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## GE Series 90 TCP/IP Ethernet Communication Interface API

The DASTEC Corporation **GE Series 90 TCP/IP Ethernet Communication Interface API** allows the user to implement bi-directional communications to exchange data between applications running on a PC-based or embedded system with other peer devices supporting the GE Series 90 SRTP Ethernet protocol. The peer devices can be GE Series 90 devices, other host computers or even other system applications using the API.

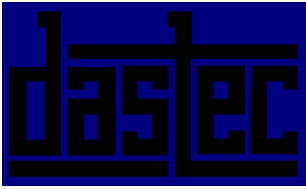
The **GE Series 90 TCP/IP Ethernet Communication Interface API** enables a system to act as a client to other GE Series 90 peers, initiating read and write operations on behalf of the system applications. The API also allows the system to emulate a GE Series 90-70 PLC to respond to read and write requests and thus acts as a “virtual PLC” to other GE Series 90 peers. The API is available for various combinations of operating systems and hardware platforms and can be used with C/C++ or Visual Basic.

The API consists of two component functionalities, client side and server side. The client side functionality is implemented with a single API library. Server side functionality is implemented with a library/executable pair, again, a dynamic link or static library depending upon the operating system. Together these components manage all aspects of the protocol and data exchange including responding to peers with proper acknowledgements, error/success codes and protocol data byte ordering. The system application need only to deal with the data values exchanged in native byte order. The user can employ either the API’s client, server or both functionalities with minimal code implementation.

The **GE Series 90 TCP/IP Ethernet Communication Interface API** supports the following GE SRTP protocol request codes:

- 0x04** - Read System Memory
- 0x07** - Write System Memory
- 0x21** - Change Access Level
- 0x4F** - Establish Session

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## **Client API Functionality**

To exchange data with GE Series 90 Ethernet peers, a system application can initiate read and/or write operation(s) to peers by simply calling the client's library functions. The functions include the ability to create handle(s) for the peer device(s) and then using those handle(s) to call the client's library read and write functions. Operation results are returned directly to the calling application, as is data in the case of read operations.

### Client API Supports

- Defining of multiple device(s) representing GE Series 90 peers.
- Functions to read data from and write data to defined device(s).
- I/O data can be read/written as packed bits or as bytes.
- Registers, Analog Inputs and Analog Outputs data can be read/written as 16-bit, 32-bit or as ASCII values.
- Multiple user applications can use the client API simultaneously.

## **Server API Functionality**

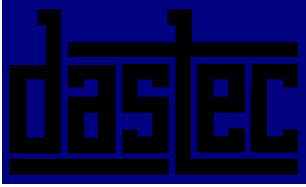
Using the server executable program provided as part of the API, a system can appear as a GE Ethernet device (GE Series 90-70 PLC) on the network. By managing all GE SRTP communication operations, the server executable receives and responds to both read and write requests from peer devices. Data written by peers is stored into separate databases maintained by the server executable for different GE memory type (Discrete Input, Discrete Output, Discrete Internals, Register, Analog Input and Analog Output). The data received is stored in the byte order appropriate for the system's processor. The data for read requests received from peers is retrieved and returned from these databases as well.

No user programming is required for the system to act in this server mode. Peers can read and write to the system as if it were a GE Series 90-70 PLC with no user application programs running. Applications have access to the server's databases indirectly through specific API library functions calls or directly via shared memory access. In this way, the user applications obtain data written from peers and can update the system's "virtual PLC's" data registers, I/O, etc. so that peers can retrieve it.

### Server API Supports:

- GE Memory Types: Discrete Input (%I), Discrete Output (%Q), Discrete Internals (%M), Register (%R), Analog Input (%AI) and Analog Output (%AQ). A separate database is maintained for each memory type.
- Adjustable database sizes.
- Access to databases via function calls and/or through shared memory.
- Multiple user applications can access the server databases simultaneously.

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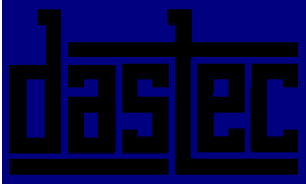


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## Specifications:

- Supported Platform:
  - Any computer running Windows 98/NT/2000/XP or Linux operating system
  - WinCE
    - Intelligent Instrumentation EDAS CE and LANpoint CE
- Supported GE SRTP protocol request codes:
  - **0x04** - Read System Memory
  - **0x07** - Write System Memory
  - **0x21** - Change Access Level
  - **0x4F** - Establish Session
- GE SRTP access level 2 password
- Supports multiple, multi-thread user applications simultaneously
- Client API Supports
  - Defining of multiple device(s) representing GE Series 90 peers.
  - Read data from and write data to defined device(s) via different function calls.
  - GE Memory Types: Discrete Inputs (%I), Discrete Outputs (%Q), Discrete Temporaries (%T), Discrete Internals (%M), Discrete System Status Table A (%SA), Discrete System Status Table B (%SB), Discrete System Status Table C (%SC), Discrete System Status (%S), Genius Global Data (%G), Register (%R), Analog Input (%AI) and Analog Output (%AQ).
  - I/O data can be read/written as packed bits or as bytes.
  - Register, Analog Input and Analog Output data can be read/written as 16-bit, 32-bit or as ASCII values.
  - Multiple user applications can use the client API simultaneously.
- Server API Supports:
  - GE Memory Types: Discrete Input (%I), Discrete Output (%Q), Discrete Internals (%M), Register (%R), Analog Input (%AI) and Analog Output (%AQ).
  - Separate databases maintained for each memory type.
  - Adjustable database sizes: 0 - 65536 (1000 default).
  - I/O data can be exchanged as packed bits or as bytes.
  - Register, Analog Input and Analog Output data can be as 16-bit, 32-bit or as ASCII values.
  - Access to databases by multiple applications.
  - Access to databases via function calls or through shared memory.

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## Ordering Information:

Product Name: **GE Series 90 TCP/IP Ethernet Communication Interface API**

Platform Part Numbers:

- Computer running Windows 98/NT/2000/XP  
Part No: WinPC-GETCPAPI
- WinCE
  - Intelligent Instrumentation EDAS CE and LANpoint CE  
Part No: IIIWinCE-GETCPAPI
- Intel Computer running Linux  
Part No: LINUX-GETCPAPI

Software package includes 3-1/2" diskette and User's manual (electronic image)

*Contact DASTEC about other supported platforms or to inquire about supporting other platforms.*

## Pricing (U.S.Dollars):

List: \$395.00

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