

Good™ Mobile Messaging Good™ Mobile Control

Wireless Enterprise Messaging and Data Access System

Secure Browser Guide

Good for Enterprise

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Secure Browser (Good Mobile Access)

Good Mobile Access (Secure Browser) is a Good Messaging plugin that provides a browser on supported devices for use with your corporate intranet. The browser is integrated to the Good Mobile Messaging Client on the device and provides seamless access to intranet sites without need for VPN

Good Mobile Access (Secure Browser) uses Console policies to determine whether a web page should be loaded on the user's device or redirected to the native browser. The secure-browser policy lists all the intranet domains, sub-domains, and embedded internet domains that you as administrator want to make available on the mobile device.

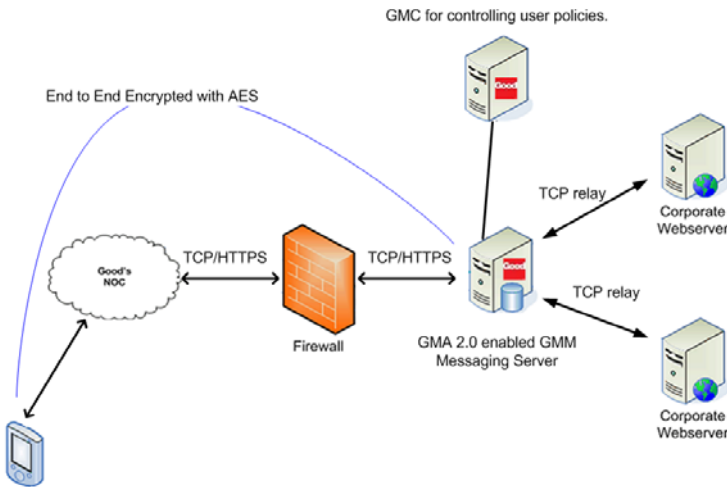
The secure browser provides a browser history, which can be cleared. Naming and editing bookmarks is supported. The browser supports pinch and zoom, and landscape mode. No special training is required.

Secure Browser supports HTML 4. For a list of Secure Browser features that will work with HTML 5, refer to "HTML 5.0 Support" on page 13.

Overview

Secure browser provides browsing-only functionality for supported devices. It does not provide connectivity for other applications to your intranet. It utilizes the secure container for browsing, thus storing all the data in encrypted format. The browser is included with Good Mobile Messaging Server and does not require additional server installation. Browser access is at the HTTP level (Application/Proxy layer) rather than the IP packet level (Network Layer). This ensures secure and separate corporate data:

- Integration with the Good for Enterprise iPhone app
- Encryption of browser cache, bookmarks, history and downloaded files inside the enterprise container
- Remote wipe of cache, bookmarks, history, downloaded files, etc.
- End-to-end encryption of data over-the-air
- No outbound firewall holes
- Application password policies



This graphic illustrates the Client communication flow:

- The user enters a URL in the secure browser.

- The Client issues an HTTP proxy connection over GMM server. The browser supports an HTTPS connection end-to-end from Client to webserver.
- GMM Server resolves the host name of the requested webserver, checks the host names against the domain list defined by the Secure Browser policy in Good Mobile Control.
- Once the HTTP connection is established, the client does HTTP transaction (POST/GET). Good Messaging server will simply pass the data to and fro between the webserver and the Client as the session requires.

Notes on the secure transport:

- Over-the-air transmissions are encrypted from the device to the Good Messaging Server using AES 192 Bit Encryption.
- Good Messaging Server establishes a TCP connection to the web server based on the URL being requested by the secure browser.
- Good Messaging server relays data between the web server and the secure browser on the mobile device.
 - Data exchanged between the secure browser and web server is encrypted using HTTPS.
 - Good Messaging Server does not store or analyze any of the data between the secure browser and the web server.
 - Access restrictions are applied based on the administrative policies defined in Good Mobile Control.

Preparation

Before setting up secure browsers for users, confirm the following:

- Good Messaging Server should be able to directly connect to requested host.
- Good Messaging Server should be able to resolve the host name to IP address through DNS lookup.
- Good Messaging Server should be able to directly connect to the resolved IP address and requested port number

In addition:

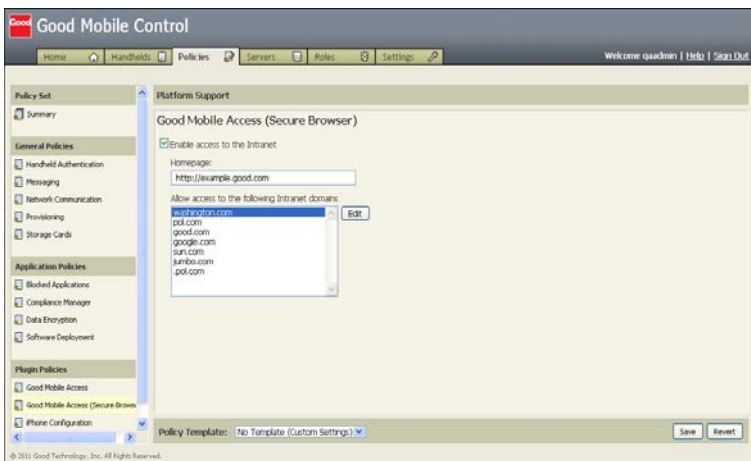
- Secure browser requires the Good iOS Client 1.8.2 or higher, or Good Android Client 1.8.2 or higher. No other iPhone or iPad preparation is required. For Android, a WebKit download from the Android Market is required; the first time the user runs Secure Browser, it will lead the user through WebKit installation. Only Android 2.2 and 2.3 devices are supported.
- NTLM v2 (only), and HTTP basic and digest authentication are supported.
- For connection to a host through a proxy server, refer to “Using a Proxy with GMA Secure Browser (iOS only)” on page 7.

You can set up a home page for the browsers. You’ll specify it when setting secure-browser policies. The page can serve as a launching point to all your internal web-based resource, streamlining intranet access and making all its resources easily available to your users.

Enabling Secure Browser

To enable Secure Browser for users via a policy:

1. First go to the Good Mobile Console Settings tab and click on the Good Mobile Access link in the left panel. On the Good Mobile Access page that is displayed, click the Enable checkbox.
2. To set policies for intranet browser use, display the Good Mobile Access (Secure Browser) policies page by clicking on its link in the Plugins portion of the left column of the Policies tab.



3. Click the “Enable access to the intranet” checkbox to turn on the browser feature for supported handhelds using this policy (and to display the full screen above).

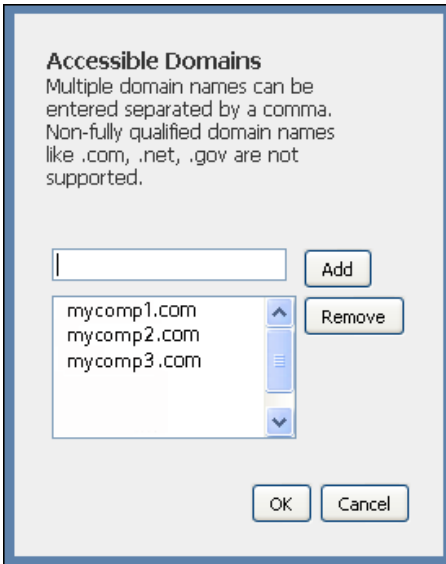
Note: Although the policy page uses the word “intranet,” enabling access also allows you to specify accessible internet domains for the secure browser.

4. If desired, supply a homepage address for the homepage to be displayed when the Good secure browser is invoked. If no address is specified, the browser opens on a blank page.

5. Enter the specific intranet or internet domains that the browser can access. No other public domains will be allowed. That is, this list is used as an “allow” list for public IPs: allow hosts with public IPs whose domain suffix matches an entry in this list.

Note: Non-fully qualified domain names are supported by default, with the exception of names such as .com, .net, .gov, and .edu.

To enter the domains, click the Edit button.



Type in the domains that you will allow, separated by commas. These can be intranet or internet domains. If an intranet domain includes embedded internet domains, such as in links to the internet on a page or pictures that are referenced from the internet, you’ll want to include those internet domains in this list (see Troubleshooting below).

Wildcards are not supported. However, entering “acme.com” will allow any URLs ending with that string (e.g., “test.acme.com” will be allowed).

Note that if a user enters a non-fully qualified domain name such as `http://info`, the browser will connect to it by bypassing the domain suffix list that you have entered above.

DNS settings on the Good Messaging Server are used to resolve host names. The Server does not contact DNS providers for the domains you enter in your allowed list, to resolve host names.”

6. If you will be using proxy servers (iOS only), enter the IP Addresses for the HTTP and HTTPS servers. (Use the Secure Browser link on the Console Settings tab.) If any IP prefixes/ domains are to bypass the proxy servers, enter the prefixes and domains, separated by commas, in the field provided, one pair per line. Refer to “Using a Proxy with GMA Secure Browser (iOS only)” on page 7 for rules concerning prefix and domain definitions, and more information on proxy server use.
7. Click Add to add entries to the list and OK to finish.

Using a Proxy with GMA Secure Browser (iOS only)

You can use an HTTP and/or HTTPS proxy with Secure Browser.

- HTTP proxy is used to connect to HTTP sites (non-SSL sites). The browser requests the page from the proxy by passing a full URL to it; the proxy checks the URL and fetches the page or sends it from its cache to the browser. The HTTP proxy will know the URL and content of pages flowing to and fro between browser and website.
- HTTPS proxy is used to connect to HTTPS sites (SSL sites), setting up end -to-end SSL connections. In this case, the browser will first set up an HTTP tunnel connection to the end website through the proxy server and then perform the SSL negotiation over the HTTP tunnel connection.

If an HTTP URL is entered, Secure Browser will use the HTTP proxy; if an HTTP proxy entry is not set, Secure Browser will try to connect without a proxy. If an HTTPS URL is entered, Secure Browser will use the proxy from the HTTPS proxy entry; if an HTTPS proxy entry is

not set, Secure Browser will try to connect directly without using a proxy.

Bypass Rules

You can enter exceptions on the Settings > Secure Browser page for particular hosts or URLs.



URLs entered in the device's secure browser for pages on these hosts cannot be reached via proxy. Enter the excepted hosts, separated by commas, using any of the following:

- Host names or fully qualified host names. Examples: kb, hub, hub.corp.good.com. Note: Host name and fully qualified host name will not match with each other; enter both in the exceptions list if the user might enter either in Secure Browser.
- Domain names with wild card. Examples: good.com, *.good.com, .good.com. Formatting matches Firefox usage. The following formats are supported:
 - domain.com or *domain.com. Example: will exclude http://test.domain.com, http://domain.com, and http://test.mydomain.com

- .domain.com or *.domain.com. Example: will exclude http://test.comain.com, but not http://domain.com or http://test.mydomain.com.
- IP addresses. Example: 192.168.1.2. If the secure-browser user enters a URL, Secure Browser will first try to resolve the IP address of the host using the Good Mobile Messaging Server and then match the IP address to the IP addresses in the exception list. If either Secure Browser is not able to resolve the IP or the IP does not match an IP in exception list, Secure Browser uses the proxy.
- IP address groups. Example: 192.168.0.0/16.
- allhostswithnodomain – If this keyword is included in the proxy bypass list, all URLs containing a non-fully qualified name (like https://testhost, https://hub, instead of https://testhost.good.com) will be excluded from proxy use.

If a host name is used instead of an IP address in the URL, Secure Browser matches the host to the list of host names in the allowed list of hosts sent from the Good Mobile Messaging Server. If the host is present in the list, Secure Browser will process it; otherwise, the user will be prompted to open the page in native browser. Note that the host name in the exception list on the Settings page and the allowed list on the GMA policy page must match exactly.

If proxies are present, Secure Browser handles host names as follows:

- Matches the host name to the proxy exception list
- If the host name is matched with an entry in the proxy exception list, Secure Browser will try to connect without using the HTTP proxy.
- If the host name is not matched with an entry in the proxy exception list, but the exception list contains IP addresses, Secure Browser will first request the Good Mobile Messaging Server to resolve the IP address of the host name and then match it to the IP addresses in the exception list. If the IP address cannot be resolved or the received IP address does not match an entry in the exception list, Secure Browser will use the HTTP proxy server.

If an IP address is used in the URL, Secure Browser decides whether to process it or launch Safari, using the following rules:

- If the IP address is a private IP, it is simply processed using Secure Browser
- If the IP address is public, it is matched to the allowed host list set in the Good Mobile Control Console (Plugin Policies > Good Mobile Access (Secure Browser)); if found, it is processed with Secure Browser; otherwise, native browser is launched.
- The IP address is matched with the proxy exception list. If the IP address is matched with an entry in the exception list, Secure Browser will connect without using HTTP proxy; otherwise, it will connect using the HTTP proxy.

Note: If a page host has more than one IP address, all such addresses should be entered in the proxy exception list. Secure Browser only matches the first IP address in a list of IPs sent from a host server to the proxy exception list; entering all the host addresses assures that the exception will be recognized.

Authentication types supported for proxies

Secure Browser supports the following HTTP/HTTPS proxy authentications:

- Basic
- Digest
- NTLMv2

Good recommends using NTLM, as Basic authentication involves sending plain passwords to the proxy server. Anyone sniffing data between Good Mobile Messaging Server and the HTTP proxy server can discover such a password.

The authentication will be cached in the program memory of the application and will not prompt the user for subsequent access until the application is restarted. Every time the application is restarted (after being killed manually or by OS) the user will be prompted for credentials when accessing the proxy.

Usability

Users may ask why they have to enter their domain credentials so often to access intranet sites.

- Good does not cache authentication credentials.
- If a Good Client session has expired or terminated, the user will need to authenticate the session again.
- Your remote application/server may also have a timeout value.

User Agents

Android

ROM2.3 (Nexus one)

User-agent header: Mozilla/5.0 (Linux; U; Android2.3.6;en-us;Nexus One Build/GRK39F) AppleWebKit/533.1 (KHTML, like Gecko)Version/4.0 Mobile Safari/533.1

ROM2.2 (Motorola Droid2)

User-agent header: Mozilla/5.0 (Linux; U; Android 2.2; en-us; MotoA953 Build/MILS2_U6_2.4.18) AppleWebKit/533.1 (KHTML, likeGecko) Version/4.0 Mobile Safari/533.1

iOS iPhone

User-agent header: Mozilla/5.0 (iPhone; CPU iPhone OS 5_1 like Mac OS X) AppleWebKit/534.46 (KHTML, like Gecko) Mobile/9B176

iOS iPad

User-agent header: Mozilla/5.0 (iPad; U; CPU OS 4_3_1 like Mac OS X; en-us) AppleWebKit/533.17.9 (KHTML, like Gecko) Mobile/8G4

iOS/Android Secure Browser Feature Comparison

	iOS	Android
Supported OS versions	iOS 4+	Android OS 2.2(Froyo), and 2.3(Gingerbread)
Mail server support	Exchange and Domino	Exchange and Domino
HTTP basic authentication	Yes	Yes
HTTP digest authentication	Yes	Yes
NTLMv2	Yes	Yes
NTLMv2 session	Yes	Yes
Kerberos	No	No
HTTP 1.1 protocol	Yes	Yes
HTTPS and SSL	Yes	Yes
Encryption of cache, bookmarks, history, and downloaded files	Yes	Yes
Remote wipe of cache, bookmarks, history, and downloaded files	Yes	Yes
End to end encryption of data using AES 192 bit encryption	Yes	Yes
Bookmarks	Yes	Yes
Homepage	Yes	Yes
History	Yes	Yes
Full screen mode	Yes	Yes
HTML5 support	Most of the HTML5 elements and javascript are supported, except for embedded video and storage APIs	
AJAX support	Yes, however synchronous AJAX requires using iOS 5	Yes

	iOS	Android
Multiple windows/ Pop-up window support	No	No
Proxy support	Yes	No
Client certificate support	No	No
Flash support	No	No

HTML 5.0 Support

iOS		Android	
Not Supported	Partially Supported	Not Supported	Partially Supported
Subtitle support - Video	Grouping content elements	FileReader API - Files	Text-level semantic elements
webM support - Audio & Video	Text-level semantic elements	FileSystem API - Files	Interactive elements
Ogg Theora support - Vedio	Interactive elements	Seamless i frame - Security	Sectiona Elements - Elements
Ogg Vorbis support - Audio	Input type = text - Forms	Custom Search Providers - web Applications	input type= datetime - Forms
Datalist - Field types	Input type = week - Forms	Native Binary Data - web GL	input type= date - Forms
Progress - Field types	Input type = color - Forms	3D Context - web GL	input type= month - Forms
Meter - Field types	Input type = image - Forms	Server Sent Events - Communication	Input type = text - Forms
Attributes - User interaction - Forms	Other Attributes - Forms	Web socket - Communication	Input type = week - Forms
Events - User interaction - Forms	Native Binary Data - WEB GL	Indexed DB - Storage	input type= time - Forms
Microdata		Web workers - Workers	input type= datetimelocal - Forms

iOS		Android	
Not Supported	Partially Supported	Not Supported	Partially Supported
Custom scheme handlers - web applications		Shared Workers - Workers	input type= range - Forms
Custom content handlers - web applications		Access the webcam - Local Multi media	Input type = color - Forms
Custom Search Providers - web Applications		Web Notifications - Notifications	Input type = image - Forms
Seamless iframe - Security		Page Visibility - others	Other Attributes - Forms
3D Context - web GL		Web Audio API - Experimental - Audio	text area - Forms
FileReader API - Files		Web Data API - Experimental - Audio	Select - forms
FileSystem API - Files		Window.requestanimationframeanimation.	fieldset - forms
Indexed DB - Storage		Microdata	keygen - forms
Access the webcam - Local Multi media		Attributes user interaction - Forms	Association of Controls and forms - Fields
Web Notifications - Notifications		Events - User interaction - Forms	Other Attributes - Fields
Page Visibility - others		Editing elements - HTML Editing	CSS selectors - Fields
Web Audio API - Experimental - Audio		Editing Documents - HTML Edting.	XMLHTTPPrequest Level2
Web Data API - Experimental - Audio		APIs-- HTML Editing	
Window.requestanimationframe - Animation		Html5 Tokenizer - Parsing Rules	
		Html5 tree building - Parsing Rules	

iOS		Android	
Not Supported	Partially Supported	Not Supported	Partially Supported
		SVG in text/html - Parsing Rules	
		MathML in text/ html	
		Subtitle Support - Video	
		MPEG-4 Support - Video	
		H.264 support - Video	
		webM support - Audio & Video	
		Ogg Theora support - Video	
		Ogg Vorbis Support - Audio	
		PCM Audio Support - Audio	
		AAC Support - Audio	
		Embedding Custom non-visible data - Elements	
		Grouping Content elements - Elements	
		Hidden Attribute - Global Attributes or methods - Elements	
		datalist Field Types - Forms	
		output - Field Types - Forms	
		Progress - Field Types - Forms	
		meter - Field Types - Forms	

Frequently Asked Questions

General

Q: What is Good Mobile Access (GMA) Secure Browser?

A: GMA secure browser allows mobile access to enterprise web applications without the need of VPN.

Q: What is the benefit of GMA Secure Browser over native browser via VPN?

A: GMA Secure Browser provides secure storage and encryption while native browsers do not. Also, using native browsers via VPN allows any third party applications on the device to access the intranet, whereas GMA Secure Browser would restrict access to only the GMA client.

Q: What platforms does GMA Secure Browser support?

A: GMA Secure Browser is available on: iPhone, iPod Touch and iPad using Good iOS client 1.8.3 with iOS 4.0 and above; Android devices using the 2.2 or 2.3 OS.

Q: What do I need to deploy GMA Secure Browser?

A: Good Mobile Messaging server 6.3.1 or higher (Exchange) and Good Mobile Control server 1.3.1 or higher; or Good Mobile Messaging server 6.3.1.74 or higher (Domino) and Good Mobile Control server 1.3.1.122 or higher. To enable GMA Secure Browser, go to GMC Settings tab and click on the "Good Mobile Access (Secure Browser)" setting, then select the checkbox to Allow Intranet Access from the server. You'll also need to configure domain list through policy, see Administrator's Guide for more details.

Supported Technologies

Q: Which web servers does GMA Secure Browser support?

A: We have tested with IIS 6.x and 7.x and the latest version of apache. As long as web servers support HTTP 1.1 spec, they should be compatible with GMA Secure Browser.

Q: Is GMA Secure Browser built on WebKit?

A: Yes, GMA Secure Browser uses the same WebKit as used by Safari and Android native browsers, therefore rendering HTML pages should be identical. However, there are some differences between GMA Secure Browser and Safari and Android native browsers because the communication between client and Good's NOC and how AJAX requests are being handled.

Q: Does GMA Secure Browser support HTTPS and SSL?

A: Yes, they are supported by GMA Secure Browser. However, GMA Secure Browser would not display warnings if SSL certificate is invalid.

Q: Does GMA Secure Browser support HTTP 1.1 protocol?

A: Yes, GMA Secure Browser supports HTTP 1.1 protocol as per the RFC spec. This includes GET/POST, redirection, cache directives, transfer-encoding, authentication status, and gzip support. Advanced HTTP protocols like web sockets and HTTP pipelining are not supported.

Q: Does GMA Secure Browser support HTML5?

A: GMA currently only supports HTML 4.

Q: What are some of the best practices for developing websites for GMA Secure Browser?

A: Avoid embedding HTML pages inside <object> tags and don't rely on having a website and a pop-up window open at the same time.

Websites should also detect and optimize the content layout if they are accessed from an iPhone.

Q: Does GMA Secure Browser support NTLM v1 & v2 authentication?

A: The latest version of Good iOS client only supports NTLM v2 authentication.

Q: Does GMA Secure Browser support HTTP basic and digest authentication?

A: HTTP basic and digest authentication are supported in the latest version of Good iOS and Android Clients.

Q: Does GMA Secure Browser support web cookies?

A: GMA Secure Browser supports web cookies. Depending on cookie type (memory or persistent), the cookie could be erased when user exits Good client.

Q: Does GMA Secure Browser support Single Sign-On?

A: GMA supports cookie based single-sign-on, but certificate and Kerberos based single-sign-on are not supported.

Q: Does GMA Secure Browser support caching of login session?

A: Yes, GMA Secure Browser caches login session for NTLM v2, HTTP basic and digest authentications. The cache is cleared when user exits Good client.

Q: How long would GMA Secure Browser cache the login credentials? Is there a way to specify how long it can be cached?

A: GMA caches the login credentials only for the application session, they are cleared when user exits Good client.

Q: How does GMA Secure Browser work with intranet websites that require user login? Does user need to enter user name and password every time?

A: When user visits a website that requires user login for the first time, GMA will prompt user for the login credential. Subsequent visits to that website will not require user to re-login until user exits Good client, at which point the cache is cleared. Login credentials are unique to each website; they are not shared across multiple websites.

Q: Does GMA Secure Browser support ITPC protocol for loading iTunes podcasts?

A: No, GMA Secure Browser only supports HTTP and HTTPS protocols.

Q: Does GMA Secure Browser support using proxy server or Auto Proxy?

A: GMA Secure Browser on iOS supports proxy server but not PAC file. GMA Secure Browser on Android does not support proxy server or PAC file.

Q: Does GMA Secure Browser support Apple Specific Meta Tags?

A: No, GMA Secure Browser does not support using any Apple Specific Meta Tags.

Best Practices

Q: How many GMA Secure Browser users can be supported on a GMM server?

A: GMM server can support up to 1,050 GMA Secure Browser users concurrently (assumes 20% are using GMA simultaneously). GMM server is a 32-bit application which has a 2GB Virtual Memory limit, and in an ideal situation, the memory usage should be around 1.5GB.

Limiting usage to 1,050 GMA Secure Browser users on a GMM server ensures that memory usage will not exceed 1.5GB during normal load conditions, with sufficient memory to handle high load conditions.

Q: Can GMA Secure Browser access intranet websites that has references to external URLs?

A: External URL domains can be added to the list of allowed domains through GMC's policy, so content hosted on external website can be displayed through GMA Secure Browser.

Q: What can I do to ensure that my intranet websites are built to support GMA Secure Browser?

A: Your intranet websites should not use the features that are not supported in GMA Secure Browser, such as embedded HTML pages and pop-up windows. See the Supported Technologies section for a list of supported and unsupported features.

Usage Scenarios

Q: Can GMA Secure Browser access external internet websites?

A: If an external website is listed as one of the allowed domains in the policy, then it can be accessed through GMA Secure Browser. If it is not listed as one of the allowed domains, users will be prompted to open the website with the native browser. Web pages accessed outside GMA Secure Browser will not be stored in the secure container.

Q: Can GMA Secure Browser access Sharepoint?

A: Yes, Sharepoint can be accessed via GMA Secure Browser, as long as it is listed as one of the allowed domains in the policy.

Q: When I access a file on Sharepoint using GMA Secure Browser, is the content stored securely?

A: Yes, everything downloaded through GMA Secure Browser is stored in a secure container, including any files, images downloaded through Sharepoint or any other intranet websites.

Q: What information is encrypted through GMA Secure Browser?

A: GMA Secure Browser encrypts webpages, bookmarks, and browser history.

Troubleshooting

Q: Are there any debugging commands for GMA Secure Browser?

A: The following commands can be entered in the GMA secure browser to help troubleshooting issues.

iOS

`debug://policyprint` displays policy set in a server, this is helpful in determining access rights and domains that are allowed.

`debug://listfailedhosts` display list of domain names that are causing problem for GMA to load.

`debug://loglevel:65535` sets higher level of logging. Logs can be sent to Good by going to Preferences/About

`debug://cachecleanup` cleans up the stored browser cache so GMA can download the latest webpages from the web server

Android

`sbdebug://policyprint` displays policy set in a server, this is helpful in determining access rights and domains that are allowed.

`sbdebug://listfailedhosts` display list of domain names that are causing problem for GMA to load.

`sbdebug://loglevel:t4064` sets higher level of logging. Logs can be sent to Good by going to Preferences/About

sbdebug://clcache cleans up the stored browser cache so GMA can download the latest webpages from the web server

Q: Why am I getting an error message in GMA Secure Browser but not in Safari when I access a website?

A: It could be an issue with AJAX based requests. Follow the steps below to report issues to Good,

1. Go to GMA Secure Browser
2. Enter `debug://loglevel:65535` (for iOS) or `sbdebug://loglevel:t:4064` (for Android) in the address bar, then press Return.
3. After that clear the address bar and access the site.
4. Continue testing.
5. Once testing is done, go to Preferences/About and upload logs.

Q: Why is the secure-browser icon not displayed on the user's device?

A: Check the following:

- For Android devices, is the required 2.2 or 2.3 OS present?
- Is GMA enabled on the Settings page in Good Mobile Control?
- Is GMA Policy Enabled and added to this handheld?
- Have you waited for the Policy Update Delay to expire?
- Try completely exiting Good Client (kill the background task) and launching again.
- Restart Good Mobile Messaging and Good Mobile Control Services.

Q: When a user attempts to navigate to a domain that I have allowed, he/she receives a "Failed hosts identification" message. Why?

A: Use the browser to navigate to

iOS

`debug://listfailedhosts`

Android

```
sbdebug://listfailedhosts
```

Check the domain names that are causing the problem. Confirm that you have allowed them in the policy. These may include, for example, embedded internet sites that are referenced on your intranet pages.

If a domain is properly listed in the policy but is causing access problems, confirm the following:

- Can Good Messaging Server connect to the requested host.
- Can Good Messaging Server resolve the host name to an IP address through DNS lookup?
- Can Good Messaging Server connect to the resolved IP address and requested port number?
- Is the connection to the host accomplished through a proxy server? This is not supported.

The device screen should be kept on during secure browsing. The user may encounter an error if the device goes to sleep during browsing.