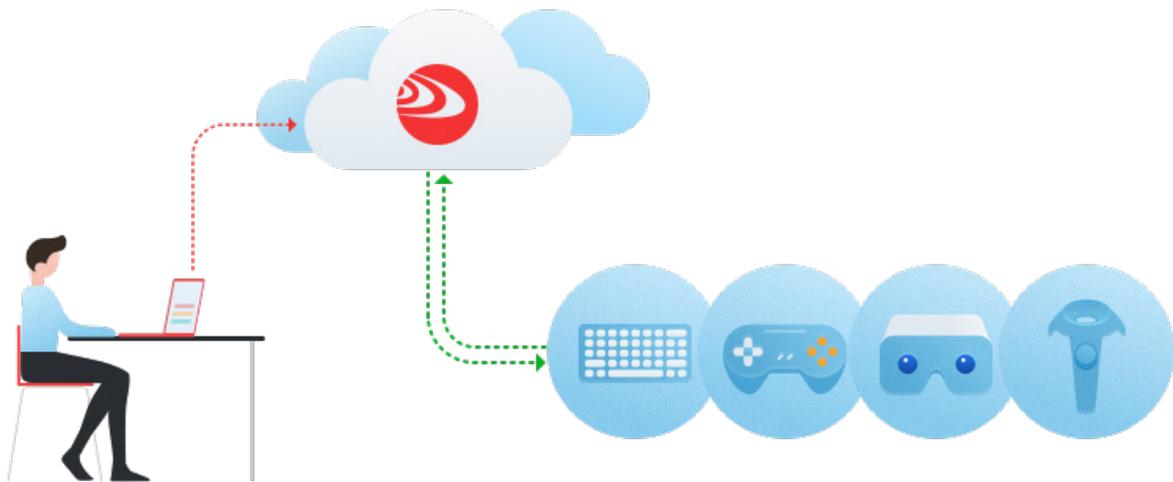
Probably the main disadvantage of cloud operating systems is their inability to see USB or serial devices connected to the user's local machine. Working in the cloud infrastructure, customers cannot forward their local peripherals to the cloud OS and thus are unable to access the devices' contents.



This may be rather inconvenient, especially when it comes to printing, scanning, cloud gaming, and other processes that involve using a game controller, or a 3D mouse. To make user's local peripherals available in the cloud system, cloud solutions need to provide the USB and COM port redirection technology as a part of their service.

What is the solution?

That's where Eltima Port Virtualization Technology can be really helpful. The technology is aimed at forwarding local devices over the network so that a user can access them from any remote machine, including cloud OSes. Shared peripheral is recognized by the cloud solution as though it were attached to the cloud operating system physically.



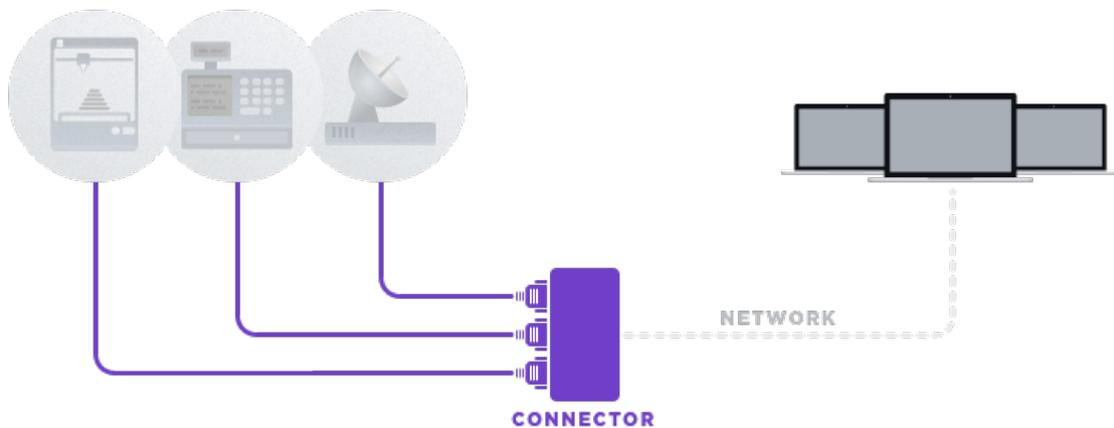
The availability of support for USB port redirection can significantly influence customer's choice of a cloud service. With [EPVT integrated into the core](#) of its structure, a cloud platform is more demanded compared to the one which does not provide this option.

INTEGRATION OF EPVT INTO HARDWARE CONVERTERS

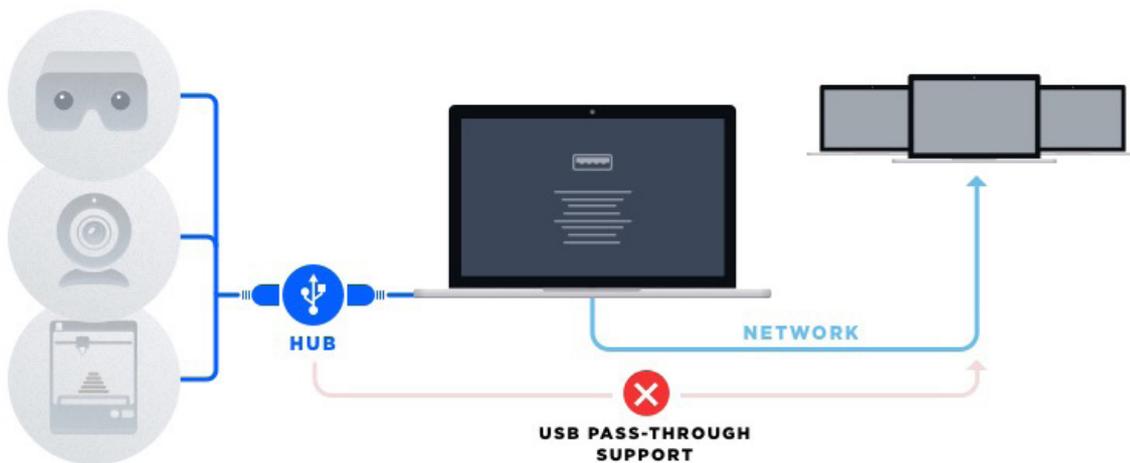
Today virtually any piece of industrial equipment communicates with computers via either a USB or serial interface. Various types of USB and COM ports serve for connecting a wide range of specialized hardware, including uninterruptible power supplies, satellite receivers, cash registers, and many other useful devices, to companies' single data servers.

Connection issue

Development of industrial manufacturing is inextricably linked to the increasing level of process automation. With that, the question of reliable connections between separate parts of equipment becomes especially important.

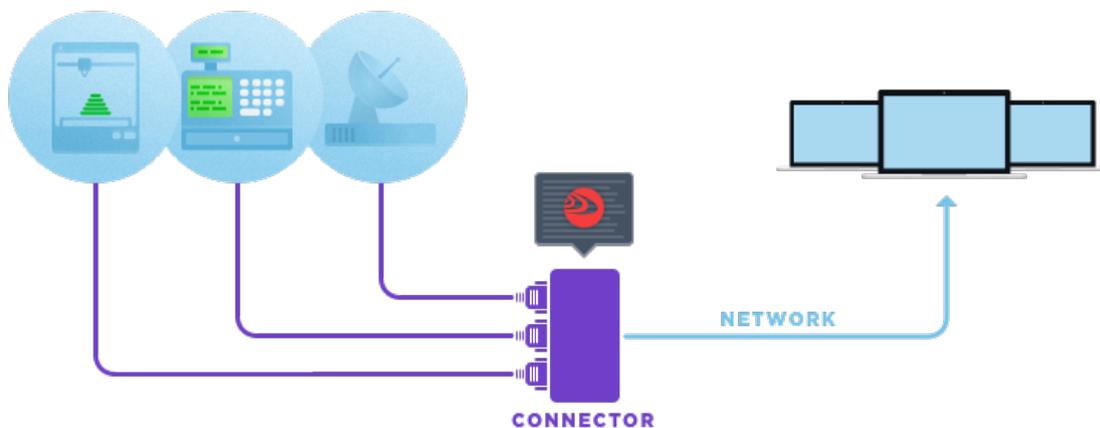


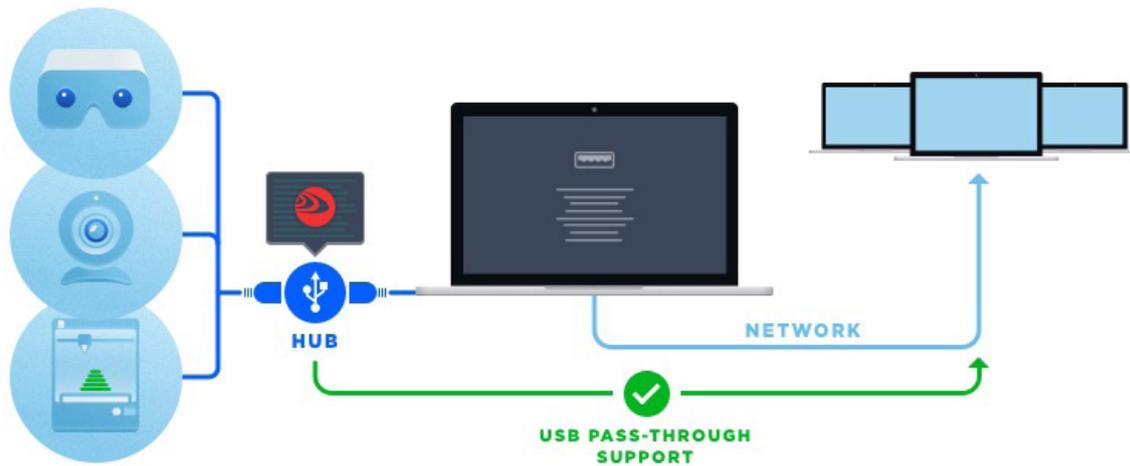
Considering the scale of production and physical remoteness of USB and serial devices, it's not always possible to establish a direct connection between required peripherals. In this case technical specialists have to resort to some hardware methods to share the peripherals over the network and access them remotely.



Optimal Solution

A [hardware serial \(or USB\) to Ethernet converter](#) comes in handy when it's necessary to redirect a device over LAN. To make this possible, manufacturers of device servers integrate Eltima Port Virtualization Technology into the operating system of their hardware tools.





The technology allows accessing any USB or serial port over the network regardless of the port's physical location. By using EPVT, a hardware adapter converts serial signals into TCP/IP data packages and shares them over Ethernet (LAN, WAN, WLAN, or the Internet). Thanks to the port redirection technology, any client computer gets the ability to receive shared serial data. This way, network machines can connect to remote peripherals and access their functionality no matter where the devices are. What the technology does in fact is provides a system with an unlimited number of virtual serial or USB ports. Connected via a virtual port, a peripheral appears in the Device Manager of a client machine like it was attached to the PC physically.

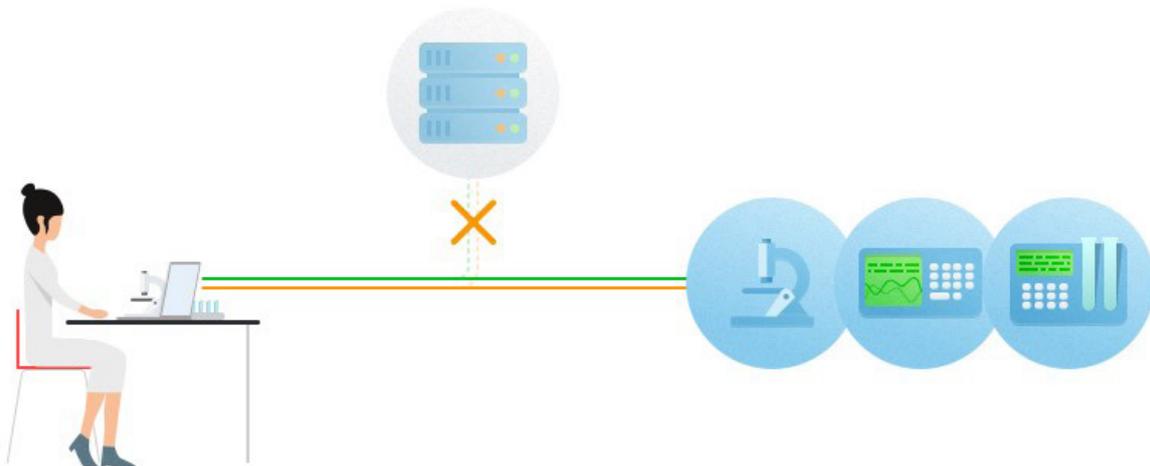
ELTIMA PORT VIRTUALIZATION TECHNOLOGY IN LIMS

A laboratory information management system (LIMS) is software designed to manage laboratory operations, track all samples and specimens, and optimize the processes of collection, analysis, and reporting of laboratory data.

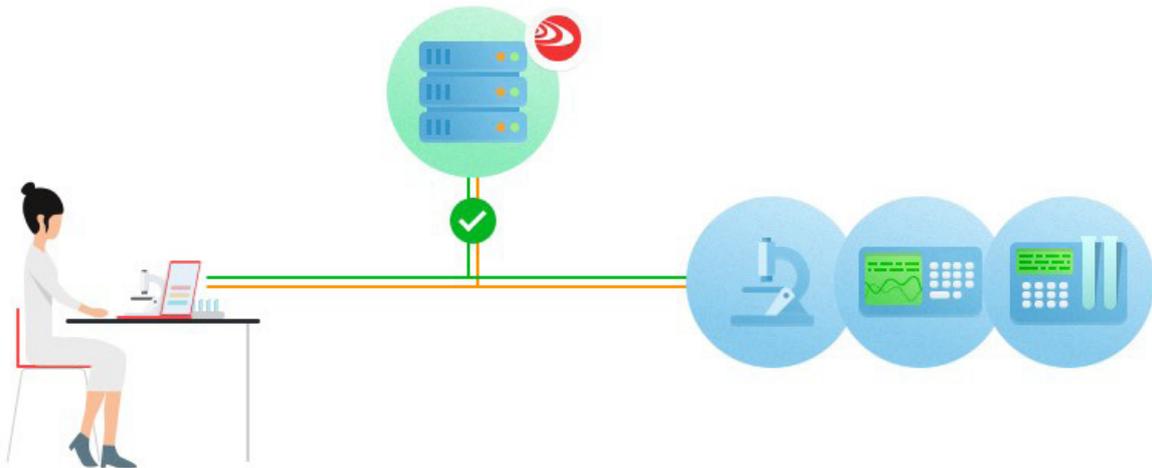
The complex system of laboratory equipment is usually based on serial port communications and requires a specialized software to control the data flows. LIMS software serves for managing laboratory instruments and provides interaction between various lab devices.

Data redirection challenge

LIMS software is designed to receive data from serial and USB devices, convert it, and redirect over network protocols to virtual serial and USB ports created on client computers. For this to be accomplished, the software should support port virtualization technology which will let client machines receive and recognize the transmitted serial data. Without port redirection technology it won't be possible to provide communication between serial devices and the lab's single database.



How the problem is resolved



The solution to this issue is EPVT, which can be easily [integrated into any LIMS software](#). The technology allows emulating serial and USB port activity and is extremely efficient for identifying and diagnosing problems in lab communication system. In addition, the technology lets catch, join, split, and redirect serial signals sent by lab equipment over the network. This makes it possible for lab specialists to monitor and control all serial communications remotely.

POS SOFTWARE AND PORT VIRTUALIZATION TECHNOLOGY

To increase their efficiency, modern points of sale (POS) rely on a wide range of specialized hardware, such as receipt printers, barcode scanners, cash registers, payment terminals, etc. All the pieces of POS equipment form a single POS system that is supported with dedicated POS software. The software is designed to track the communications between peripheral devices, collect information, and forward it to the server side.

Challenge faced by developers of POS software

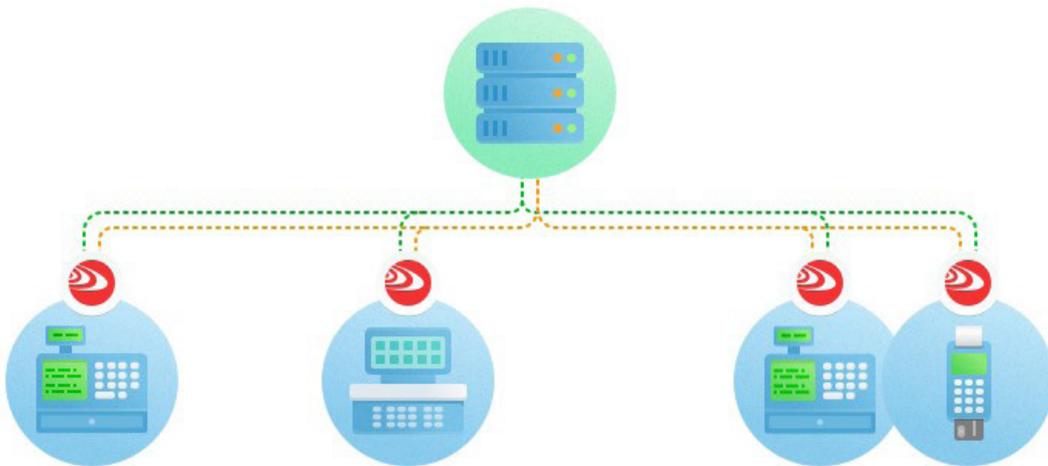
Serial communications between POS devices and a POS single data server are done via serial interfaces of a particular type. With the help of USB and COM ports, specialized hardware (card readers, barcode printers, shipping scales, etc.) connects to a POS computer system.



To track the communications and monitor serial connections, POS specialists use a dedicated software. The software collects data streams sent from POS equipment and redirects them over the network. To be able to access serial ports remotely, the software has to support a special technology for virtualizing USB and COM ports and sharing them across the network.

What is the best option?

The Port Redirection Technology by Eltima Software seems to be the most efficient solution in this case. EPVT is capable of connecting any local computer to a remote USB or serial port with no regards to its physical location. With EPV Technology, [POS software](#) becomes an effective tool for controlling the activity of all POS system devices.



CORE BENEFITS OF ELTIMA PORT VIRTUALIZATION TECHNOLOGY

Integration of Eltima Port Redirection Technology into your industry-specific solution lets you significantly improve the usability of your product. With EPVT you can:



Get access to any remote USB and COM port device wherever it is



Establish virtual connections and emulate the activity of any serial device



Gain the ability to read data going through any remote USB or COM interface and record the streams of data it transmits



Improve the functionality of your product and make it more attractive to the end user



Gain a competitive advantage over other manufacturers of similar solutions. By adding the port virtualization support to your product you get the chance to cover new market segments and significantly increase your company profits



Eltima Software developers will help you make your product a unique offer in the market.

SOFTWARE SOLUTIONS POWERED BY EPV TECHNOLOGY

It's possible to experience the advantages of EPV technology by using one of the already existing software solutions based on EPVT:



Flexihub
Redirects USB/COM ports over network



USB Network Gate
Redirects any kind of USB device over network



Serial to Ethernet Connector
Shares serial ports over network



Virtual Serial Port Driver
Creates virtual COM port pairs



Serial Port Monitor
Monitors and analysis COM port activities

With that, the versatile technology can be easily integrated in your own industry-specific product. Let us know what you need and we'll work out the most cost-efficient and suitable package for you.

Cross-platform integration:

- Mac
- Windows
- Linux
- iOS
- Android
- Embedded system

Programming languages:

- C
- C++
- Objective-C
- Swift
- AJAX
- Python
- PHP
- HTML
- CSS
- Java

CONTACTS

If you are interested in EPV Technology, please, contact us and get a quote:
www.eltima.com/eltima-port-virtualization-technology/#get_a_quote

Our Marketing Specialist at doriss.lane@eltima.com

Or contact our Sales Team by e-mail sales@eltima.com or phone +1 360 312 7638

