



AppGate Client for S60 3rd Edition

Version 1.3.0

AppGate Client for S60 3rd Edition

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Chapter 1. Getting started

1.1. Requirements

The client can be installed on any device which is based on S60 3rd Edition. This includes Nokia E61, N73, N80 and E90.

The AppGate server being connected to must be of version 6.1 or higher.

This manual requires that you are familiar with the basic concepts of the AppGate system.

1.2. Installation

The recommended method of installation is to use SMS provisioning on the AppGate server. A download link and personal settings will be sent to the device as SMS messages. If provisioning is not an option, the client can also be installed manually.

The recommended method of manual installation is to use the PC Suite and install the file `AppGate_S60E3_130.sisx` with it. An alternative way of installation is to open the file on the device.

Some possible ways to open the file on the device are:

- Over the web, by publishing the file on a web server and opening it from the web browser on the device.
- On a memory card, from where the file is opened with the file explorer application on the device.
- By sending the file over Bluetooth.

1.3. Uninstallation

The client can be uninstalled with the Application Manager. Open the main menu, then Tools and Application Manager. Highlight AppGate. Select Options and then Remove.

1.4. Launching

The client is launched by selecting its icon in Installations under the main menu, or by highlighting the icon and choosing **Open** from the menu.

Note that the client is running until **Exit** is chosen in the client or the device is shut down.

1.5. User interface

When starting the client for the first time, it may offer a guide where the login settings can be entered.

When the client is running in the foreground, it will display its current status under the row `Status`, and when a connection has been started, the login time under the row `Login time` and the amount of data transferred in the session under the row `Transferred`.

On the bottom of the display is a menu bar with two choices: **Options** and **Exit**. **Options** opens a menu where you can change the login settings, and connect or disconnect the client. **Exit** makes the client disconnect from the server and disappear.

Chapter 2. Basic use

2.1. Settings

The client will look for a settings SMS in the Inbox folder when it is started without the basic settings filled in, and the Status row will say `Downloading settings...` until the settings are downloaded from a server. If that fails, the client will offer a guide where the settings can be entered. It is also possible to enter the settings later, or change them later, by using the **Settings** menu.

These settings are required to establish a session:

Server

The host name or IP address of the AppGate server. If the port number is not 22, add a colon and the port number, as in `appgate.company.com:443`.

Authentication

The client supports the authentication methods **Password**, **Radius**, **SecurID CryptoCard**, **Public key**, and **Certificate**. The AppGate administrator can rename all methods.

When choosing **Certificate** or **Public key**, it is necessary to also choose a PKCS #12 file (for Certificate) or a PuTTY private key file (for Public key) to authenticate with. This file must first be copied to the directory `AppGate` in the internal memory on the phone.

Login name

The login name (not real name) for the AppGate server.

2.2. Commands

The following commands can be found under **Options**:

Connect

Connect to the AppGate server. When the Status row says `Connected`, all encrypted tunnels are established and ready for use.

Suspend

Disconnect temporarily from the AppGate server. Does not close the established tunnels, only pause them. The Status row will say `Suspended`.

Resume

Reconnect to the AppGate server, if the connection is temporarily down. Traffic in the established tunnels will be resumed. This will not require authentication. The Status row will say `Connected` after a successful reconnection.

Stay suspended

Tells the client to stop trying to reconnect to the AppGate server.

Cancel

Stops an ongoing attempt to connect or reconnect to the AppGate server.

Change password

Displays a dialog for changing the login password. This is only available when the client is connected to the AppGate server, and the administrator has granted you the ability to change your password.

Chapter 3. Advanced use

3.1. Roaming

Roaming is a way to disconnect and reconnect to the AppGate server without losing data or having to authenticate again. It is also a way to restore a broken connection, and to enhance battery life, as mobile devices tend to use more power when connected to a data network.

A paused or broken connection which can be resumed is called a suspended connection. The connection can be suspended and resumed manually by choosing **Suspend** or **Resume** from the menu, when available.

Roaming is available only if the AppGate administrator has granted you the **Roaming** capability.

3.2. Advanced configuration

The following configuration settings are available under **Advanced** in the menu:

Access point

Can be either **Always ask** or **Automatic**, the default is **Automatic**.

The choice **Always ask** opens an access point selection dialog every time **Connect** or **Resume** is chosen from the menu.

The choice **Automatic** makes the client choose an access point by itself every time it connects to the server, trying to use the fastest available network. All defined access points are tried, one after other, until one is found which is available. The order in which the access points are tried depends on the type of network. First all Wireless LAN access points are tried. Then all WCDMA and CDMA2000 access points are tried, then GPRS, then CSD, and finally virtual access points. As a last resort, the access point selection dialog is opened, where it is possible to search for a new Wireless LAN network. This procedure is always used when the client tries to resume without user intervention, for instance when the connection is temporarily lost.

Roaming mode

Can be either **Manual** or **On demand**. Has no effect if roaming is not available.

The choice **Manual** means that the client tries to stay connected, unless the user has chosen to suspend. If the connection breaks, the client will try to resume, and retry every two minutes until it succeeds or **Stay suspended** or **Cancel** is chosen from the menu.

The choice **On demand** makes the client suspend the connection after three minutes of inactivity in the encrypted tunnels. It also makes the client resume automatically upon traffic in the encrypted tunnels, typically a request from a web browser or mail client. If the client fails to resume, it will retry every 30 seconds until it succeeds or **Manual** is chosen.

The default setting is **Manual**. This is mainly because IMAP IDLE (also known as "push e-mail") cannot be used with **On demand**, since with **On demand** the client may suspend after three minutes even if there is an IMAP tunnel waiting for traffic from the server.

Keep-alive

Makes the client send "keep-alive" data after every 30 seconds of inactivity, which tends to make the connection more stable. Should only be used when absolutely necessary, since it consumes much battery power, and the additional network traffic might be expensive. This is disabled by default.

Compression

Makes the client compress all traffic to and from the AppGate server, which tends to speed up otherwise slow connections. Enabled by default.

Log level

Determines how much information is saved in the log file, which is called `log.txt`.

The log file can be found in the `AppGate` directory in the internal memory on the phone.

The following log levels are available:

None

No log file is created. This is the default setting.

Brief

Meant for technical users to aid self-diagnosis.

Verbose

Includes large amounts of internal messages. The client runs slower at this log level.

Verbose + Data

Includes all traffic sent in the session (except for AppGate passwords). Be careful when storing or sending such log files! The client runs slower at this log level.

The log file is cleared each time the client is started, so that only the last session is visible. The log file from the previous session is copied to the file `previous_log.txt` in the same directory. When the log file reaches the size of 1 MB, it is overwritten from the beginning, so that only the last 1 MB are stored.

Accept new keys

Makes the client automatically accept the AppGate server's host key when connecting to the server for the first time. This is enabled by default.

Privacy statements

Can be either **Always** or **Once**. Choosing **Always** makes the client warn about its network usage every time it is started and every time it connects to a server. The default is **Once**, which makes the client warn only once.

Keep mail alive

Makes the client automatically launch the e-mail inbox if the e-mail client is shut down and the administrator has enabled inbox launching on the server. This is enabled by default.

3.3. List of tunnels

When the client is connected to a server, the choice **List tunnels** appears under **Advanced** in the menu. It opens a text window which lists all tunnels together with statistics and current status for each tunnel. There is one paragraph of text for each tunnel, which, for instance, can look like this:

```
SMTP Access
From 127.0.0.1 port 25
To mail.company.com port 25
Open 1 Total 4 Rx 2320 Tx 30490
```

Where the fields have these meanings:

First row

Description of the tunnel, set by the administrator.

Second row

Listening address and port on the mobile device. The text `(changed)` indicates that the default port is busy and another port is used instead. The text `Not listening` indicates that the tunnel could not be opened or has been closed for some reason.

Third row

Destination address and port behind the AppGate server.

Open

The number of active instances of this tunnel.

Total

The number of times this tunnel has been opened, including the active instances.

Rx

The number of bytes received through this tunnel.

Tx

The number of bytes sent through this tunnel.

3.4. List of web accesses

When the client is connected to a server, the choice **List web accesses** appears under **Advanced** in the menu. It opens a text window which lists all web sites that are made available through the built-in web proxy on the AppGate server. There are two rows of text per web site, where the first row is a description of the site, and the second is the base address (URL) to the site.

These sites can be accessed with a web browser on the device, if the web browser is configured to use an HTTP proxy at `127.0.0.1` port 80.

3.5. Upload log

When the client is connected to a server, the choice **Upload log** appears under **Advanced** in the menu. It will send a number of recent log messages to the server. The status row will say `Uploading log...` while the messages are being sent, and `Connected` when finished. This functionality is useful for diagnosing problems together with an administrator. Note that events from previous sessions are not included. The **Log level** setting does not affect which messages are sent or how many.

Chapter 4. Administration

4.1. Supported authentication methods

Password

Support for changing the password.

Radius

No support for changing the password.

One-time passwords delivered over SMS with services such as MidEye or NordicEdge can be caught by the client while displaying a password dialog. The SMS message must be formatted so that there is a colon (:) before the password, then optional whitespace, and then the password, which may not contain whitespace. If any text or character comes after the password, there must be whitespace inbetween. There may not be any other colon in the SMS message. The Radius prompt for the one-time password must contain the text `one time` or `one-time` (case-insensitive).

SecurID

Support for changing the password when required.

CryptoCard

Fully supported.

Certificate

Supported for PKCS #12 files, with or without password.

Public key

Supported for PuTTY private key files, with or without password.

4.2. Supported attributes

The client sets the following attributes in the AppGate session:

Attribute	Value
<code>ag_client_type</code>	<code>mobile</code>
<code>ag_client_is_webstart</code>	<code>false</code>
<code>ag_client_version</code>	<code>1.3.0</code>
<code>identd</code>	<code>false</code>
<code>persfw</code>	<code>false</code>
<code>iptunneling</code>	<code>false</code>
<code>platform</code>	<code>symbian.s60e3.mobile</code>

4.3. Supported client check options

The client has built-in support for a set of client check options, which are modeled after those in `CHECK.EXE` for the Windows platform. When defining a client check, any binary file can be specified, as it is not used. The supported options are:

`-fileexists PATH`

True if the regular file `PATH` exists.

`-filesize PATH`

Returns the size of the regular file `PATH`.

`-filenewer PATH DATE`

True if the regular file *PATH* exists and has been modified since *DATE*.

`-fileolder PATH DATE`

True if the regular file *PATH* exists and has not been modified since *DATE*.

`-fileageless PATH AGE UNIT`

True if the regular file *PATH* exists and its age is less than *AGE UNIT*.

`-fileagemore PATH AGE UNIT`

True if the regular file *PATH* exists and its age is more than *AGE UNIT*.

`-filemd5 PATH`

Returns the MD5 sum of the regular file *PATH*.

`-direxists PATH`

True if the directory *PATH* exists.

`-process FILENAME`

True if a process called *FILENAME.exe* is running.

`-application NAME`

True if an application called *NAME* is installed. *NAME* can be either the icon text, or the name of the *.exe* file (not the full path), or the UID of the application, such as *0x2013e60f*.

This can be used to define an access rule to ensure that a third-party application is installed. For instance, if the icon is called *Super Antivirus*, define the client check

`-application "Super Antivirus"`

, and an access rule which is true if this attribute matches *"no"*. Then create a service which is available only if this access rule is true, and there create a client command which opens a download page in the web browser.

Note that the icon text may not be the same for different language settings in the phone. Therefore it is often better to check for the name of the *.exe* file. To find this name, define an arbitrary

`-application`

client check on the server, enable verbose logging in the client, log on once to the server, shut down the client, download the log file from the phone, and locate the list of installed applications.

`-imei`

Returns the IMEI number of the device.

`-imsi`

Returns the IMSI number of the SIM card, if any.

`-badcertcount`

Returns an integer count of the number of wrong certificate passphrases entered since the client was installed or the counter was reset.

Checks which are either true or false return either *yes* or *no*, so normally one would create an access rule which checks if the check attribute matches *"yes"*.

If the client fails to execute a client check, the attribute is not set, but a short error message is written to the attribute `ATTRIBUTE_failure_reason`, where `ATTRIBUTE` is the name of the ordinary attribute.

DATE is given as *YYYYMMDDhhmmss* or any shorter length thereof, for instance *20061231235959* for 23:59:59 the 31st Dec 2006, or *200612* for Dec 2006.

In *AGE UNIT*, *AGE* is a number and *UNIT* is either *days*, *day*, *hours*, *hour*, *minutes*, *minute*, *seconds* or *second*. For instance, *-filenewer c:/gizmo.dat 12 hours* is true if the file *c:\gizmo.dat* has been modified or created within the last 12 hours.

Paths should be written with slashes instead of backslashes, as in *c:/gizmo.dat*, which refers to *c:\gizmo.dat*. Note that the AppGate client can not access directories which are protected by the AllFiles capability in the Symbian operating system.

4.4. Supported components

IP Access

Supported for TCP on a single port on a single host.

In a client application on the device, the host name of the application server can not be used when accessing the tunnel. The address *127.0.0.1* must be used instead.

Web Access

Supported for one or more ports on one or more hosts per web access component. IP addresses, IP address ranges and port ranges are not supported. Start URL is not supported, but web sites can be launched with client commands.

Note that on Symbian devices it is necessary to configure the web browser to use the built-in web proxy, which is an HTTP proxy at *127.0.0.1* port 80.

Client Command

It is possible to define commands in the format

`APPLICATION.exe ARGUMENTS...`

to launch arbitrary applications on the device.

The client also recognizes these special commands:

browser

See Section 4.7, “Launching web pages”

bookmark

See Section 4.8, “Creating browser bookmarks”

mailaccount

See Section 4.9, “Creating mail accounts”

resetbadcertcount

Resets the counter which is read with the

`-badcertcount`

client check option and tells the number of wrong certificate passphrases entered since the client was installed or the counter was reset.

User Message

Is shown in plain text, where all HTML code is stripped away.

Roaming capability

Fully supported.

All available components are started when logging in, regardless of **Auto start** settings in the containing services.

4.5. Supported connection settings

Some of the server's connection settings require support by the client:

Listen ports

Nonstandard ports fully supported.

Message of the Day

Fully supported.

The setting '**You are already logged in**' warning is not supported.

4.6. Supported clustering settings

Load balancing and failover are fully supported.

4.7. Launching web pages

A web page can be launched in the native browser of the device by defining a client command with the format:

```
browser URL
```

Example 4.1. Opening localhost port 80 in a browser

Define this client command:

```
browser http://127.0.0.1/
```

4.8. Creating browser bookmarks

A bookmark can be created in the native browser of the device by defining a client command with the format:

```
bookmark URL TITLE
```

Note that this does not work on UIQ phones.

Example 4.2. Intranet for company.com at port 80

Define this client command:

```
bookmark http://127.0.0.1/ "Intranet for company.com"
```

4.9. Creating mail accounts

A mail account can be created and launched on the device by defining a client command with the format:

```
mailaccount OPTIONS
```

More than one mail account can be created in a single role. A mail account that has already been created with the same parameters is not changed. The options that can be given are:

Option	Description
-pop	Use the POP protocol instead of IMAP for incoming mail.

Option	Description
-accountname TEXT	User-friendly account name. If not given, the e-mail address is used.
-emailaddress TEXT	The e-mail address to be displayed in sent messages. If not given, the e-mail address is constructed from the login name and domain name.
-domain TEXT	The domain part of the e-mail address to be displayed in sent messages. If not given, the part of the AppGate login name after "@" is used. If this is not present, the AppGate server address is used, discarding the part until the first dot.
-alias TEXT	The e-mail alias (full name) to be displayed in sent messages. If not given, no alias is used.
-loginname TEXT	The login name for authenticating to the mail servers. If not given, the AppGate login name is used.
-password TEXT	The password for authenticating to the mail servers. If not given, the user is asked to enter the password when creating the account.
-samepassword	Use the AppGate password for the mail servers. If not given, the user is asked to enter the password when creating the account.
-smtpauth	Enable SMTP authentication when sending mail.
-imapport NUMBER	Localhost port number where the IMAP server can be reached. If not given, 143 is used.
-popport NUMBER	Localhost port number where the POP server can be reached. If not given, 110 is used.
-smtpport NUMBER	Localhost port number where the SMTP server can be reached. If not given, 25 is used.
-hideoffline	Hide messages from user when mail client is not connected to the server. Only supported on some versions of the S60 platform.
-launch	Launch the mail account in the native mail client. Note that the mail client may or may not synchronize with the server when this happens.

Arguments to options can be enclosed in quotation marks.

Example 4.3. Simplest case

The AppGate server address is *appgate.company.com*, the e-mail addresses have the format *LOGINNAME@company.com*, the e-mail server is an IMAP server, the tunnels listen on the default ports and the mail client should not be launched. Define this client command:

```
mailaccount
```

Example 4.4. Need to define domain, launch mail client

The AppGate server address is *appgate.helsinki.company.com*, the e-mail addresses have the format *LOGINNAME@company.com*, the e-mail server is an IMAP server, the tunnels listen on the default ports and the mail client should be launched. Define this client command:

```
mailaccount -domain company.com -launch
```

Example 4.5. POP server, custom ports

The AppGate server address is *appgate.company.com*, the e-mail addresses have the format *LOGINNAME@company.com*, the e-mail server is a POP server, the tunnels listen on ports 2110 and 2025, and the mail client should not be launched. Define this client command:

```
mailaccount -pop -popport 2110 -smtpport 2025
```

4.10. Advice on creating services

In most cases it is enough to define an IP access component for each server port, where the local port is the same as the remote port. The only special configuration that must be done in third-party applications (if client commands are not used for this purpose) is to set the server address to *127.0.0.1* (except in the ActiveSync client on Windows Mobile 5, where the server address must be *localhost.ag* or another hostname). This is true especially for the mail protocols SMTP (port 25), POP (port 110) and IMAP (port 143), as these ports usually are available on mobile devices. On Windows Mobile, if the remote server address is a hostname (which includes dots so that it belongs to the "Internet" network), such as *imap.company.com*, it will be mapped to *127.0.0.1* in the phone, so *imap.company.com* can be set as server address in the mail client, and the benefit is that the users can configure their applications exactly like they would on a PC.

However, port 80 is used for many purposes, and these conflicts often require creativity from the administrator. In the case of several intranet sites or web applications, it is often enough to assign different local ports to them, such as 8000, 8001 and 8002. The browser would then be pointed to *http://127.0.0.1:8001* or a similar address to access one of these sites.

Some ActiveSync clients, such as the one included in Windows Mobile, cannot be configured to use any other server port than 80 (or 443 if SSL is used, which unnecessarily degrades performance when used together with the AppGate system). It would then be advisable to assign port 80 to the ActiveSync component and other ports to web applications.

Another difficulty is that some web applications (such as Outlook Web Access) require that a fixed hostname, such as *intranet.company.com* is used in the URL, rather than an alias such as *127.0.0.1:8001*. In this case, web access components must be used instead. All web applications, including ActiveSync, will share port 80 and the AppGate server's built-in web proxy will route traffic to the right destination based on the hostname being used in the URL. There are both advantages and disadvantages with using web access components. On the positive side, Single Sign On (no need to authenticate a second time) is possible, and the AppGate server can conveniently both control and log what the user does. On the negative side, browsers on Symbian phones have to be configured manually to use the built-in web proxy (see "Web Access" under Section 4.4, "Supported components"), and will not be able to surf the internet without a connection to the AppGate server (which, again, may be positive if there is a surfing policy).

Example 4.6. Mail only

There is an IMAP server at *imap.company.com* and an SMTP server at *smtp.company.com*. Create a service with these components:

- An IP access component for TCP from port 25 to port 25 at *smtp.company.com*.
- An IP access component for TCP from port 143 to port 143 at *imap.company.com*.
- A client command which defines and optionally opens the mail account (see Section 4.9, “Creating mail accounts”).

Example 4.7. Mail and two internal web sites

There is an IMAP server at *imap.company.com*, an SMTP server at *smtp.company.com* and two internal web sites at *intranet.company.com* and *crm.company.com*. Create a mail service with these components:

- An IP access component for TCP from port 25 to port 25 at *smtp.company.com*.
- An IP access component for TCP from port 143 to port 143 at *imap.company.com*.
- A client command which defines and optionally opens the mail account (see Section 4.9, “Creating mail accounts”).

Create a web site service with these components:

- An IP access component for TCP from port 80 to port 80 at *intranet.company.com*.
- Optionally, a client command which opens the web site (see Section 4.7, “Launching web pages”):

```
browser http://127.0.0.1
```

Create another web site service with these components:

- An IP access component for TCP from port 8000 to port 8000 at *crm.company.com*.
- Optionally, a client command which opens the second web site (see Section 4.7, “Launching web pages”):

```
browser http://127.0.0.1:8000
```

Example 4.8. Exchange server and one web site

There is an Exchange server at *exchange.company.com* and an internal web site at *intranet.company.com*. Create an ActiveSync service with these components:

- An IP access component for TCP from port 80 to port 80 at *exchange.company.com*.
- A client command which defines and optionally opens the ActiveSync account. This option is only available for Windows Mobile phones. ActiveSync clients on Symbian have to be configured manually.

Create a web site service with these components:

- An IP access component for TCP from port 8000 to port 80 at *intranet.company.com*.
- Optionally, a client command which opens the second web site (see Section 4.7, “Launching web pages”):

```
browser http://127.0.0.1:8000
```

Example 4.9. Exchange server and one picky web site

There is an Exchange server at *exchange.company.com* and an internal web site at *intranet.company.com*, which does not tolerate being called *127.0.0.1:8000*. Create an ActiveSync service with these components:

- A web access component for port 80 at *exchange.company.com*.
- A client command which defines and optionally opens the ActiveSync account. This option is only available for Windows Mobile phones. ActiveSync clients on Symbian have to be configured manually. Do not forget the proxy settings (see “Web Access” under Section 4.4, “Supported components”).

Create a web site service with these components:

- A web access component for port 80 at *intranet.company.com*.
- Optionally, a client command which opens the web site (see Section 4.7, “Launching web pages”):

```
browser http://intranet.company.com
```

Do not forget the proxy settings (see “Web Access” under Section 4.4, “Supported components”) in the browser on the phone!

Chapter 5. Copyright notices

The AppGate client is based on PuTTY. The license for PuTTY requires the following notice to be bundled with all copies of the client.

5.1. PuTTY

PuTTY is copyright 1997-2004 Simon Tatham.

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