

iTwin Technology: An Approach to enhance and increase Data Transfer Between iTwin device to mobile device

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Abstract

Prior it has caught wind of the storage of data, transfer of data by the different devices tools and so on. By, step by step upgrade of the innovation iTwin technology is a standout among the most improved innovation for transferring of data from one system to the system in an improved way. Cloud storage is moreover to store the data on the center server. USB flash drive is device which is used to store the data. Yet, the USB streak drive itself have downside that i.e. it's size is too small to carry thus it can be easily lost or we can state we can lose every one of our information which is valuable and imperative. In the event of cloud computing information might be misused if the username and secret code is hacked by third party. To beat each one of these issues, iTwin is the best arrangement. It is the secured USB device that is used to get the chance to, share and adjust each one of the records and media between any two online PCs wherever on the planet. It grants remote record access with no reliability and insurance threats.

Keywords: iTwin technology, Virtual Private Network (VPN), USB (UNIVERSAL SERIAL BUS), computer systems, AES (Advance encryption standard).

Introduction

In the present running scenario transfer of information and data starting with one system then onto the next is extremely basic in a technical term also when we are not in our correspondence or we are travelling somewhere else we have to complete our task as a colleague, staff or any important role we are performing in an organization. So, before we think about all the functionality about iTwin Technology we should have all the data about its fundamental and principle keys to comprehend the primary estimation of this most recent innovation, as a matter of first importance the principle and essential key here is a USB Flash storage device so we should know about this first- A USB streak drive is a specialized device used for information conglomeration that joins a flash memory and a planned Universal Serial Bus (USB) interface. USB streak drives are removable and re-writable. Physically, they are small, solid and strong. The bigger their storage space, the speedier it tend to work.

Now moving on further we must know about the basic functionality of this technology i.e. iTwin to be more clear what actually this technology means. iTwin was introduces by **Lux Anantharaman** an Indian. iTwin is totally new record technology to share and we can also access the data by remotely with a device created by iTwin organization. iTwin is we can say a gadget that associates with your PC and it empowers you to get to archives, information documents and It is

also be comparable as USB as it is made, attaching two sections. One end is related with user's home or work place PC and a user's have to pass on other half reliably with them.



The part that user convey with them is used as a key for getting the relationship with their PC when you are a long way from their PC. When the user interface another bit of the iTwin device to their portable workstations when the users are all over the place, the device makes a Virtual Private Network (VPN) to their home or to the PC that they use in their office. It is on a very basic level the same as like two terminations of a connection, however is does not require the connection. It is less difficult to use than a glimmer drive. It is only a fitting and play device. It is just a connection and play device. With iTwin, it is possible to relate any two online PCs discovered wherever we need to get the information.



Here are the five main features for iTwin technology using are

- Secure sharing
- Secure Access
- Remote Disable
- Limitless Capacity
- Effortless Backup
- Smart key generation
- One time cost, no fees, ever etc.

iTwin, a similar organization that unveiled the iTwin Remote File Access arrangement, as of late presented iTwin Connect which is a device intended to understand mobile professional file access challenges. iTwin Connect is something beyond a remote document get to arrangement, it additionally offers different accommodations that incorporate private web browsing, access to your home system, remote desktop access, and record access from any area. The device encourages versatile experts to set up their own Virtual Private Network (VPN) while in a hurry.

Software Requirement

- Minimum 512 MB, 1GB RAM recommended.
- USB 2.0 Port and a space of 15 MB in hard-disk.

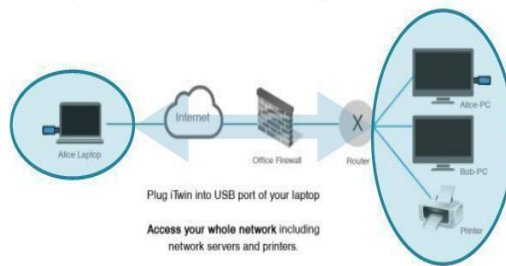
- Internet access in the Broad-band.
- Uploading speed should be 1Mbps.

How iTwin Works

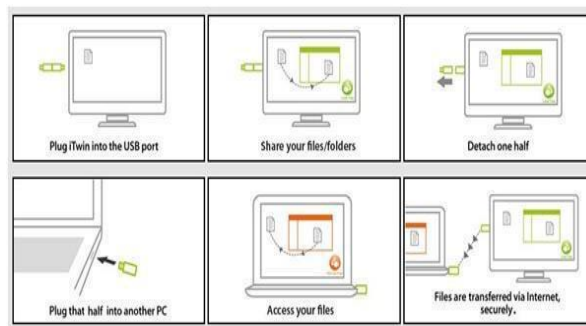
A. Working of this technology

Before moving to the next level we must know all about the working of iTwin technology step by step:

- The iTwin Connect device looks like a USB streak drive that is planned with two USB associations and sets up a sheltered association between two PCs or a protected association between one PC and the iTwin server.
- When the user associate the iTwin Connect device to the rule PC in their home or at work, the item is thus presented and orchestrates the PC for the remote association.
- Once the device is disengaged from the fundamental PC, the user disconnects the two segments of the USB flash which achieves two separate USB devices.



- The two separate devices are especially preservationist at less than two inches which makes it beneficial and easy to pass on with the user.
- When you interface its second part to your portable workstation while in a hurry, it will naturally install itself with no client mediation.
- Moreover, the user may configure an extraordinary security key that handicaps the iTwin in the occasion the user happen to lose it.



- This guarantees you can secure your documents to avert access by an unapproved client.

B. iTwin security and security over accessing files

In general one might say that, iTwin is much the same as a remote device associating two systems on the web and safely exchanging files and data between them securely a system. It is a key to secure more cloud by influencing public network as a private network like hotel networks and public wi-fi hotspot with complete privacy.

- In iTwin technology AES 256 bit Encryption is used for the security purpose. The term AES remains for Advanced Encryption Standard, a symmetric 128-bit square data encryption technique, Belgian cryptographers Joan Daemen and Vincent Rijmen introduced this technique.
- The calculation as its encryption method in October 2000, supplanting the DES encryption it utilized and received by the U.S government.
- The National Institute of Standards and Technology (NIST) of the U.S, AES works at various system layers at the same time.
- Branch of Commerce chose the calculation, called Rijndael (articulated Rhine Dahl or Rain Doll), out of a gathering of five calculations under thought, including one called MARS from a vast research group at IBM.
- By knowing what is AES Encryption technology one must know all about how does it works in iTwin technology step by step:
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 - Having a settled square size of 128-bits and furthermore having a key size of 128, 192, or 256-bits an AES encryption procedure, however Rijndael can be resolved with any key and piece sizes in an alternate of 32-bits, with no less than 128-bits and a most outrageous of 256-bits.
 - AES depends on a plan rule known as a substitution-change arrange, mix of both substitution and combination, and is brisk in both programming and hardware.
 - AES is a variation of encryption family which has fixed block 128,192, or 256-bits of different sizes.
 - AES works on a 4*4 matrix of bytes, named as 'state'.
 - Key size utilized for AES cryptography determines the quantity of reiterations of change adjusts that are required to change over contribution to plain content into yield in cryptography content.
 - 10 cycles of repetitions for 128-bit keys, 12 cycles of repetitions for 192-bit keys, 14 cycles of repetition for 256-bit keys.
 - When we transfer the data in our system to another system using iTwin, AES establish a security of 1 Billion Hashes/sec guess by enabling GPU (Graphics Processing Unit), which is impossible for a human mind to crack the hash code for approx 7.3 Billion people on this planet.
 - And the time of data transfer AES generates 4 GPU as it has 1 Billion hash/sec.
 - Therefore the security level is very strong at the time of transfer of data files within a public network.
 - 4 Billion GPU Packed Computer represents KgGoogle ++, as computer runs 4 billion hashes/sec.
 - Overall here the data have 1 in 4 billion chance of success.

C. iTwin Authentication

iTwin doesn't store any information on itself, it just empowers a safe association between two PCs and information must be gets to on the off chance that an user have the physical iTwin with the client.

The physical iTwin with the user and it is confirmed by iTwin's Trust Servers and both iTwin and iTwin's server is secured utilizing industry quality HTTPS(RSA 1024 Bit, 128 Bit RC4 protocol),the two parts are commonly validate each other utilizing their pre-shared AES 256 piece crypto key as portrays prior.

D. iTwin/USB/Cloud Computing Comparison

Features	iTwin	USB	Cloud Storage
Ease of installation	Plug 'n' Play no configurations no setups needed.	Need to download software by visiting official pages and then install and configured.	Need to download software install and configure it. Create, remember and use login.
Capacity	Access to computer's entire hard drive and any attached storage.	2 GB to 256GB (Depending on model).	Not defined yet.
Data Encryption	AES 256 bit	For encryption needs addition software required.	AES Encryption
Security and privacy	Hardware based security in additional to password.	No password required.	Password required.
Storage limit & Monthly fees	Files resides on your own computer so no storage limit.	Storage limit and no monthly fees require.	First few GB's free then for excess you have to pay monthly fees.
Remote Editing	Directly edit your home/office files remotely.	Editing of data not available.	Remote editing requires 2 nd copy to be

E. iTwin Advantage

Following are the advantage of iTwin Technology:-

Onetime payment and it will give the lifetime access of the device.

1. The device after we lost the second half can be destroyed remotely.
2. File size is limitless.
3. AES encryption technique is applied so that its data is secure very strongly.
4. Personal VPN protection, while using wi-fi and hotspot.
5. Additional security with two factor authentication.
6. Its connection is well-suited with both windows and Mac device.

F. iTwin Disadvantage

Following are the disadvantage of iTwin

1. Interfaces 3.5 inches in length in complete which implies when two parts of the device are separated, turns out to be anything but difficult to lose.
2. When the devices are connected to it can back off system execution.

G. iTwin Multi: The latest Technology for business

If it is said in general about the updates or enhancing the device of Itwin technology Itwin Multi has introduced. The organization has declared Multi; a free update that will enable clients to share records put away on a Windows machine or Mac with two or three their colleagues in the meantime.



When you catch the refresh, connecting various iTwins to a similar PC will permit remote access for numerous clients by means of network. This bit of unit enables you to avoid the cloud while working together on ventures as the records never leave the host machine. Existing iTwin clients will be incited for a refresh while connecting to the devices all in all. Every one of the points of interest on how the tech functions are in the PR, soon after the break.

Proposal For The Future Concern

As it is realized that by the previous work and research iTwin devices have advantages along with some disadvantages also. One of the drawbacks of this device is its network performance and sharing of files on network. As mentioned earlier in drawbacks one of the most important disadvantages of this device is when the USB Dongle plugged in it can slow down the network performance. So, most probably this problem occurs in technically by the high conjection on the network. And second thing is user have to setup files to share the data in advance on the network by using this device.

So, to enhance this technology in updated form, when the genuine user connect the first half of the device to the main computer and second half to the personal mobile device or whatever the device which they are using to share the files must save to the database which will help the user for fast access and for better experience because when again andb again device will connect it won't generate a new device login it may just save the data login to the device or on memory where they saves all the data which will not increase the conjunction yes sure secret key will be asked to enter but the device login should not be refresh as it installed earlier.

Conclusion

The iTwin - a straightforward and suitable answer for the clients who are not prepared to get to their data or records which are significant at whatever point they have to alter and use the data or document information whether they are a long way from workplace, homes or travelling. The iTwin avoid the virtual world to cloud organization to change your physical stockpiling into its own system arrangement. iTwin Connect addresses a best answer for giving secure access to your records and information from a remote territory, credit to the AES 256-piece encryption innovation. The iTwin interface devices perform out of the opportunity to Peer to Peer get to notwithstanding the data is simply being shared

among you and your own PC. The iTwin is anything but difficult to use and monetarily enlightens the Drop box obstructions. For individuals in a gathering who need to keep up archives and information achievement among various PCs the iTwin multi is for them. General iTwin is exceptionally fundamental for the better innovation in the present running and the proposed work states the working process fast on the network.

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