



Applied Systems Engineering, Inc.

Technical Note #44
Configuring The GPT to use LAN/WAN

TechNote 44: Configuring the GPT to Use Lan/Wan

About Configuring the GPT to use LAN/WAN

This document describes how to configure the PT to use TCP/IP. The bulk of the configuration is performed in the COMM component.

Master Translation Mode.

This section describes information on how to configure the PT for LAN/WAN when the GPT is running in master translation mode. In this mode the local device runs as a network client. The client connects to remote servers (RTUs) and issues requests to those devices.

The COMM Routing Table

For each remote device the PT connects to a path must be configured to describe the connection. This routing table is internal to COMM and managed by the COMM layer. The GPT uses a protocol address when writing to a remote device. COMM must translate the protocol address into a network address that can be used to connect to the remote data server. The routing table looks like the following:

Protocol Address	Network Path
2	10.1.0.1
3	10.1.0.2

The PT protocol configuration modules use the COMM property IOC_ROUTE to build the routing table. The property value for IOC_ROUTE is a pointer to a COMROUTE structure that contains the address translation between protocol address and network address. The format of this structure is as follows:

```
typedef struct {
    GPTDWORD    Destination;
    GPTBYTE     Type;
    GPTBYTE     Path[COM_MAX_PATH];
} COMROUTE, *LPCOMROUTE;
```

The property is used in the following way.

```
COMROUTE    Route;

Route.Destination = 2;
Route.Path = "10.1.0.1"

SetComm( hCom, IOC_ROUTE, route );
```

The routing table can be configured by the user application without using the IOC_ROUTE property.

COMPARAMS

The remainder of the network configuration is performed by setting communication properties used to open the COMM layer. These parameters are typically passed to the COMM in the COMPARAMS structure. When TCP/IP is being used in the COMM layer

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the COMPARAMS structure is set as follows:

```
COMPARAMS    comprop;  
  
comprop.Interface = (Network) ?  
    CM_INTERFACE_NETWORK : CM_INTERFACE_SERIAL;  
  
/* Indicate we are network client */  
Comprop.Translation = GPT_MASTER;  
  
If (Network) Then  
    comprop.UDP = (datagrams) ? TRUE : FALSE;  
    comprop.Port = network port to use  
End if
```

GPT properties

The GPT property IPROP_GPT_SWITCHED should be set to TRUE. This forces the PT to connect/disconnect network connections as appropriate.

TEST.EXE

To support configuration of either the serial or networked COMM the test program test.c was changed to parse an additional argument on the command line. This new argument is defined as follows:

```
test -ip:type:address:port
```

where:

- **Type.** The type of connection to use TCP or UDP.
- **Address.** The network name or address of the data server. For example 10.1.0.2
- **Port.** The number of the well-known port that the client/server connection is to be established over.

Examples:

```
test -ip:TCP:10.1.0.2:502
```

The above line runs the test program. The test program uses the stream protocol. The data server accepts connections for the network address 10.1.0.2 and port number 502. The GPT will initialize and service COMM requests with calls on asenet.c. The previous option -c is still supported. The -c option defines that a serial communication between client and server is to be used and invokes services defined in aserial.com. The following line invokes the test program and uses COM2 as the communication port.

```
test -cCOM2
```

The -ip and -c options are mutually exclusive. Only one of the options should be used when running the test program.

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