

Accessing Wi-Fi Services through BU-Standard Channel with 802.1x Encryption Using Windows XP and Windows Vista Operating System Devices

1) Introduction

Starting from May 2009, the Kowloon Tong campuses have been installed with new Wi-Fi communication devices to replace the obsolete wireless LAN equipment.

ITO targets to provide 80%-90% of wireless network coverage in the main campus at the start of the academic year in 2009. As the installation work in some buildings is still in progress, users are encouraged to find out the latest coverage areas at the Wi-Fi Homepage at <http://www.hkbu.edu.hk/~wifi>. ITO has a plan to provide a full coverage of the Kowloon Tong campuses by the end of 2009.

Instead of only having the previous non-encrypted data communication, the new Wi-Fi communication devices offer three access channels namely *BU-standard*, *BU-Web* and *BU-Guest*.

The *BU-Standard* channel adopts an industry standard 802.1x encryption protocol. All data transmitted between the access points and the portable devices are encrypted for preventing any middle-man attacks. This channel serves exclusively for the University staff and students who are having the ITO computer account with the unified password. Before using this channel, users are required to take an initial setup for a digital certificate and access profile in their machine. Then they can enjoy a quick access connection afterward. This channel provides all types of network services including web surfing, incoming and outgoing mail services, instant messaging etc. It is the recommended channel for the University community. This document presents the procedures in accessing the University Wi-Fi services through this channel from a machine operating with the Windows XP and Vista platform.

The Web Portal channel, named *BU-Web* channel, however, does not provide any data encryption. There is no need for any pre-usage installation when accessing this channel. Users are required to login the Web portal for authentication using the ITO computer account with the unified password. All web accesses will automatically pass through the proxy server. This channel aims to provide a quick and immediate tool for the University members to access the network for general purpose only without too much concerns of data privacy. It nevertheless only serves web surfing and incoming messages retrieval but no other network services. Please read the related document titled "[Accessing Wi-Fi Services through Web Portal Channel Using Windows XP and Windows Vista Operating System Devices](#)" from the ITO website.

The *BU-Guest* channel provides a path for the visitors in using the Wi-Fi services. Departments/Units/Offices should contact ITO for establishing a visitor account before their visitors can access this channel. Though this channel will provide all general types of network services, the bandwidth of this channel is somewhat smaller than the *BU-Standard* and *BU-Web* channels.

2) **Procedures for Inclusion of BU Digital Certificate in the Machine Registry on Windows XP and Windows Vista Platform**

For security reasons, machines accessing the *BU-Standard* Wi-Fi channel have to include the BU Digital Certificate. The installation of the Digital Certificate to the system register needs to be taken only once.

- 2.1 Make use of a network connected PC to download the registration entity file named *HKBU_CA.reg* to a USB device from the following website:

<http://www.hkbu.edu.hk/~wifi>

- 2.2 Connect the USB device to the notebook that will be used for accessing the BU Wi-Fi services.
- 2.3 Locate the registration entity file *HKBU_CA.reg* as shown in Figure 1 and then double click on the file to invoke its installation to the machine registry.

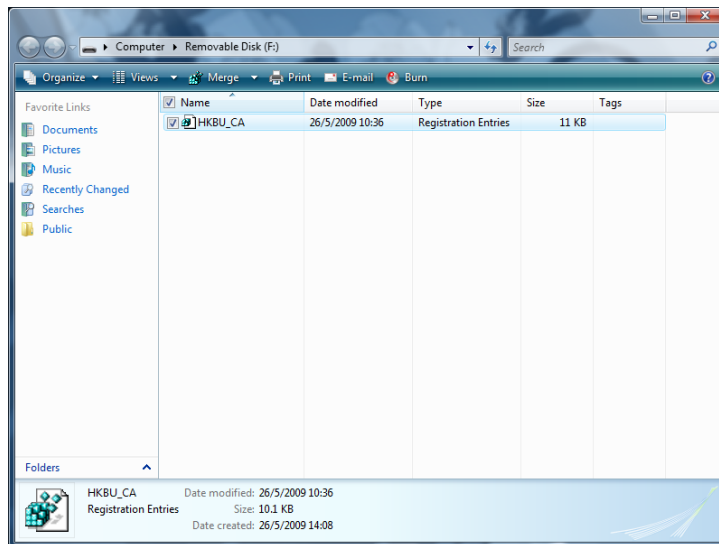


Figure 1: *HKBU_CA.reg* in the Removable Disk (USB)

- 2.4 When the Window as shown in Figure 2 asks for the permission to start the Registry Editor to change the values of the components in the registry, grant the permission and continue.

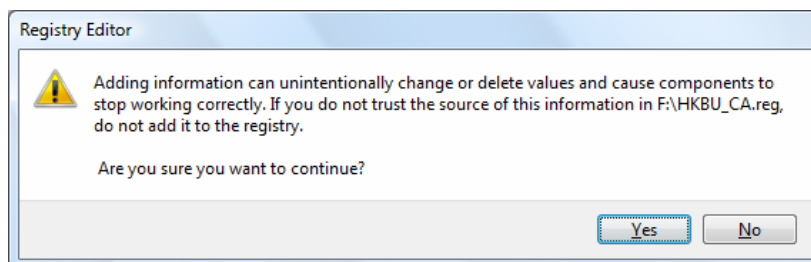


Figure 2: *Warning for Modifying Windows Registry*

- 2.5 A message as shown in Figure 3 will be given showing the keys and values of the HKBU Digital Certificate (*HKBU_CA*) have been added to the registry.

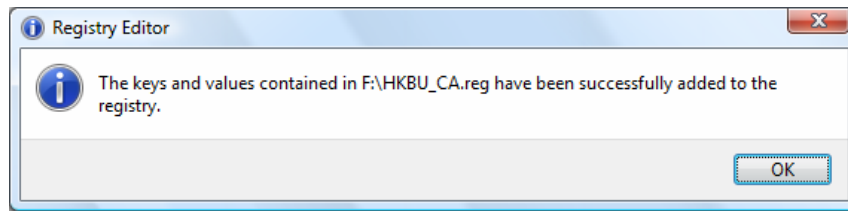


Figure 3: Inclusion of the HKBU Digital Certificate to the Registry

3) Setting up the Wireless Network Access Profile

For your access convenience, you may set up a profile for using the *BU-Standard* Wi-Fi channel. Again, the profile setup needs to be done once.

- 3.1 Open the [Control Panel](#) and select the [Network and Internet](#) option.
- 3.2 In the Network and Internet Window, select the option Network and Sharing Center.
- 3.3 In the *Network and Sharing Center* Window, select the [Manage wireless networks](#) option.
- 3.4 A list of all your Wireless Network profiles similar to Figure 4 will be given.

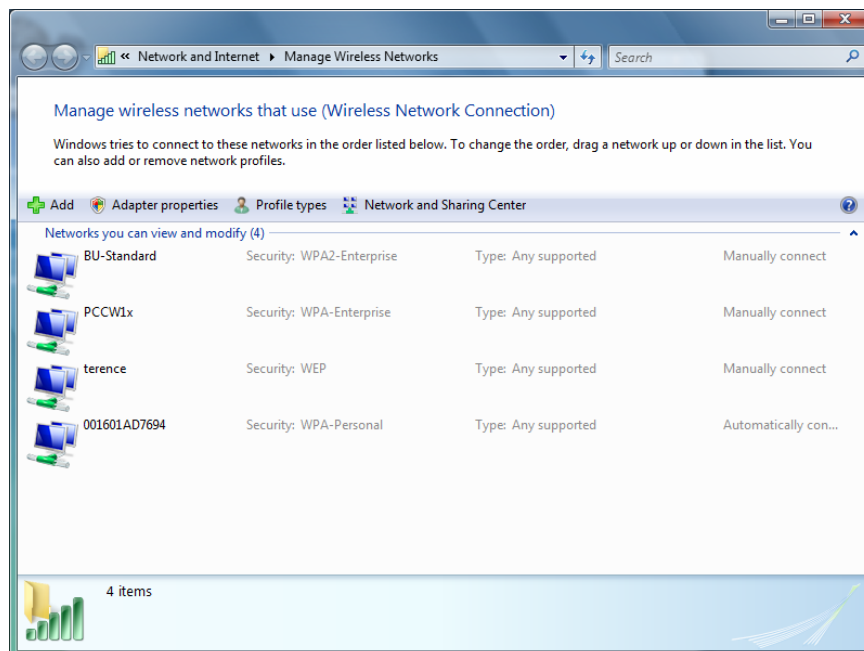


Figure 4: Managinig Wireless Networks

- 3.5 If you cannot locate the *BU-Standard* access profile, perform the following steps else go the step 3.6:

- 3.5.1 Press the [+Add](#) button.

3.5.2 Select the option of [Manually create a network profile](#).

3.5.3 When asking for the wireless network information as shown in Figure 5, enter the following details:

Network name : [BU-Standard](#)
Security type : [WPA2-Enterprise](#)
Encryption type : [AES](#)

and uncheck the options of [Start this connection automatically](#) and [Connect even if the network is not broadcasting](#) for power saving.

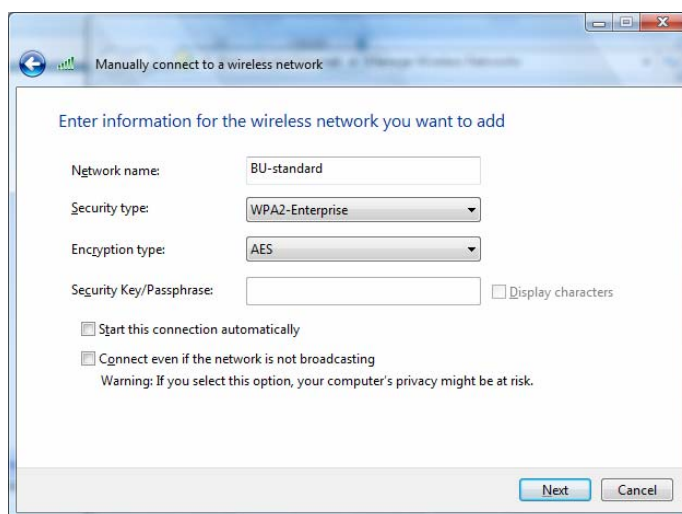


Figure 5: *Manually Connect to a Wireless Network*

3.5.4 A message of adding the profile successfully will be given.

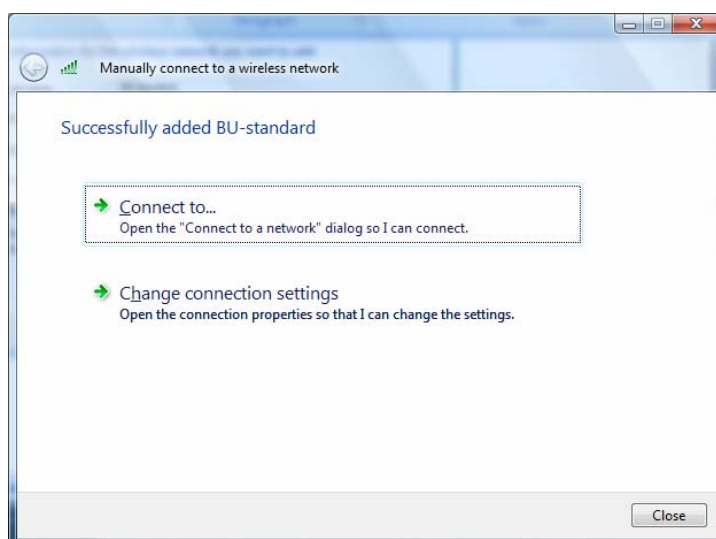


Figure 6: *Successful Adding Profile*

- 3.6 If you can locate the *BU-Standard* profile, double check the properties according to your preference. Figure 7 shows the recommendations.

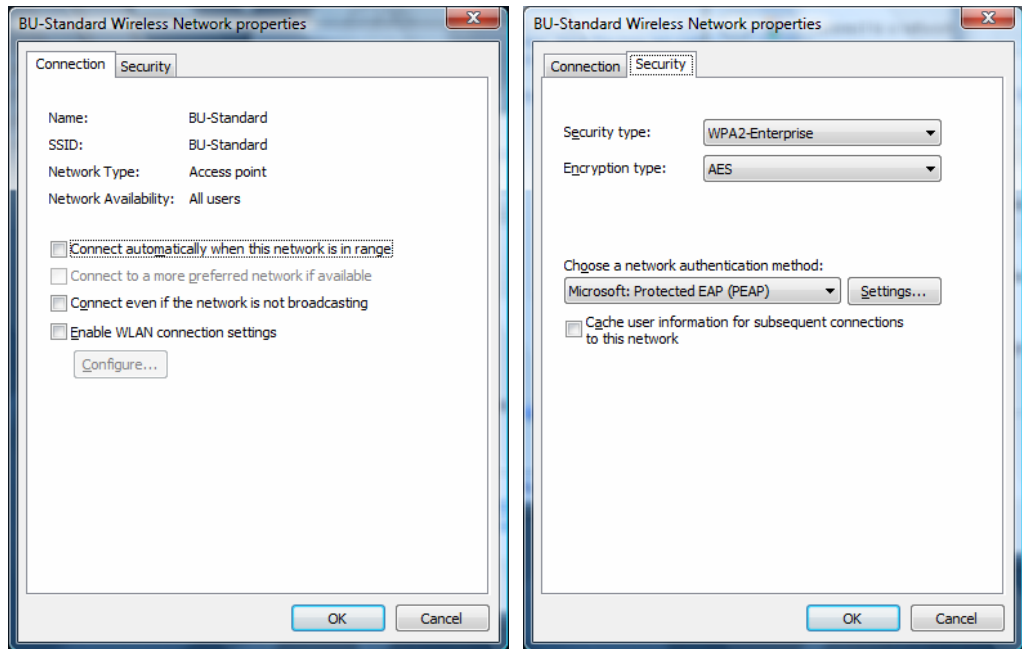


Figure 7: Recommendations of the Wireless Network Properties

For power saving, do not check under the **Connection** tab for the items **Start this connection automatically**, **Connect even if the network is not broadcasting** and **Enable WLAN connection settings**. For your own security to prevent someone using your machine for network connection, also do not check the item under the **Security** tab, **Cache user information for subsequent connections to this network**.

4) **Accessing the BU-Standard Wi-Fi Encryption Channel**

- 4.1 At the right bottom corner of the Windows status bar (near the system clock), click the network connection icon to ensure the wireless networks can be detected as shown in Figure 8.

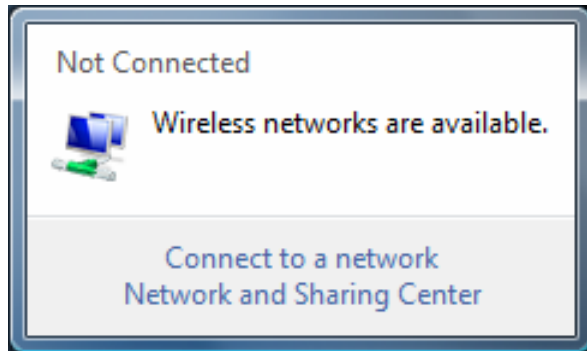


Figure 8: Availability of Wireless Networks

- 4.2 Select the **Connect to a network** option.
- 4.3 A list of wireless network access points similar to Figure 9 will be given. Select the **BU-Standard** access point.

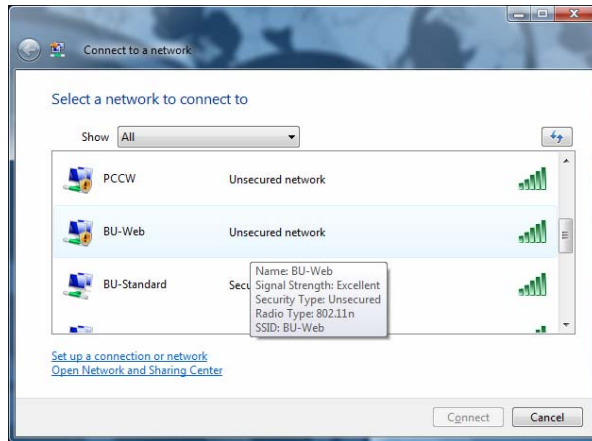


Figure 9: List of Wireless Networks

- 4.4 During the connection, when a window for asking logon information is given as shown in Figure 10, select the option **Enter/Select additional log on information**.

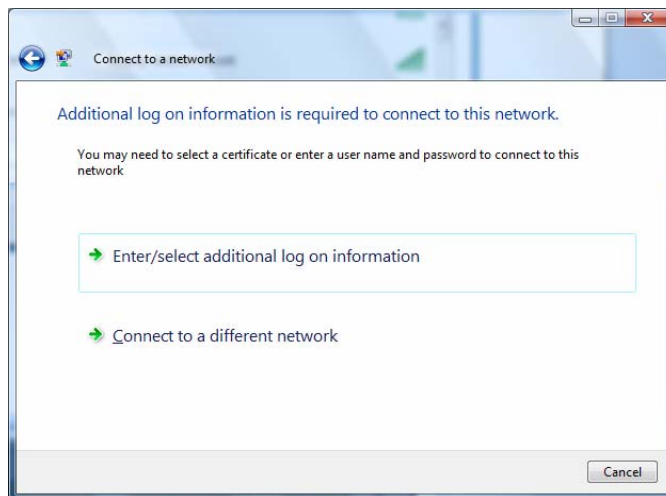


Figure 10: Additional Information for Connection Session

- i) A screen as shown in Figure 11 for entering credentials is given, enter your ITO unified username and password (i.e. same as your email user name and password if you are using ITO mail services).

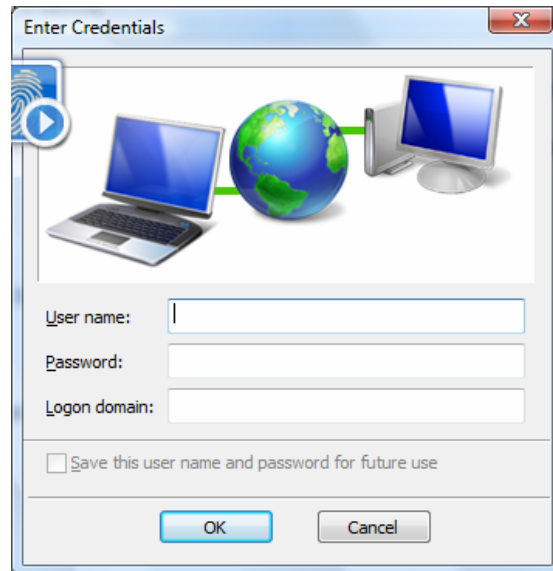


Figure 11: Logon Screen

There is no need for you to specify the logon domain name.

- ii) When asking for validating HKBU as the Root Server Certificate as shown in Figure 12, press the OK button for the confirmation.

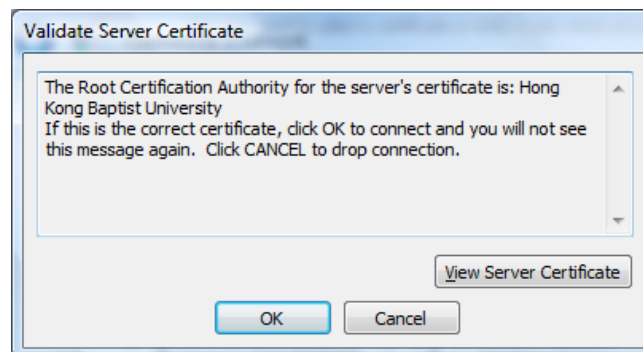


Figure 12: Server Certificate Validation

- 4.5 A message of successfully connected to *BU-Standard* as shown in Figure 13 is given.

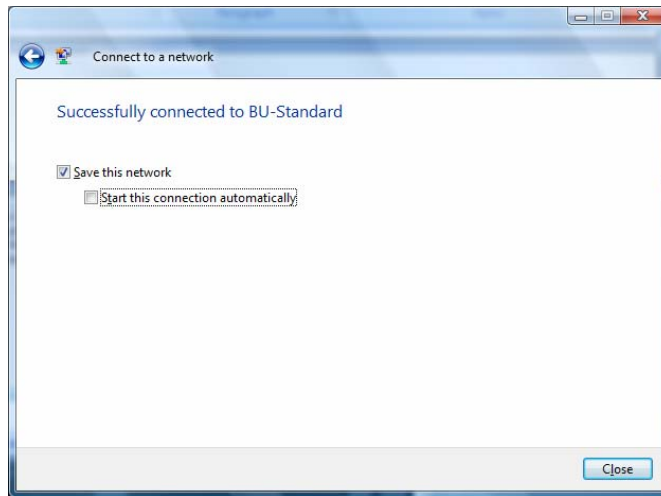


Figure 13: Successful Connection Message

You may check the option to save this network. However, for your flexibility, do not check the option [Start this connection automatically](#).

- 4.6 With the connected session, you can make use of a browser for web surfing or a mail client for receiving/sending messages. Instant messaging such as ICQ, MSN are also supported.

- 4.7 To terminate the connection session:

- i) Click the [network connection icon](#) at the right bottom corner of the Windows status bar (near the system clock).
- ii) Select the [Connect or disconnect](#) option as shown in Figure 14

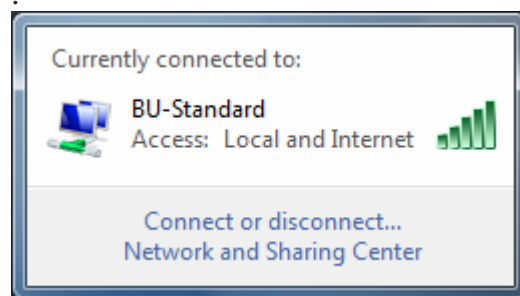


Figure 14: Current Wireless Connection

- iii) Highlight the *BU-Standard* access point and click the **Disconnect** option button as shown in Figure 15.

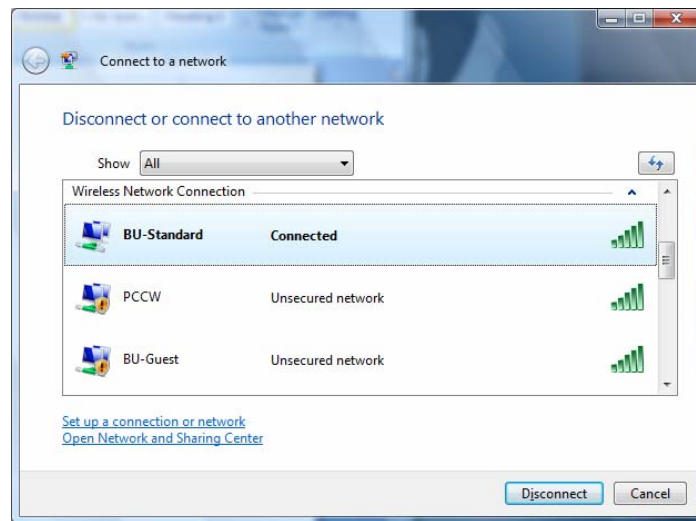


Figure 15: *Disconnect Wireless Connection*

- iv) When the confirmation screen as shown in Figure 15 is given, click the **Disconnect** button. The connection will be terminated.

Updated on: 27 May 2009