



# SecureChat for Skype

Demo

Teo Yong King  
Nanyang Polytechnic

# SECURE MESSAGING USING OUTBAND MODE AUTHENTICATION

Enhances instant messaging with authentication and confidentiality

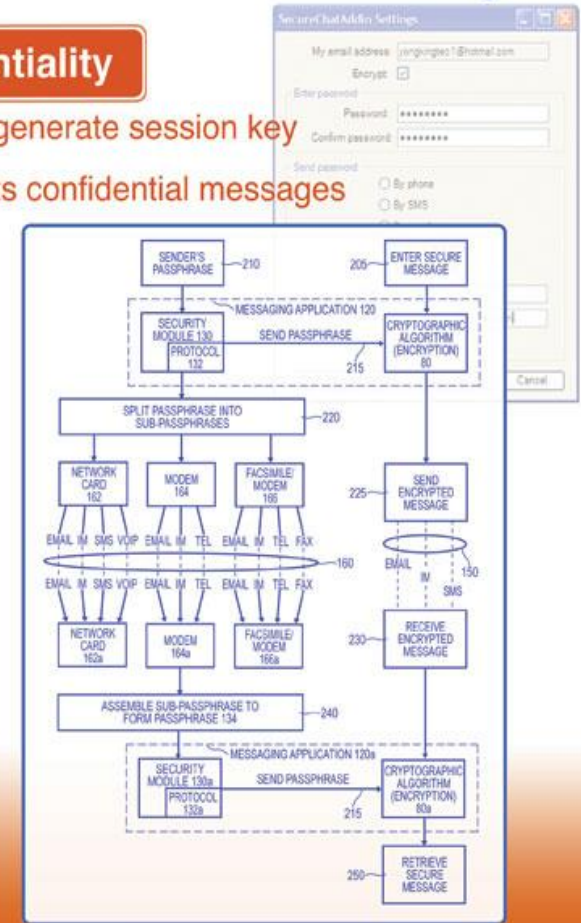
## Multi-Factor Authentication

- Splits passphrase into sub-passphrases
- Uses multiple outband communication channels to exchange sub-passphrases
- Provides multi-factor authentication, with each channel contributing to one factor

## Message Confidentiality

- Uses passphrase to generate session key
- Encrypts and decrypts confidential messages with session key

### Instant Messaging



Partners:



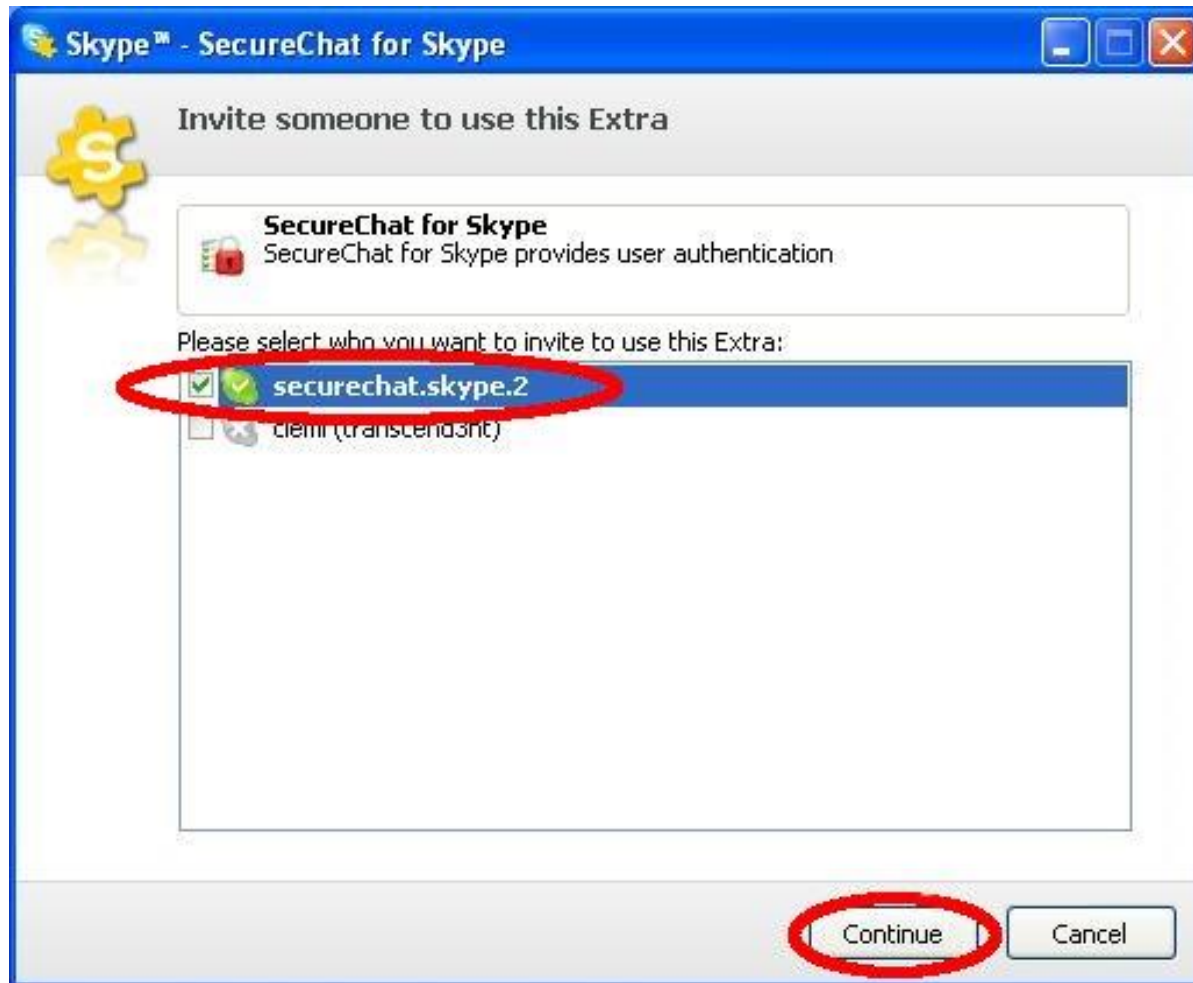
NYP Nanyang Polytechnic

Microsoft

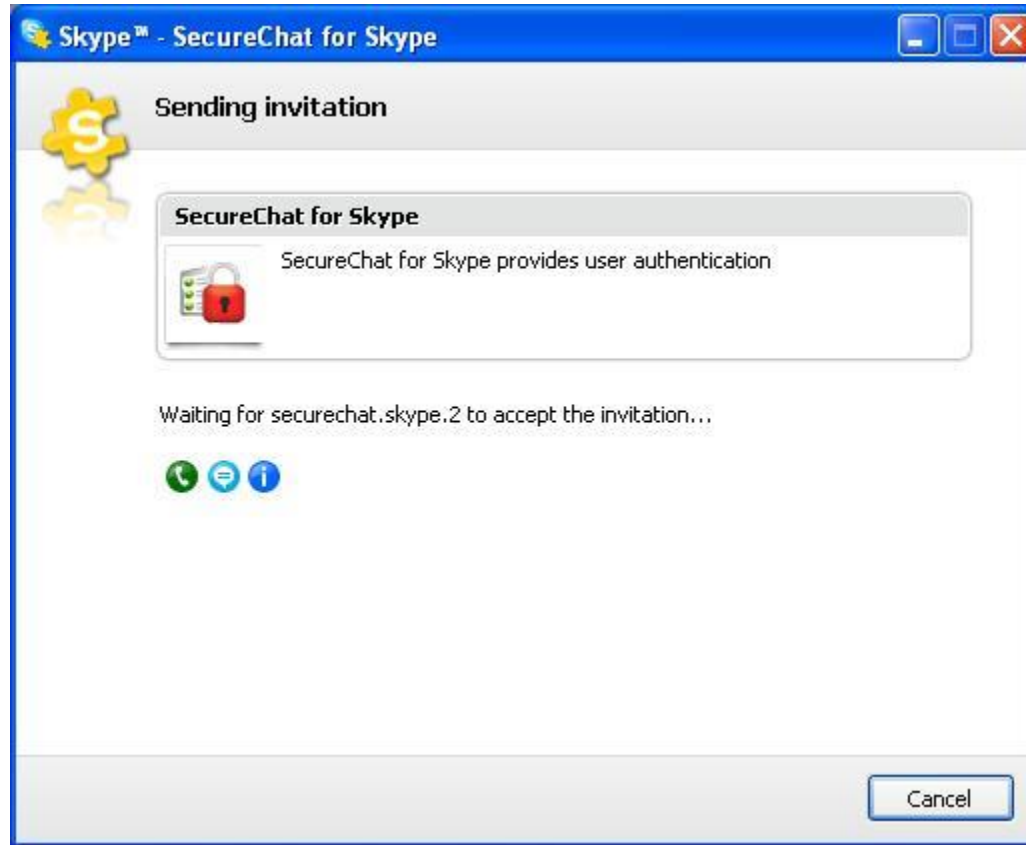
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# Sending Invitation



# Sending Invitation



# Accepting Invitation





# Configuring SecureChat for Skype



The image shows a screenshot of the 'SecureChat for Skype' configuration window. The window has a blue title bar with the text 'SecureChat for Skype' and standard Windows window controls (minimize, maximize, close). Below the title bar is a menu bar with 'Tools' and 'Help'. The main area has a blue header with the 'SecureChat for Skype' logo and title. The configuration is divided into several sections: 'Authentication Type' with radio buttons for 'One-Way' (selected) and 'Two-Way'; 'Passphrase' with 'Enter' and 'Confirm' fields, both containing 'xxxxxxx'; 'Passphrase Channel(s)' with a 'Send by:' label and two checked email addresses: 'Email Address 1: securechat.skype2@hotmail' and 'Email Address 2: securechat.skype.2@msn'; and 'Encryption' with a checked box for 'Encrypt incoming and outgoing messages' and a dropdown menu for 'Encryption Algorithm' set to 'Advanced Encryption Standard 256 bit (AES)'. At the bottom are three buttons: 'Save Contact', 'Send', and 'Close'.

SecureChat for Skype

Tools Help

**SecureChat for Skype**

Authentication Type

- ☒ One-Way
- ☐ Two-Way

Passphrase

Enter : xxxxxxx

Confirm : xxxxxxx

Passphrase Channel(s)

Send by :

- ☒ Email Address 1 : securechat.skype2@hotmail
- ☒ Email Address 2 : securechat.skype.2@msn

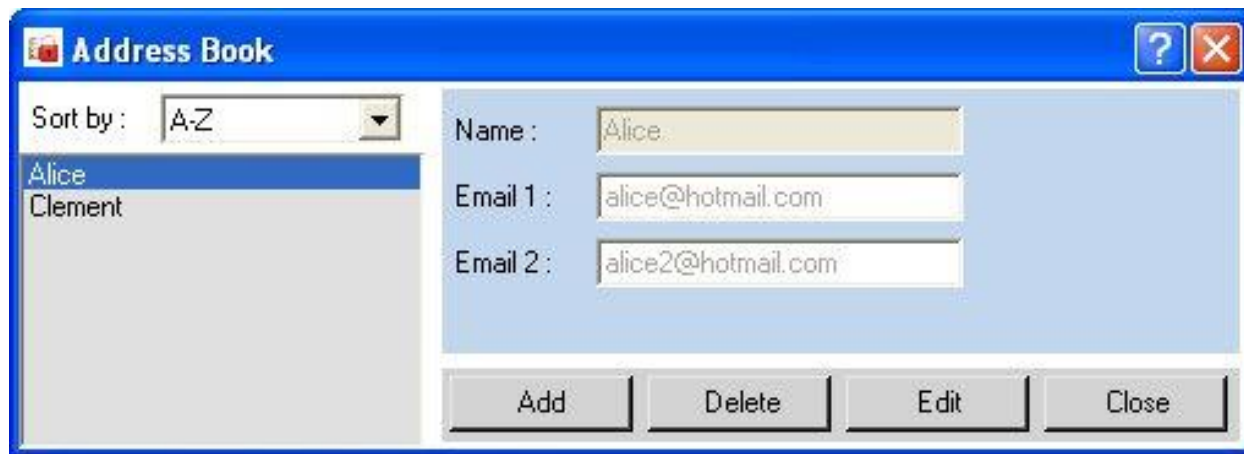
Encryption

- ☒ Encrypt incoming and outgoing messages

Encryption Algorithm : Advanced Encryption Standard 256 bit (AES)

Save Contact Send Close

# Managing Contacts



The screenshot shows a window titled "Address Book" with a blue title bar. On the left, there is a "Sort by:" dropdown menu set to "A-Z" and a list of contacts: "Alice" (highlighted) and "Clement". On the right, the details for the selected contact "Alice" are displayed in a light blue area. The details include a "Name:" field with "Alice", an "Email 1:" field with "alice@hotmail.com", and an "Email 2:" field with "alice2@hotmail.com". At the bottom of the window, there are four buttons: "Add", "Delete", "Edit", and "Close".

Sort by:	Name:	Email 1:	Email 2:
A-Z	Alice	alice@hotmail.com	alice2@hotmail.com

# General Configuration





# Configuring Email



The screenshot shows a Windows-style dialog box titled "Options" with a blue title bar and standard window controls (minimize, maximize, close). The dialog has two tabs: "General" and "Email", with "Email" currently selected. The "Email" tab contains the following fields and controls:

- SMTP Server :** An empty text input field.
- SMTP Server Port :** A text input field containing the value "25".
- Enable SSL (Secure Socket Layer) :** A checked checkbox.
- Username :** An empty text input field.
- Password :** An empty text input field.
- Send test mail to (Optional) :** An empty text input field, followed by a "Send" button.

At the bottom of the dialog, there are three buttons: "Default settings", "Save and exit", and "Cancel".

# Receiving Passphrase

- ▶ Message with Subpassphrase 1

“SecureChat for

Skype/1/0/secure.skype.1/AES256/SPP/1/2/**passp**”

- ▶ Message with Subpassphrase 2

“SecureChat for

Skype/1/0/secure.skype.1/AES256/SPP/2/2/**hrase**”

- ▶ Passphrase

→ “**passphrase**”

# One-Way Authentication



# Two-Way Authentication



The image shows a Windows-style application window titled "Two-Way Authentication". The window has a blue title bar with standard minimize, maximize, and close buttons. Below the title bar is a menu bar with "Tools" and "Help". The main content area has a blue header with the "SecureChat for Skype" logo, which includes a padlock icon. Below the header, there are three sections for input:

- Received Passphrase:** A label "Received Passphrase" followed by a text input field containing "Enter : " and a masked password field with "xxxxxxx".
- Passphrase for Sender:** A label "Passphrase for Sender" followed by two text input fields. The first is labeled "Enter : " and contains "xxxxxxx". The second is labeled "Confirm : " and contains "xxxxxxx".
- Passphrase Channel(s):** A label "Passphrase Channel(s)" followed by a "Send by :" section. This section contains two checked checkboxes: "Email Address 1 : securechat.skype.1@msn" and "Email Address 2 : securechat.skype.1@gma".

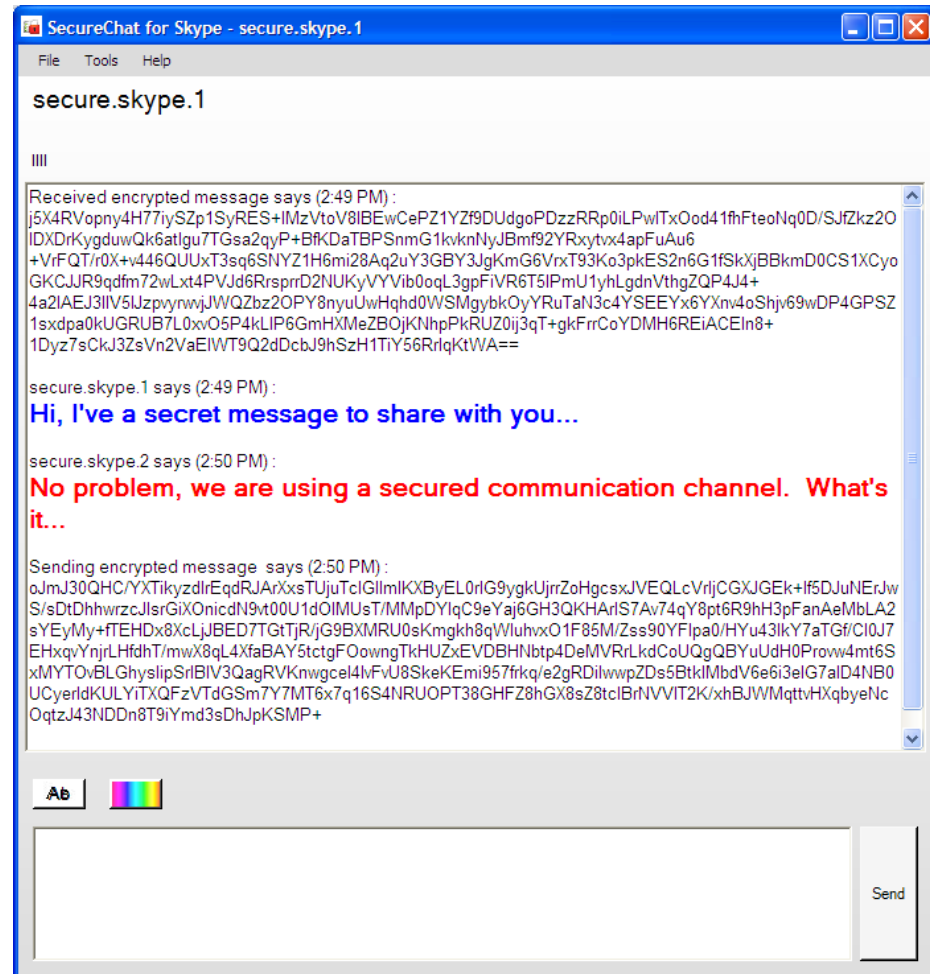
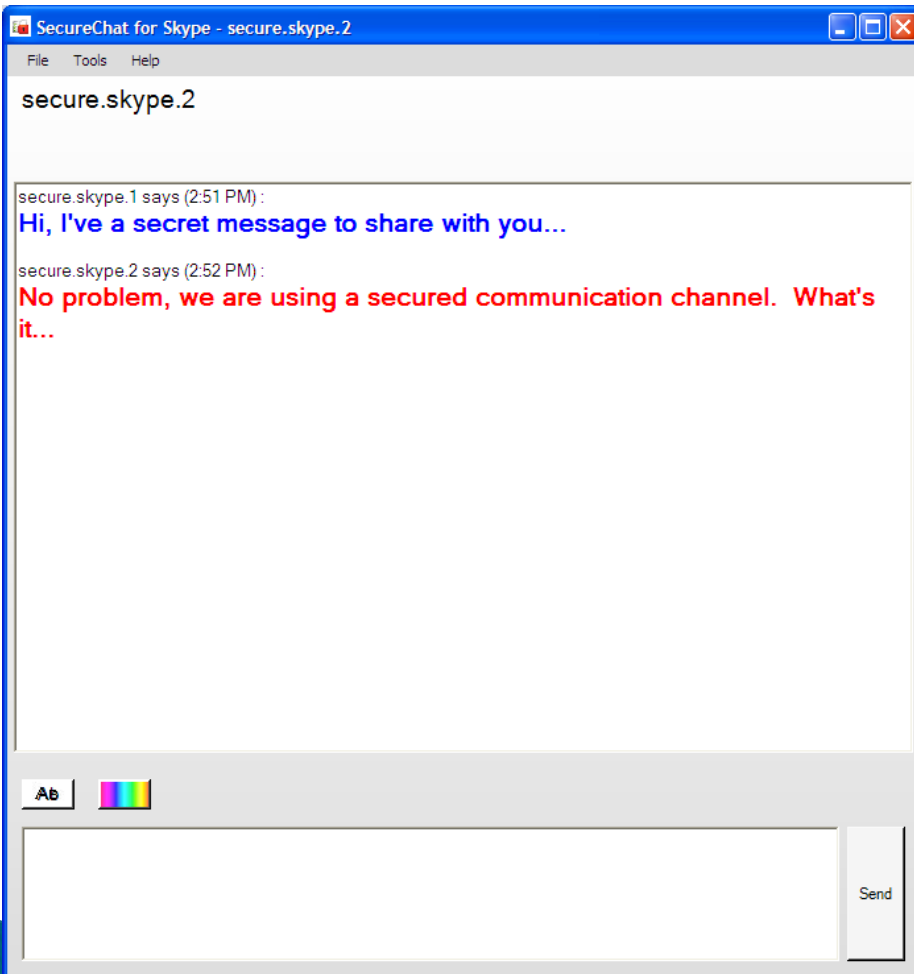
At the bottom of the window, there are three buttons: "Save Contact", "Send", and "Close".

# Two-Way Authentication





# Secure Chatting



End of Demo!