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**NetVanta Unified Communications Technical Note**

IMAP Integration with Google Mail

Introduction

The UC server has the capability to integrate an Exchange or Internet Message Access Protocol (IMAP) email account to use as a message store for unified messaging. Using this capability, you can receive voice and fax messages directly in your inbox and manage your voice, fax, and email messages from any telephone.

Google Mail (Gmail) supports a secure implementation of the IMAP protocol for accessing messages. By installing a third-party utility, Stunnel, on the UC server system to convert non-secure IMAP to secure IMAP, the UC server can use Gmail as a message store. This can be done independently for as many users as desired.

The following diagram illustrates the implementation described in this document:
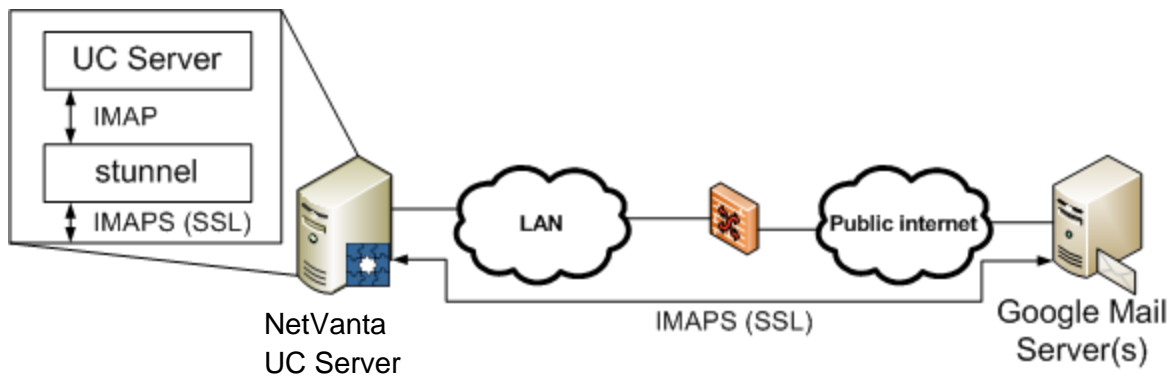
Applicable Software Versions

The following software versions apply to this technical note:

NetVanta UC Server (all editions):	4.3.2 and later
Stunnel:	4.24

Installing and Configuring Stunnel

Stunnel is a Secure Sockets Layer (SSL) proxy. It can convert any single-socket Transmission Control Protocol (TCP)-based protocol from non-SSL to SSL or vice-versa. In order to have the UC server connect to Gmail, an SSL proxy is required to convert the IMAP connection from non-SSL to SSL. When configured correctly on the UC server, this provides a secure solution, equivalent to the UC server directly supporting SSL for IMAP servers.

To provide an IMAP connection to Gmail, Stunnel needs to be installed. Stunnel acts as a bridge to provide connectivity between the UC server and Gmail.

Downloading and Installing Stunnel

Stunnel is open-source software published under the GNU Public License (GPL). It is distributed in both source and compiled versions. Please be sure that the terms of Stunnel licensing are acceptable. Stunnel will be installed on the UC server system.

To download and install Stunnel:

1. Using your Web browser, navigate to *http://www.stunnel.org/*.

2. Locate the download page for the Windows binaries. At the time of writing, this could be done as follows:

    - In the left-hand navigation menu, select **Download**.

    - Select the link **Get the Windows Binaries**.

3. Select a particular version to download (for example, *stunnel-<version#>-installer.exe*), right-click on the desired version, then select **Save target as** to save the file. You will be prompted to select a location to save the file; select an appropriate temporary location on the UC server system.

4. When the download has completed, locate the downloaded file and double-click it to run the installer. You may be prompted with one or more security warnings. You will need to accept these warnings and run the program to install this tool.

5. Follow the instructions presented by the Stunnel installer to properly install all components. These instructions rely on installing the **Start Menu Shortcuts**; do not deselect this install component.

Configuring and Starting Stunnel

Stunnel needs to be configured to secure and relay IMAP from the UC server to Gmail. Once it is configured, it needs to be installed and configured as a Windows service so that it will automatically start each time the UC server system is started.

To configure and start Stunnel:

1. Navigate to **Start menu > Programs > stunnel** and select **Edit stunnel.conf**.

2. Edit the configuration file by doing the following:

   - Insert a semi colon (;) in front of **cert = stunnel.pem**.

   - Uncomment the line **client =** by removing the semi-colon (;) from the beginning of the line.

   - Ensure the client setting is set to **yes**.

   - Remove or comment out the section headings and lines included in each of the following sections by placing a semi-colon (;) at the beginning of each line:

     – pop3s

     – imaps

     – ssmtp

     – https

   - Add a new section as follows:

     [imap]
     accept = localhost:143
     connect = imap.gmail.com:993

3. Save the file.

4. Navigate to **Start menu > Programs > stunnel** and select **Service install**.

5. Navigate to **Start menu > Programs > stunnel** and select **Service start**.

A fully modified configuration file is shown below (modified lines from the provided sample configuration template are marked in red):

```
; Sample stunnel configuration file by Michal Trojnara 2002-2006
; Some options used here may not be adequate for your particular
configuration

; Certificate/key is needed in server mode and optional in client mode
; The default certificate is provided only for testing and should not
; be used in a production environment
;cert = stunnel.pem
```

```
;key = stunnel.pem

; Some performance tunings
socket = l:TCP_NODELAY=1
socket = r:TCP_NODELAY=1

; Workaround for Eudora bug
;options = DONT_INSERT_EMPTY_FRAGMENTS

; Authentication stuff
;verify = 2
; Don't forget to c_rehash CApath
;CApath = certs
; It's often easier to use CAfile
;CAfile = certs.pem
; Don't forget to c_rehash CRLpath
;CRLpath = crls
; Alternatively you can use CRLfile
;CRLfile = crls.pem

; Some debugging stuff useful for troubleshooting
;debug = 7
;output = stunnel.log

; Use it for client mode
client = yes

; Service-level configuration

;[pop3s]
;accept  = 995
;connect = 110

;[imaps]
;accept  = 993
;connect = 143

;[ssmtp]
;accept  = 465
;connect = 25

;[https]
;accept  = 443
;connect = 80
;TIMEOUTclose = 0

[imap]
accept = localhost:143
connect = imap.gmail.com:993


; vim:ft=dosini
```

For more information on configuring Stunnel, please refer to Stunnel documentation available online at *http://www.stunnel.org/* or supplied with the installed software. This technical note does not attempt to describe all potential options; it presents a working solution for the UC server and Gmail.

In some installations (for example, Windows Small Business Server (SBS) with IMAP enabled on Exchange Server), this configuration will need to be changed to allow Stunnel to accept connections on a different port. Similarly, the UC server will need to be configured to connect to the same port specified in the **accept** line of the section added for IMAP.

Enabling IMAP Access in Gmail

In order to use Gmail with the UC server, users will need to enable IMAP access for their mailboxes.

To enable IMAP access to a Gmail mailbox:

1. Using a Web browser, navigate to *http://gmail.com*.

2. Log in with the appropriate user name and password.

3. Using the links at the top-right of the page, select **Settings**.

4. Select the **Forwarding and POP/IMAP** tab.

5. In the **IMAP Access** section, select **Enable IMAP**.

6. Select **Save Changes**.

7. Close the browser window.

The following partial screen capture shows the relevant option enabled correctly for IMAP:
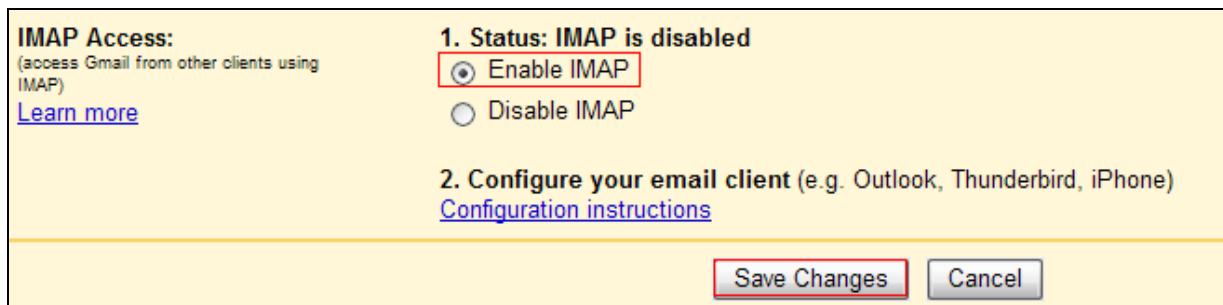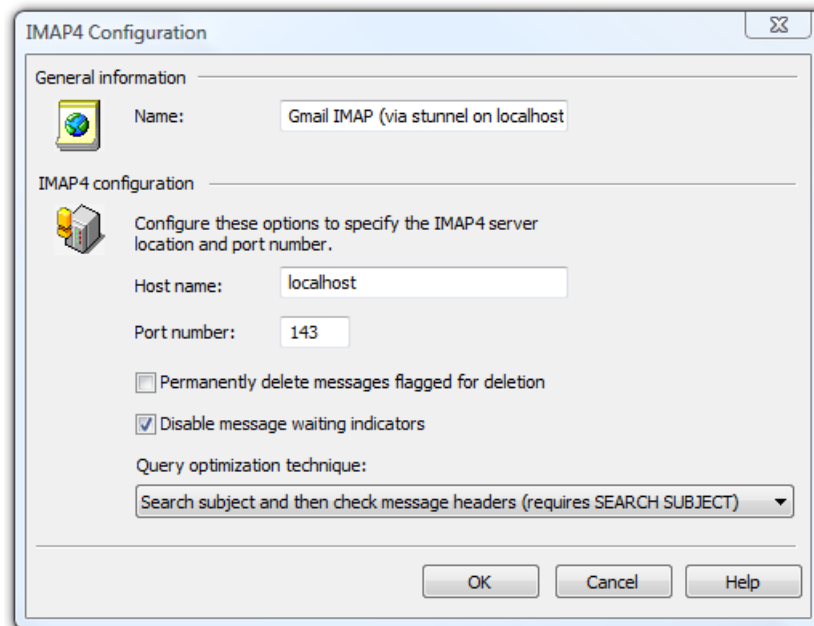
Configuring NetVanta UC Server for IMAP

To configure IMAP integration with the UC server, you will need to create a message store and configure users to use the newly created message store.

> **NOTE:** *If the message store is created using the **Server Configuration Wizard**, then the **Query optimization technique** must be set after completing the wizard (see step 4 on page 7).*

Creating a Message Store

To create a new message store using Gmail (via Stunnel):

1. Log in to the UC client as the administrator (or a user with administrator privileges).

2. In the administration menu, select **Servers**.

3. Right-click in a blank area of the **Servers** menu, and select **New > IMAP**.

4. Configure the values in the dialog box as follows:

Name	This is the name of the message store. You should name it something like **Gmail IMAP (via Stunnel on localhost)** to make it easy to identify.
Host name	This is the address of the server. In this case, it will be **localhost** as Stunnel is running on the local machine bound to the localhost interface. Stunnel will act as an SSL proxy to Gmail; do not set this to point directly to the Gmail servers as the UC server does not support IMAPS (secure IMAP).
Port number	This should be the default value of **143**. If the accept port was changed during the Stunnel configuration, this needs to be set to the same port number.
Permanently delete messages flagged for deletion	Typically this should be left **unchecked** for Gmail use, but it can be checked if you want to delete messages permanently from the server. Gmail has special behavior related to deleted messages. More information is available on Google's support pages.
Disable message waiting indicators	Typically, this will be **checked** for Gmail users as users will read messages from the Gmail Web interface and the UC server will not be informed of the changes to the messages and will not clear the message waiting indicators. If it is important to users to have message waiting indicators, they will need to be aware of the implications, and this option can be unchecked.
Query optimization technique	In the **Query optimization technique** drop-down box, select **Search subject and then check message headers (requires SEARCH SUBJECT)**. This option must be set correctly for the IMAP integration with Gmail to function correctly.

5. Select **OK**.

Multiple IMAP message store servers can be created within the UC server to obtain different variations of options. Each server can be configured independently, even if they all use Gmail, or the same Stunnel instance as a proxy.

Configuring Users

Existing and new UC server users can be configured to use the newly created message store. Users must provide their Gmail login and password in order for the UC server to access Gmail mailboxes. The User ID must be specified by the system administrator. The password can be entered by the system administrator or by the user. See *Completing Configuration with a User-Provided Password*.

Converting an Existing User's Message Store to Gmail

An existing user can be modified to use the newly created message store. Note that voice and fax messages in the user's existing message store will not be moved to the new message store. Before making this adjustment, ensure that users can either manage their old message store through other means or have cleared out all messages.
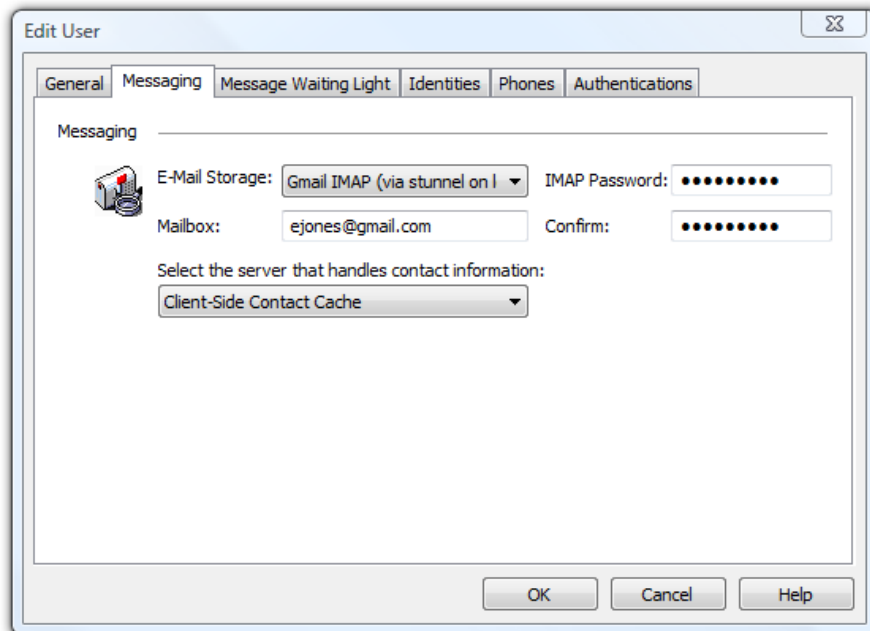
To change a user's message store to Gmail:

1. Log in to the UC client as the administrator (or a user with administrator privileges).

2. In the **Administration** menu, select **Users**.

3. Locate the user to modify in the list of users.

4. Double-click on the user to modify.

5. If the **Use Active Directory for messaging configuration** setting is present and checked, uncheck it. Otherwise, the **Messaging** tab will not be visible.

6. Select the **Messaging** tab.

7. From the **E-Mail Storage** drop-down list, select the newly created Gmail message store (for example, **Gmail IMAP (via Stunnel on localhost)**).

8. Fill in the remaining values as follows:

Mailbox   This is the user's Gmail address. This includes the *@gmail.com* suffix. This must be entered. For example: **ejones@gmail.com**.

IMAP Password   **Optional**: This is the user's Gmail password. It can be supplied in this dialog box by the system administrator or by the user using instructions in *Completing Configuration with a User-Provided Password*. If this field is not filled in, then the user will be prompted for the password when they first log in to the client.

Confirm   **Optional**: Enter the password a second time to ensure it was entered correctly.

9. Select **OK**.

Converting a New User's Message Store to Gmail

A user can be created using the newly created message store by following the standard instructions supplied in *NetVanta UC Server Administrator Guide-Unified Communications Edition*, available on the installation media or online at *http://kb.adtran.com/*, with the following instructions:

1. If creating a Windows User, on the **User Information (Active Directory)** screen, the **Use Active Directory** for messaging configuration option needs to be unchecked.

2. On the **Messaging** screen, select the newly created Gmail message store (for example, **Gmail IMAP (via Stunnel on localhost)**) from the **E-Mail Storage** drop-down list.

3. On the Messaging screen, fill in the remaining values as follows:

Mailbox   This is the user's Gmail address. This includes the "@gmail.com" suffix. This must be entered. For example: **ejones@gmail.com**.

IMAP Password   **Optional**: This is the user's Gmail password. It can be supplied in this dialog box by the system administrator or by the user using instructions in **Error! Reference source not found.**. If this field is not filled in, then the user will be prompted for the password when they first log in to the client.

Confirm   **Optional**:Enter the password a second time to ensure it was entered correctly.
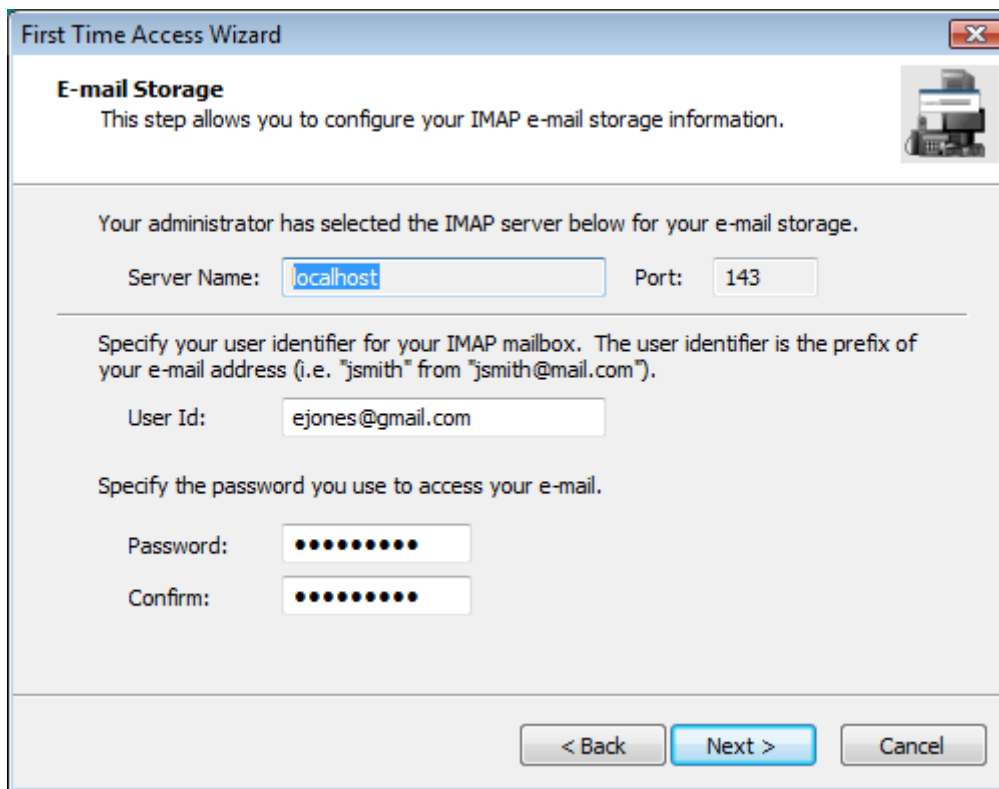
4. Complete the wizard as normal.

Completing Configuration with a User-Provided Password

Users can complete the configuration process themselves if they choose not to provide their Gmail password to the system administrator. Many users may be reluctant to provide their password to the system administrator, especially if the Gmail account being used is their personal Gmail account.

To complete the configuration process during first time access:

If a user launches the UC client for the first time and a password for the IMAP account has not been set, they will be prompted to enter a password while running the **First Time Access Wizard**. See the *NetVanta Unified Communications Server Personal Assistant User Manual* and *NetVanta Unified Communications Server Personal Business Assistant User Manual* , available online at *http://kb.adtran.com/*, for more information on the First Time Access Wizard.

1. Log in to the UC client as the user. The **First Time Access Wizard** will automatically run.

2. After recording the greetings, you will be prompted to enter the user name and password for the Gmail account.

3. Verify the User Id is correct and enter the password.

4. Select **Next** and continue through the wizard.

For users to set or modify their IMAP password:

1. Log in to the UC client as the user.

2. Select **Tools > Options** from the menu.

3. Select the **External Systems** tab.

4. Under **IMAP mailbox management**, select **Password**.

5. Enter the password and re-enter the password for confirmation.

6. Select **OK** in the **E-mail/Message-Store** dialog box.

7. Select **OK** to close the **Options** dialog box, saving the changes.
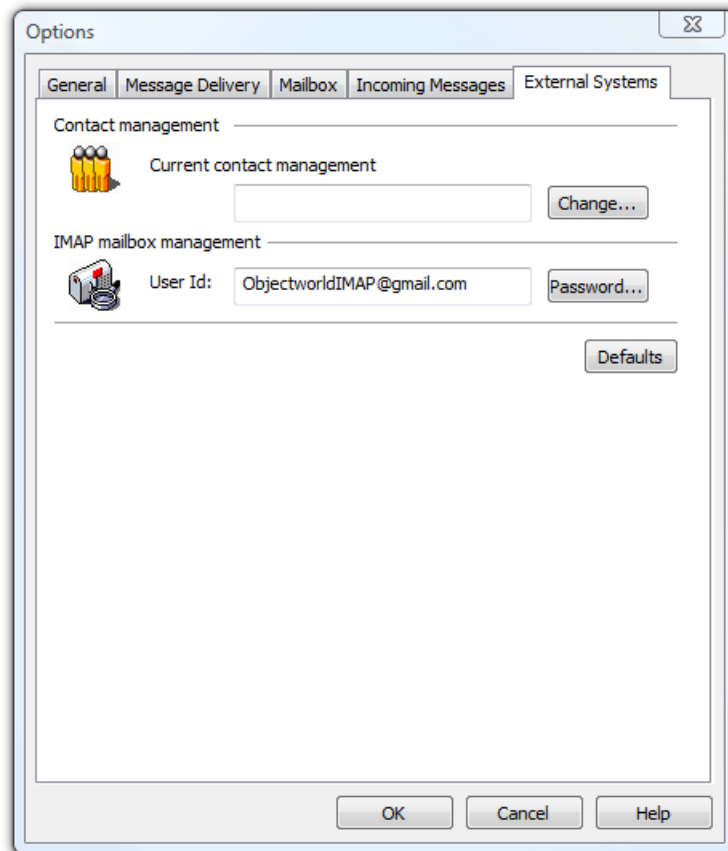
Limitations

The following limitations apply:

- IMAP mailboxes cannot currently be monitored for changes. The UC server is unable to maintain synchronization of message waiting indicators with the read/unread state of messages in the Gmail mailbox if the Gmail Web interface is used for reading voice messages. As such, the configuration settings above recommend disabling message waiting indicators for users using the Gmail message store. If the system is configured to allow message waiting indicators, we strongly recommend proper education of users so that they understand how message waiting indicators will behave.

- As Gmail is hosted on the public Internet, the installation of the UC server must have adequate and reliable bandwidth to permit the amount of voicemail traffic that will be expected for the installation. In addition, if Internet access is unavailable, the UC server may be temporarily unable to access users' voice messages until connectivity can be restored. Users checking messages over the telephone will hear *Unable to access your mailbox* when the UC server cannot connect to Gmail to retrieve message content.

- Gmail contacts are not used. Instead contacts are cached by the UC server from supported email clients.

- Handset playback of voice messages is not supported using the Gmail Web interface.