

iTwin Technology

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Abstract: USB flash drive is device that is used to store the data. Cloud storage is also used to store the data on the middle server. But the USB flash drive has the drawback that it is too small in size, because of that it can be easily misplaced or lost. In case of cloud storage data can be misused if the username and password is hacked by someone else. To overcome all these problems, iTwin is the best solution. It is the secure USB device that can be used to access, share & edit all the files and media between any two online computers anywhere in the world. It allows remote file access without any security and privacy risks.

Keywords: AES (Advanced Encryption Standard), PC (Personal Computer), USB (Universal Serial Bus), VPN (Virtual Private Network).

I. INTRODUCTION

For accessing the data while you are far away from your PC, there is one option that is to make use of high capacity USB storage device. But what if you told that, you could securely access your PC or any other computer while you are travelling on the road? iTwin is a device that connects to your PC and it allows you to access files and devices that are connected to your home network remotely.

It looks similar as USB device and it is designed by joining two halves. One half is connected to your house or office PC and you have to carry other half always with you. The part that you bring with you is used as a key for obtaining the connection to your PC when you are far away from your PC. When you connect another part of the iTwin device to your laptop when you are on the road, the device makes a Virtual Private Network (VPN) to your house or to the PC that you use in your office. iTwin is completely new file sharing and remote access device developed by a company named as iTwin. It is very similar like two ends of a cable, but it does not need the cable. It is simpler to use than a flash drive. It is just a plug and play device. With iTwin, it is possible to connect any two online computers located anywhere in the world.

iTwin was invented by an Indian named Lux Anantharaman. He has completed a Bachelors degree in Electrical and Electronic Engineering. He studied in IIT in Chennai and he completed a Masters degree from IISc in Bangalore. Lux was completing a part-time MBA at NUS Business School in Singapore, but he put studies on hold because of the potential of iTwin.

II. HOW ITWIN WORKS

The iTwin Connect is a device similar to a USB flash drive but, is designed with two USB connections. The iTwin device is very dense and it establishes a secure connection between two computers or a secure connection between one computer and the iTwin server. When you connect the iTwin Connect device to the main computer in your home or at office, the software is automatically installed configure the computer for remote connection.

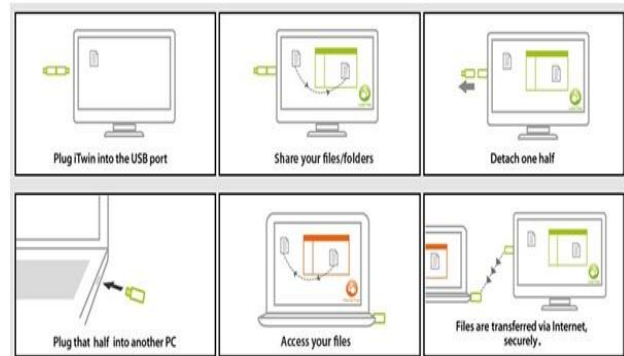


Fig 1 Working of iTwin

When the device is disconnected from the main computer, you have to separate the two parts of the USB ports which are separated in two separate USB devices. The two separate devices are very dense at less than two inches. Small size makes it convenient and easy to carry with you all the time. When you connect the second half to your laptop while travelling on the road, it will routinely install itself without any user interference. In addition, you can set up a special password that disables the device if you are going to lose it. This ensures you can lock down your files to avoid access by an illegal user.

III. ITWIN FEATURES



Fig. 2. iTwin Features

One of the best features of iTwin device is the ability to securely access your data by establishing a personal Virtual Private Network which is capable of managing several tasks. You can able to access all your files and data on your home or office PC by using Windows Explorer. Otherwise you can access definite files that are stored in desktop applications. As well as it is possible to access files from your isolated computer and save that files to the device that you are currently using, till both the devices are enabled with iTwin Connect device.

A. Remote Desktop

This feature enables you to observe the desktop of the main computer and allows you to manage the device. This is very useful medium for managing your computer from a remote position and it can also be used to offer tech support to somebody who experiencing computer problems without actually being seated in front of the PC. By making use of isolated Desktop you can also start Windows Remote Desktop. This can be done with a single click which provides you the access to multiple different applications as well as the data enclosed in them on the remote PC.

B. Teleport Me

The Teleport Me feature is the secret browsing tool that enables you to surf the Internet lacking any limitations. Any websites that you open or any information that you transmit passes through the protected Virtual Private Network channel and uses the similar Internet connection that your house or workplace PC uses.

If the main workstation cannot be left operating for some reason, Teleport Me is intended to connect to the iTwin dedicated network services to provide you a private connection. The company maintains dedicated servers all over the Europe, Asia Pacific and the United States.

The Teleport Me feature is a helpful tool, mainly if you are browsing the Internet on hotel or other types of public wireless networks where security is an important issue. Teleport Me takes care that your private information is protected from snooping eyes. It also ensures that no one is tracking your browsing movement. There are no browsing limits which denote that you can browse your social media accounts, can watch programs, and connect in any other activity you usually do online.

C. Office and Home Network Access

You can access approximately everything that is connected to your office or home network using the iTwin connect device. This includes devices such as drives or network applications on an office network, or devices like media servers, cameras, and televisions on your home server. For accessing the network it does not require any set of connections and arrangement. It automatically makes a secure VPN to your network.

D. Secure AES 256-bit Encryption

Hardware grade security is provided in iTwin. AES (Advanced Encryption Standard) 256-bit encryption is a security technology adopted by the US government to

defend top secret classified information. When every part of the iTwin Connect device is paired with one another, a unique encryption key is generated for each session to make sure all information is protected prior to being transmitted over the Internet.

You can also configure the two-factor authentication integrated with the iTwin Connect device. This enables you to setup an optional second password on the one half of the USB device which you bring with you. If you come about to lose this half of iTwin device, without using the second password it cannot be accessed.

E. No subscription or Contract promise

While using iTwin Connect, there is no subscription necessity or contract commitment, you just have to pay a one-time cost of \$130 for lifetime access to the iTwin device. You can also own the device and be able to use it in several ways you like. You do not have to be a mobile expert. You can also use iTwin Connect for personal use as well as to help family members that frequently call you for help with a computer problem. If they have one part of the iTwin device, you can access and managed the Desktop and repair the problem.

IV. BENEFITS OF USING ITWIN CONNECT DEVICE



Fig 3. iTwin Device

Most of the mobile professionals and individuals that want to access their files and information in spite of where they are, select cloud services for backing up and storing important documents. A cloud service is suitable and enables you to access your files from some device with an Internet connection. Many cloud service providers deploy security technologies to guarantee their customers that documents are securely transmitted and stored. On the other hand, not anything is one hundred percent perfect that means a device like iTwin Connect can help you cover up all of your bases in the event of data break or loss.

iTwin Connect device makes sure that your files reside private and protected. as you own the device, it is just functional when attached to the computer; it uses two-factor authentication and military grade security, as well as performs functions that we have discussed in this article. Even if you leave the main computer powered up so you can connect to it from any place, your data and records stay protected.

iTwin Connect device also provides suitable browsing in any case of where you are positioned across the world. 'Teleport Me' feature enables you to select your continent even if you are travelling across the road. For example, if you live in the United States and you are travelling out of the country, you can select your continent as the US and still have the benefit of the programs you watch in the US. This benefit may also work vice versa. If you are travelling in the US and enjoy shows in UK, you can set browsing tool to the UK and access each and every one of the shows you enjoy while travelling. If you are sitting in an airfield waiting for your flight, you can access your desired shows and news sites from any continent. This is a benefit because your device and its IP address otherwise would not allow you to access programming outside of a specific geographic region.

iTwin Connect enables you to choose from locations in the United States, Europe or the Asia Pacific. This means you can grab up on your beloved shows and news while sitting in an airport waiting for your flight since iTwin directs the traffic through their dedicated servers in these locations.

V. ITWIN SECURITY

A. Hardware Grade Security

When two parts of iTwin connect are attached together and inserted into a computer, a arbitrary 256-bit cryptographic key is generated on-board the iTwin device. This cryptographic key is shared among the two halves of the iTwin device using the particular iTwin connector. The cryptographic key never leaves the device. All data and information transferred by means of the two halves of iTwin is encrypted using this cryptographic key. The user can 'join up' the device to generate the keys anytime and any number of times. The keys are saved only inside the device and not known to any other entity.

B. Two Factor Authentication

iTwin device provides 2-factor authentication for advanced security. Access to your data is provided based on two different factors: Something you have – your physical iTwin device.

Something you be familiar with – a password which you have to enter before the iTwin device can be used. Setting an iTwin device password is optional however we suggest that you set the optional password throughout device initialization to protect your data and network in the event that you lose the device. The password set for your iTwin is stored only on the two halves of your iTwin and nowhere else.

C. Remote Disable

In the one half of the iTwin is lost; connection between the two halves of the device can be disconnected using the Remote Disable Feature. This is done by entering a unique disable code in the iTwin Disable Web Centre. The connection between the two halves of iTwin will be disabled within 90 seconds and after that, it is impossible to gain access to your data via the lost device even if somebody finds it.

D. End –to–End Encryption

The shared cryptographic key stored in the two parts of the iTwin device are used to produce session keys which protect all information transmitted over the Internet using industrial strength AES-256 bit encryption.

E. Twin Trust Authentication

Every iTwin half has given a unique device ID and an linked device authentication key, adapted during manufacturing. Every iTwin device also carries certified public certificates of Twin Trust servers, inserted during manufacturing. Before allowing any data transfer, every iTwin is authenticated by iTwin's Twin Trust servers. After authenticating with Twin Trust, two halves of iTwin commonly authenticate each other using their previously shared AES 256 bit crypto key. All communication between iTwin and Twin Trust server is secured using HTTPS protocol

VI. ADVANTAGES

- One-time straight payment gives you lifetime access of the device.
- The capability to disable the device remotely if it is lost or stolen.
- There are no restrictions in terms of file size or type.
- It has secure military grade AES encryption ensures secure file and data transport.
- Personal VPN protects you on hotel as well as public Wi-Fi networks.
- Two-factor authentication provides additional security.
- Access to additional features such as your home or office network as well as the devices connected to it.
- stretchy and safe browsing allows you to maintain your usual browsing activities while you are travelling.
- iTwin Connect is well-suited with both Windows and Mac devices.

VII. DISADVANTAGES

- iTwin connect device is 3.5 inches long in total that means when the parts are separated they are very easy to misplace.
- When the iTwin Connect USB dongle is plugged in it can slow down network performance.
- You have to set up files to share in advance to access them.
- require support for mobile devices.

VIII. CONCLUSION

Without a hesitation, iTwin Connect represents a unique solution for providing secure access to your files and information from a remote location, credit to the AES 256-bit encryption technology. The iTwin connect device performs like to Peer to Peer access excluding the data is only being shared between you and your main computer. If you are travelling with a Windows device and your main computer is a Mac, you can still access your files since iTwin Connect will work with both systems.

The iTwin is a unbelievable solution for the house user who desires to access and change their files remotely and securely. The iTwin bypasses the virtual world of cloud services to turn your physical storage into its own networking solution. The iTwin is simple to use and inexpensively solves the Drop box limitations. For peoples who want to maintain files up-to-date among two computers the iTwin is for them.

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