



# New Innovation in USB and Cloud Storage-iTwin

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## Abstract:

In this research Paper it is proposed that A USB flash drive is a data storage device that abides of flash memory with an USB. A Cloud Storage where the data is stored in the cloud that is remotely present and can be accessed as and when needed. But a disadvantage of this USB is its miniature size due to which it can easily be lost. This is a problem if the data present in it is sensitive. In Cloud Storage the data can be misused if the username and password of an account to access the storage is hacked by someone. There are many disadvantages like limited storage, security, back up, temporary files. iTwin is a 'limitless' usb mechanism that permits users to access, modify & exchange all their files & media any two online computers anywhere in the world. The only limit is the size of your computer's hard drive. iTwin is a new unfolding that allows remote file access without the any risks of the cloud and USB flash drives. It's can be access as a USB with no specific installation. iTwin uses cryptographic protocols and algorithms. It has attributes like two directional file access, no temporary files.

**Keywords:** usb, iTwin, cloud storage, security, algorithm

## 1.INTRODUCTION

iTwin takes the idea of remote connection and transfers it to hardware. A simple two-part USB drive allows one user to plug it in to one computer and then snap off and hand the second part to someone else with another computer. They will then have instant access to the other computer. It is illusion that there is a hard line cable joining two computers all over the world, but in reality there is no cable, only the USB drives and the Internet. The idea came when they actualized that distance access to another computer was very complicated for maximum end users. Everyone knows how to use USB drives, but those usb do not have ample space to share other computer's hard drive, or they are not secure enough. So iTwin combines the two technologies.

This is a product designed for the mall, not only technology oriented, though they're obviously welcome to buy and use it as well, iTwin notes. 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 is 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[1]

## 2.FEATURES

Like A Limitless Capacity Secure USB Drive iTwin allows you to securely access your entire hard drive. It's as if you are carrying an access-key to all your files in a device that fits in the palm of your hand. iTwin lets your data stay safely at home and anywhere. Remotely modify shared files from any area. iTwin allows you to keep a single version on one computer, with you and your chosen iTwin partner collaborating directly on this version.

Say goodbye to multiple versions of files flying around by email. Backup your data from anywhere When you are on the

road, you can use iTwin to move copies of files from your laptop to your home or office computer. If you are traveling and taking lots of pictures, you can free up your SD card by moving files onto your laptop and transferring them back home. It keeps your data safe and secure. One-time cost. No fees, ever don't pay for cloud storage. Don't pay subscription fees for file access. Don't get locked in. You have all the storage you need on your computer and home hard drive. Data Security iTwin does not stock any information on it. It just permits a secure connection among both computers.

Your remote data can only be accessed if you have the physical iTwin with you. Additionally, you can set up your iTwin to require a password. iTwin includes a feature that allows you to remotely disable the connection should you lose your remote iTwin half. So you can rest assured that your data is safe, even if you lose your iTwin device. If you have ever lost a portable memory device, you know that terrible feeling. We want to make sure this never happens to you again. It even makes use of AES(256 bit key encryption) in order to transfer the data from one computer to another[4]

## 3.WORKING

### How to use iTwin?

On connecting iTwin, you will see a formal window pop-up, like you normally see when you connect a usb on daily basis. Drag and drop any of the file or folders or any other content that you want to carry where ever you goblet your computer be connected with one half of the device of the iTwin

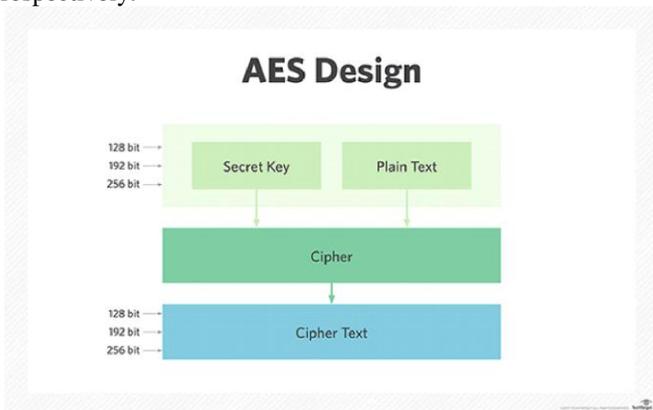
Disassemble the other half of iTwin and carry it with you whenever necessary. Whenever desired anywhere, you can remotely access the shared files, easily by plugging the half you are carrying into any online computer, anywhere. iTwin allows you to transfer files to and from your home computer, Or your office computer. iTwin also allows you to edit the shared files on a remote computer, while keeping them on that remote computer [3]



SOURCE:<http://www.seminartopic.in/2013/12/itwin-technology.html>

#### 4.AES ALGORITHM

AES consist three block ciphers: AES-128/ AES-192 / AES-256. Each cipher encrypts and decrypts data in blocks of 128 bits using cryptographic keys of 128-, 192- and 256-bits, respectively.



Source-Google.com

Symmetric (also known as secret-key) ciphers use the same key for encrypting and decrypting, so the sender and the receiver must both know -- and use -- the same secret key. All key lengths are deemed sufficient to protect classified information up to the "Secret" level with "Top Secret" information requiring either 192- or 256-bit key lengths. There are 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 rounds for 256-bit keys -- a round consists of several processing steps that include substitution, transposition and mixing of the input plaintext and transform it into the final output of ciphertext. The AES encryption algorithm sets a number of transformations that needs to be performed for the data stored in an array. The first step in this algorithm is to put the data into an array; after which the cipher transformations are done over a number of encryption rounds. The counts of rounds are decided by the key length, with 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 times for 256-bit keys.

- First step is substitution
- Second step is transformation
- The third step is mixing columns
- Last step is exclusive OR(XOR) operation performed on each column using a different part of the encryption key longer keys need extra rounds to complete.[5]

#### ADVANTAGES

- One-time payment gives you lifetime access of the device.
- The facility to damage the device remotely if it is misplaced or poached.
- There is no limit in terms of file capacity or characteristic.
- Two-way certification incorporates new security.

- Access to new characteristics such as your home or office net and the devices connected to it. [2]

#### DISADVANTAGES

- iTwin device is very small which means when the parts are detached they are very easy to misplace.
- When iTwin USB is plugged in it can slow the network performance.[2]
- You have to set up files to share in prior to connect them require support for mobile..

#### 5. CONCLUSION

iTwin Connect shows a rare solution for catering secure connection to your files and information from a remote location, the AES 256-bit encryption technology is used in this iTwin. The iTwin works like a Peer to Peer access except the information is shared between 2 computers. If you are traveling with a MAC device and your main computer is a Windows, you can still access your files since iTwin works with both the systems. iTwin is easy to use with an installation and setup procedure that does not require human intervention. Also, the file access is restricted to the information that is present on the other part of the iTwin device in use. This helps to enhance data security while minimizing the risk of rashly exposing critical data. In terms of users, iTwin Connect is suitable for mobile professionals and small business owners since it helps to reduce the costs associated with implementing Virtual Private Network technology. The device can also be used by individuals that simply want the peace of mind that their data is secure and the convenience to access it at any time.

#### 6. REFERENCES

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