



# VAR Tech Advisory

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## **Delegate Opens Up AMOS™ TCP/IP Possibilities** *Versatile TCP/IP Proxy Software Enhances AMOS Connectivity*

Dear Alpha Micro VAR:

The world of TCP/IP is getting increasingly complicated. Enhancements to protocols surface from time to time, and existing connection techniques become more complicated. Your customers may require you to interface with certain TCP/IP servers that have requirements that AMOS or standard PC clients may not be able to deal with.

A previous VAR Tech Advisory, VTB2002-03, available on-line at [www.alphamicro.com/vartech/02-03.pdf](http://www.alphamicro.com/vartech/02-03.pdf), addressed the question of how to add Secure Sockets Layer encryption to the AMOS HTTPD web server. Alpha Micro had identified an interesting piece of Windows® freeware, Delegate, which could provide the front-end SSL encryption and decryption, so that AMOS can host https:// sessions for secure purposes such as credit card charging.

Since that time, Delegate has been enhanced with a growing set of features that Alpha Micro developers may find intriguing. Several recent inquiries to Alpha Micro Technical Support have been seeking the kind of functionality Delegate offers, thus we thought it beneficial to make mention once again of this important product.

### **A TCP/IP Proxy**

Delegate is technically classified as TCP/IP Proxy Software, because its main purpose is to allow TCP/IP servers and clients to route their traffic through Delegate to gain additional functionality that the native clients and servers do not offer. For example, Delegate offers the following:

### **HTTPS Support**

Our original VAR Tech Advisory cited Delegate as an easy way to provide secure web services to the AMOS web server. Since 2002, Delegate's SSL encryption functionality has been simplified and enhanced. Our original instructions no longer apply to current releases of Delegate, and are supplanted by the below information.

Note that the term Transport Layer Security (TLS), has supplanted the term SSL, though for our purposes, the technology is the same and the terms are synonymous. Your router should route incoming port 443 (HTTPS) to the IP address of the PC running Delegate, while port 80 for non-encrypted HTTP continues to go directly to the IP address of the AMOS host.

SSL-encrypted sessions require the presence of an SSL Certificate. This is a file that identifies and verifies the security of your web pages. It does this by verifying that your web pages do, indeed, come from your domain. The verification system may also communicate with the Certificate Authority, the company who issues the certificates, for further confirmation of identity. Each certificate is locked to the domain for which it is being used. For instance, a certificate generated for use with [www.somecompany.com](http://www.somecompany.com) would cause a browser error if it were used on the site [www.anothercompany.com](http://www.anothercompany.com). You must purchase one certificate for each domain you use.

Delegate includes the ability to test your SSL environment with its own internal test certificate. Use the following (lengthy) startup command, substituting your domain and e-mail address, and the proper folder name where delegated.exe resides. Note that the exe is distributed with a name reflecting its release number; you will want to rename it to delegated.exe for consistency with the documentation.

```
"D:\Releases\SSL and SSH\Delegaterel\D981\bin\delegated" -P443 SERVER=https MOUNT="/*  
http://www.yourdomain.com/*" STLS=fcl CACHE="do" ADMIN="info@yourdomain.com"
```

The above command line tells Delegate to accept incoming HTTPS requests on port 443, and forward them once decrypted to [www.yourdomain.com](http://www.yourdomain.com).

The first time that you start up Delegate, it will ask if you want Delegate to register itself as a service to be started automatically at boot time. This is convenient. Be aware that Delegate does not appear on your Start menu, or in your installed Applications. The only sign that it is present is the Service entry it adds alongside all of your other Windows services.

## More Affordable SSL Certificates

Browsers will display a warning screen noting that the test certificate built into Delegate is not registered. When the time comes to go live, the cost of registered SSL Certificates has come way down. For example, at [www.godaddyssl.com](http://www.godaddyssl.com), you can purchase a certificate for \$14.99 per year, one-tenth of the price previous vendors charged.

Before ordering a certificate, you need to generate a Key file and a Certificate Signing Request. First, download and install the Windows binary of the public domain package [www.openssl.org](http://www.openssl.org). This is the successor product to SSLeay, which Delegate incorporates. Then execute the following commands, substituting your own domain name:

```
C:\OpenSSL\bin\openssl genrsa 1024 > www.yourdomain.com.key
```

```
C:\OpenSSL\bin\openssl req -new -key www.yourdomain.com.key > www.yourdomain.com.csr
```

You will need to cut and paste the contents of the file `www.yourdomain.com.csr` into the Certificate Vendor's order entry screen.

To start up Delegate for production use, enter the following (lengthy) command. CERTDIR is the folder where you placed the Key and Certificate files.

```
"D:\Releases\SSL and SSH\Delegaterel\D981\bin\delegated" -P443 SERVER=https MOUNT="/*  
http://www.yourdomain.com/*" STLS=fcl CACHE="do" ADMIN="info@yourdomain.com"  
CERTDIR="D:\Releases\SSL and SSH\Delegaterel"
```

The first time you start Delegate with the live certificate, it will ask if you wish to remove and reinstall the Service startup entry made when operating with the internal test certificate. You do want to do that, so that the new startup parameters will be saved.

## FTP to FTPS Conversion

Do you have a requirement to transmit data in secure form? The FTP protocol offers an SSL-encrypted version called FTPS which is becoming popular, among other places, in medical environments that must meet HIPAA compliance standards. Whether AMOS is the FTP client in such a case (using FTP.LIT), or the FTP server (running FTPD), you can add secure FTP capability to AMOS by routing its FTP traffic through Delegate. The same principles explained above for HTTPS encryption apply for FTP encryption. Just use the appropriate startup command line from the Usages page of [www.delegate.org](http://www.delegate.org).

## SMTP Authentication

Spammers have forced the rest of us to protect our mail servers in a variety of ways. SSL encryption of SMTP sessions is one way – and Delegate can handle that in a similar way to its FTPS and HTTPS encryption. Another solution is to force SMTP clients to log in to their SMTP servers to identify themselves as legitimate clients with permission to send mail. (You may already know that AMOS' SMTPD.LIT supports SMTP Authentication from mail clients.) But what if your ISP requires SMTP Authentication, and you are trying to transmit e-mails from your AMOS application via EMAIL(H).LIT? EMAILH does not support Authentication. This is where Delegate comes in: Route the outgoing e-mail through Delegate, which will add the required Authentication Login ID and Password, and then forward the message on to the ISP.

## IPv6 Gateway

Slowly, the Internet is transitioning to the next infrastructure that will allow more flexibility in addressing than our current IPv4 standard allows. Most significantly, the global Internet will eventually run out of IP addresses as more and more devices require a static IP. Delegate has the capability to translate between the two versions of IP, should you encounter a situation where you must communicate via the new standard.

## Installation

The typical configuration is to install Delegate on a client PC somewhere on your network and run it minimized. It is not a resource hog and will barely be noticed.

While it is possible to install Delegate on the same host machine as AMOS, that is, on a Cardinal, Eagle 750, Eagle 800, or AM-8000, please be aware of a potential limitation: We do not guarantee that AMOS will be able to “loop back” and talk to Delegate on Windows on the same system if you have only one network adapter. *If you want to run Delegate on the Windows side of your AMOS server, have Windows use a different network adapter than AMOS, with a different static IP address, and plug both network adapters into the same hub/switch.*

## Where To Start

Delegate is free for use for small commercial applications. It is beyond the scope of this document to go into more detail about any specific configurations of Delegate. Suffice it to say that Delegate is a command-line driven program with a myriad of options. Read more about this powerful software and download it from [www.delegate.org](http://www.delegate.org). Click on Usages at the top of the page for a list of possible applications, and the startup command line syntax to accomplish each objective.

Contact Alpha Micro Technical Support if you wish assistance with setting up Delegate for a particular situation.